

# ANNUAL REPORT

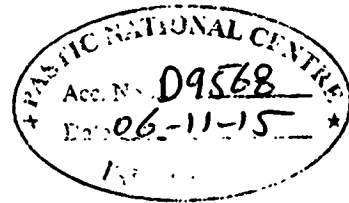
2011- 2012



**Pakistan Science Foundation**  
**Islamabad**

# ANNUAL REPORT

2011-2012



**PAKISTAN SCIENCE FOUNDATION**  
**1 - Constitution Avenue**  
**Islamabad**



# PAKISTAN SCIENCE FOUNDATION

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## ACRONYMS

AGR	Agricultural Sciences
AJK	Azad Jammu and Kashmir
AKU	The Agha Khan University, Karachi
B	Balochistan
BIO	Biological Sciences
BIOTECH	Biotechnology
C	Center
CDWP	Central Development Working Party
CEMB	Center of Excellence in Molecular Biology, Lahore.
CEME	College of Electrical and Mechanical Engineering, Rawalpindi.
CEWRE	Center of Excellence in Water Resources Engineering, Lahore.
CIIT	COMSATS Institute of Information Technology
COMSATS	Commission on Science and Technology for Sustainable Development in the South
COMSTECH	OIC Standing Committee on Scientific and Technological Cooperation
DDWP	Departmental Development Working Party
EARTH	Earth Sciences
ENG	Engineering Sciences
ENVR	Environmental Sciences
F	Frontier (Khyber Pakhtoonkhwa)
F-PU	Peshawar University Peshawar
GCU	Government College University, Lahore
GU	Gomal University, D. I. Khan
KU	Karachi University, Karachi
Med	Medical Sciences
NARC	National Agricultural Research Center
NIBGE	National Institute for Biotechnology and Genetic Engineering, Faisalabad
NNSFC	National Natural Science Foundation of China
NSLP	Natural Sciences Linkage Programme
NSTC	National Science and Technical Commission
P	Punjab
P-AU	Agriculture University, Faisalabad.
P-PU	Punjab University, Lahore
PHYS	Physical Sciences
PINSTECH	Pakistan Institute of Nuclear Science and Technology, Islamabad
PCCC	Pakistan Central Cotton Committee, Sakrand.
PSDP	Public Sector Development Working Party
S	Sindh
SALU	Shah Abdul Latif University, Khairpur, Sindh
SUIT	Sindh Institute of Urology & Transplantation, Karachi
SU	Sindh University, Jamshoro
SSGC	Sui Southern Gas Company
WWF	World Wildlife Fund for Nature



## **EXECUTIVE SUMMARY**

### **PAKISTAN SCIENCE FOUNDATION (PSF)**

Pakistan Science Foundation (PSF) is apex body for promotion and funding of scientific and technological research and other related activities in the country. The tasks undertaken by the Foundation for the performance of its statutory functions are divided into two broad categories viz., Science Promotion and Science Popularization. Some of these activities pertaining to above mentioned categories are undertaken by Pakistan Museum of Natural History (PMNH) and Pakistan Scientific and Technological Information Centre (PASTIC), the two subsidiary organizations of PSF, while others are performed by PSF Science Wing and are reflected as under:

#### **RESEARCH SUPPORT**

In order to promote basic and applied research relevant to socio-economic development of the country, Research Support Programme is playing a pivotal role in the Foundation. During 2011-12, a total of 383 projects in the fields of Agricultural, Biological, Chemical, Medical, Maths & Computer, Earth, Engineering Sciences, Biotechnology and Genetic Engineering and Physics remained under consideration. Out of these, 211 were under-process projects including 19 newly approved at a total cost of Rs.42.66 million and 172 ongoing research projects. An amount of Rs.3.45 million was released on account of first installments of newly approved projects. A total of 79 annual technical reports of on-going projects were received and sent to subject experts for evaluation and an amount of Rs.20.811 million released on account of due installments. Final technical reports of 10 on-going projects were presented to relevant Technical Committees and were adopted, account settled and files closed. From these completed projects, a total 59 research papers were published in different national/international journals, and 13 Ph.D, 33 M.Phil and 17 M.Sc (Hon) degrees were awarded to the Research Associates enrolled under these projects.

Focusing on collaborative research and strong industrial linkages, R&D-Industry Programme (previously called Industrial Linkages Programme, ILP) aimed to bring researchers, end-users and the funding institutions together at one platform to create an environment of a unified approach to identify and solve industrial problems through applied research and technology

transfer mechanism. During the year, a new project under the Protocol of S&T Cooperation between Pakistan and China (2012-2016) entitled "Molecular characterization, mass production and formulation of entomopathogenic nematodes" was approved and initiated at a total cost of Rs.8.671 million. In this connection, a group of Chinese Scientist visited Pakistan Science Foundation and participated in "International workshop on biological control of root knot nematodes in vegetables by EPNs". Projects entitled "Pilot scale studies and commercialization of indigenous deflouridation technology for drinking water" and "To speed-up the R&D work and production of humic acid fertilizer from lab scale to pilot plant/commercial scale" were recommended by Technical Committees and approved by Executive Committee for a total cost of Rs.3.792 and Rs.3.545 million, respectively.

#### **PAK-US NATURAL SCIENCES LINKAGE PROGRAMME (NSLP) ENDOWMENT FUND**

PSF maintains an Endowment Fund under Pak-US Natural Sciences Linkage Programme (NSLP) to boost the research in agriculture sector in the country. During the report period, a total of 67 research proposals were received from various organizations. Out of these, 48 projects were presented in Technical Committees, wherein, 20 projects were approved at a total cost of Rs.45.00 million. Currently, 44 projects are on-going at different universities and R&D organizations across the country, and an amount of Rs.31.00 million was released on account of due installments for smooth running of these projects. During the report period, 04 projects were also completed.

#### **SCIENCE PROMOTION ACTIVITIES**

During the report period, 18 requests of Institutional Support grants were received from various organizations, out of these, 07 were approved and Rs.2.15 million were released for enhancement of their research capabilities through procuring equipments and chemicals for latest and quality research. Further, an amount of Rs.4.15 million was released to various institutions for organizing 30 conferences, seminars, and workshops on important scientific topics, and Rs.2.82 million were released to 26 scientific societies/journals for their regular activities. An amount of Rs.0.729 million was paid to 13 M.Phil students on account of research fellowships for carrying out their M.Phil research at their parent institutions.

## **SCIENCE POPULARIZATION**

This section popularizes science by increasing its awareness in the society and development of scientific culture in the country. During the year 2011-12, Science Caravans, the Mobile Science Exhibitions have been playing vital role in increasing public awareness about science and motivated the younger generation towards study of science. There are 09 Science Caravan Units in operation, 08 in four provinces and one at Islamabad. All Caravan Units organized countrywide Caravan Exhibitions for 534 days in various schools, wherein, more than 169,115 students of 686 schools visited these exhibitions. Further, the Foundation in collaboration with Boards of Intermediate and Secondary Education organized 21<sup>st</sup> Essay & Poster competitions with themes "*Chemistry in our Daily Life*" and "*Food Security Threatened by Climate Change*" in English, Urdu and Sindhi languages, which were participated by thousands of students across the country. A total of 43 winner students were awarded cash prizes and certificates.

As another routine activity, some 18,000 copies of Popular Science magazine "*Monthly Global Science*" were distributed among 1,500 schools and more than 12,000 copies of scientific brochures among students through science caravans' exhibitions. The scientific journal "*The Fountain*" Published by The Light Publishing, Turkey was also provided to Caravan offices, PASTIC offices and PMNH. In addition, an amount of Rs.1,935,000/- was provided to 32 schools especially of rural areas and S&T organizations as financial assistance for strengthening of the Science Laboratories and organizing science popularization activities.

PSF has already signed MoU with the Academie des sciences, France for improvement of Science Teaching through Inquiry Based Science Education (IBSE)-La main a la pate (LAMAP) in the country. Under this MoU, 3rd International Training Workshop on Inquiry Based Science Education; La main a la pate-LAMAP was organized for Pakistani Teachers at PSF from 21-25 Nov, 2011, wherein, two French Master Trainers; Mr. Michel Ouliac and Mr. Patrick Marcel delivered lectures. More than 30 teachers across the country participated in this workshop. PSF in collaboration with Embassy of France also organized International Traveling Expo on Chemistry entitled "*It's All about Chemistry*" during the year 2011 -12 in 13 cities of Pakistan.

## **INTERNATIONAL LIAISON**

During report period. 38 proposals of PSF, PASTIC & PMNH for S&T collaboration with different countries were forwarded to MoST for consideration under various S&T Protocols/Agreements/MoUs signed by the Government of Pakistan. Under the Economic Cooperation Organization (ECO) platform, ECO Science Foundation was established on December 20, 2011 in its first BoT meeting in Islamabad as a specialized agency to function as a reservoir of highly skilled scientific and technical manpower and to facilitate promotion of scientific research among the member states with its secretariat in Islamabad. At present, it is operational and striving to meet the objectives as per its charter.

## **PLANNING AND DEVELOPMENT ACTIVITIES**

During the year 2011-12, an amount of Rs.3.0 million was received and utilized under an on-going Development Project titled "Participation of Scientists and Technologists in International Science Conferences, Seminars, Workshops and Trainings Abroad (Phase II)" for payment of travel grants to scientists/technologists for participation and presentation of research papers in these conferences etc. In addition, 06 PC-Is of PSDP projects were submitted to MoST for the consideration/approval of DDWP/CDWP, and 01 PC-IV of completed development project to MoST.

## **PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH)**

PMNH has four principal divisions namely Botanical Sciences, Zoological Sciences, Earth Sciences and Public Services. The first three divisions are engaged in the collection, identification and research activities pertaining to plants, animals and mineral resources of Pakistan, respectively; while the latter is responsible for mass education and popularization of natural history. During 2011-12, a total 27 filed studies were carried out in various parts of Pakistan and 3500 new samples of plants, animals and rocks/minerals were collected. A total of 3,230 samples were identified in laboratories and about 13,000 specimens were catalogued and labeled properly. The findings of research activities were got published in the form of 26 research papers in different journals. Regarding popularizing activities, a number of seminars/symposia and competitions were organized and about 90000 visitors (students and general public) visited display galleries of PMNH.

During the report period, a number of training workshops on Controlling Illegal Wildlife Trade, Modern Research Techniques in Ecology, Gemstone Identification and Evaluation, and Collection, Preservation and Identification of Plant Diversity were organized for students, teachers and researchers from all over the country. International Earth Day and the World Environment Day were also celebrated and a number of activities were arranged for students. A display stall was also arranged at Spring Flower Festival at PMAS Arid Agriculture University, Rawalpindi, which was inaugurated by Mr. Akhlaq Ahmad Tarar, Secretary, Ministry of Science & Technology, and Turkish professors were amongst the prominent persons. The scientists of Botanical, Earth, and Zoological divisions of PMNH conducted field studies for the collection of natural history specimens from various localities of Ziarat (Balochistan), Khairpur, Hyderabad, Sukher, Tharparkar districts of the Sindh; Bahawalpur, Multan, Chakwal, Khushab, Sargodha districts of the Punjab; Swat, Bunair and Shangla of KPK; Neelum Valley, Leepa valley, Muzaffarabad district in AJK, and various areas of Gilgit-Baltistan. This field and lab work resulted in publication of 25 research articles in reputed national and international journals, Ph. D. degree of one scientist and Research Productivity Allowance for some scientists. The outdoor display of 75 feet long skeleton of Blue Whale was completed, and 42 feet long whale shark was brought from Karachi to PMNH for preservation and display. An MoU was also signed with Snow Leopard Foundation (SLF) for collaborative research, and also reviewed 9 research papers for various national and international journals.

#### **PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE (PASTIC)**

Pakistan Scientific and Technological Information Centre (PASTIC) is the premier organization in the field of S & T information management and dissemination in the country. During the report period, 43 services stalls and 12 awareness seminars were organized at various departments of 21 universities, 07 R&D organizations/institutes and also at some conferences/seminars. The updating of in-house databases such as Serial Holdings of Libraries of S&T Institutions of Pakistan, research published in Pakistan and scientific periodicals of Pakistan remained in progress. Further, a total 831 articles were supplied to 360 researchers and 852,277 references/abstracts to 5001 researchers/users from International Bibliographic Databases, both online and offline in all major disciplines of Science and Technology under the Document Supply and Bibliographic Information Services.

PASTIC also regularly publishes abstracting journal entitled "Pakistan Science Abstracts" (PSA) in ten different scientific disciplines. Five issues of bimonthly Trade and Technology news e-bulletin entitled "Technology Roundup" were published online and as a result oriented and coordinated University-Industry Programme, various seminars, symposia and exhibitions were organized at the Chambers of Commerce & Industry in Sargodha, Gujranwala, Karachi, Peshawar and Islamabad. During report period, a total 2,519 users visited PASTIC library and the library also received 637 issues of national and international journals in exchange of Pakistan Science Abstracts, under international cooperation activities. In addition, 125 books, 54 reports, miscellaneous documents were acquired, processed and shelved for further use. Bulletin of Fresh Arrivals was also published on monthly basis and under Reprographic Service, 115 printing jobs of eight R&D organizations were performed.

PASTIC also acts as the National Focal Point for International/Regional Information Networks, like SAARC Documentation Center, WHO/CEHANET, IFAP/UNESCO and is the national distributor of UNESCO developed library management software WINISIS and IDAMS. During the year, WINTSIS was supplied to 103 Librarians and other professionals and two training workshops were organized on this package/ABCD Software. Four officers/Official of PASTIC and Mehran University of Engineering and Technology, Jamshoro, Sindh, availed the training under the training opportunities offered by SAARC Documentation Centre. For collaborative work, proposals for bilateral cooperation of S&T information exchange with Argentine, Brazil, Egypt, Italy, Korea, Norway, Russian Federation and UNESCO were prepared and forwarded to MoST for further processing. Moreover, 28 seminars, workshops and symposia on PASTIC Information Services, Library and Information Management, Veterinary Vaccines, Patent Protection for R&D, Scientific Image Processing, Technologies for Citrus Fruits & Pulses Processing & Rice Sector, Leadership Skills trainings were organized and 103 Librarians and other professionals were trained in the area of automation of libraries and modern information handling techniques. In view of the importance of public private partnership, PASTIC signed two MoUs: each with MIS Ariel Media Services (Pvt) Ltd. for airing S&T documentaries of PASTIC on TV channels free of cost and M/S Recto International (a private printing company) for commercialization of printing services of PASTIC.

## **INTRODUCTION**

Pakistan Science Foundation was established on June 30, 1973 under the Pakistan Science Foundation Act No. III of National Assembly (**Annexure-1**) as an autonomous body to promote and finance scientific and technological activities having a bearing on the socio-economic needs of the country. The tasks undertaken by the Foundation for the performance of its statutory functions are divided into following three broad categories:

- i. Science Promotion supports basic and fundamental as well as applied research involving researchers/academia at universities and R&D organizations focusing socio-economic needs/development of the country.
- ii. Science Popularization endeavoring to image scientific ideas to grasp the concept of fundamental science.
- iii. Science Centres to encourage all segments of society in thinking, understanding and exploring science.

Under the Act, the Foundation has been entrusted to carry out the following functions:

- i) Establishment of comprehensive scientific and technological information and dissemination centers.
- ii) Promotion of basic and fundamental research in universities and other institutions on scientific problems relevant to the socio-economic development of the country.
- iii) Utilization of the results of scientific and technological research including pilot plant studies to prove the technical and economic feasibility of processes found to be promising on a laboratory scale.
- iv) Establishment of science centers, clubs, museums, herbaria and planetaria. Promotion of scientific societies, associations and academies engaged in spreading the cause of scientific knowledge in general or in the pursuit of a specific scientific discipline or technology in particular.
- vi) Organization of periodical science conferences, symposia and seminars.
- vii) Exchange of visits of scientists and technologists with other countries.
- viii) Grant of awards, prizes and fellowships to individuals engaged in developing processes, products and inventions of consequence to the economy of the country.
- ix) Special scientific surveys not undertaken by any other organization and collection of scientific statistics related to the scientific efforts of the country.

The Foundation shall also:

- i) Review the progress of scientific research sponsored by it and evaluates the results of such research.
- ii) Maintain a National Register of highly qualified and talented scientists/engineers and doctors both in and outside Pakistan, and to assist them in collaboration with concerned agencies to seek appropriate employment.
- iii) Establish liaison with similar bodies in other countries.

## ACTIVITIES AND PROGRAMMES

The activities and programmes undertaken by the Foundation to perform its statutory functions can be divided into the following four categories:

- i) Promotion and Financing of Scientific Research in the Country and the Utilization of the Research Results.
- ii. Promotion and Popularization of Science in Society.
- iii. International Liaison.
- iv. Establishment of Comprehensive Scientific and Technological Information Dissemination Centers.

The main functions of the Foundation i.e., research support and science popularization etc., are performed by the Science Wing of the Foundation and their detail is given as under:

**Research Support** is performing the following activities:

- Research Support
- Grants for Research Projects
- Grants for Institutional Support Research Evaluation
- Promotion/funding of Scientific Societies/Learned Bodies
- Funding for Conferences, Symposia, Seminars & Workshops.
- Travel Grants
- International Liaison
- Awards and Fellowships
- Survey and Statistics
- Scientists Pool
- Innovations & Inventions
- Planning and Development Programme

**Science Popularization** carries out science popularization activities including Science Caravans, Science Clubs, Science Fairs and holding of Popular Science Lectures, Workshops, Conferences and Symposia.

**Pakistan Museum of Natural History (PMNH)** is a subsidiary organization of PSF, established in 1979 to serve the national needs in the vitally important areas of research, conservation and education involving Pakistan's heritage of natural resources. The Museum is a National Repository for permanent storage of plants, animals, rocks, minerals and fossils of the country.

**Pakistan Scientific and Technological Information Centre (PASTIC)**; another subsidiary organization of PSF, performs as Scientific and Technological Information Dissemination Center with its sub offices in all provincial capitals of the country.



## **I. PAKISTAN SCIENCE FOUNDATION (PSF)**

### **1.0 RESEARCH SUPPORT**

#### **1.1 Research Funding**

##### **1.1.1 Research Projects Funded**

Research Support (Science Promotion) is the principal programme of Pakistan Science Foundation for the promotion of basic and applied research relevant to the socio-economic development of the country. The criteria for funding of research projects include the availability of basic equipment and laboratory facilities, scientific and technical merit of the proposed research projects and likelihood of completion of the proposed research within the stipulated time and budget. Each proposal, after getting reviewed from subject expert in the particular field, is placed before the relevant Technical Committee for technical and fiscal evaluation and recommendations for provision of funds. The proposal, if recommended by the Technical Committee, is then submitted to PSF Executive Committee for final approval.

##### **a. Under-Process Projects**

During 2011-12, 383 research proposals remained under active consideration of the Foundation. Out of these 211 projects were under-process and 19 were approved at the total cost of Rs.42.66 million (**Annexure-II**), whereas Rs.3.45 million were released on account of first installments of these approved projects.

##### **b. On-Going Projects**

During report period 172 research projects were remained on-going and 79 progress reports (semi annual, 1<sup>st</sup>, 2<sup>nd</sup> annual & final) were received. Semi annual reports were scrutinized by PSF staff, whereas the annual and final reports after initial scrutiny were sent for evaluation to the subject experts to assess the interim progress of the projects. The due installments of on-going projects are released only if interim progress of the projects is satisfactory. An amount of Rs.20.811 million was released on account of due installments and evaluation fee of ongoing projects. A list of the semi-annual, annual and final reports is given as **Annexure-III**.

### c. Completed Projects

During the year 2011-12, 12 research projects were completed. The subject experts evaluated the final technical reports of these projects, which were subsequently placed before the respective PSF Technical Committees for consideration. After adaptation of these reports by the Committee, the accounts of these projects were settled and files were closed. A list of the completed projects followed by their scientific output is given below:

S.No.	Project No.	Project Title
1.	PSF/Res/S-SAU/Agr (382)	Documentation of Predatory Spiders and Their Role in Suppression of Pests of Major Crops in Sindh
2.	PSF/RES/P-AU/Bio (350)	Development, Standardization and Evaluation of Probiotics in Poultry
3.	PSF/RES/P-AU/Bio (286)	Taxonomy and ecology of spider communities of citrus orchards plantation and the role of spiders as predators.
4.	PSF/RES/S-KU/Bio (341)	Experimental Farming of Commercially Important Marine Shrimps
5.	PSF/RES/S-KU/Bio (360)	Hatchery Culture of Commercially important Oysters
6.	PSF/Res/S-KU/Envr (78)	Biodiversity Systematics and Ecology of Free Living Marine Nematodes of Arabian Sea from Pakistan
7.	PSF/Res/P-AU/Envr (85)	Studies on Toxic Effects of Metal Mixtures on Fish
8.	PSF/Res/P-UHS/Med (292)	To Assess the Effect of Dietary Calcium intake and Vitamin D Status on Bone Turnover Markers in Pakistan Adult Females
9.	PSF/Res/S-AKU/Med (263)	Anti Inflammatory Effect of <i>Zingiber officinale</i> (Ginger) and Methylprednisolone on the Rat Model of Allergic Inflammation
10.	PSF/Res/P-PU/Phys (131)	Nonlinear Electromagnetic Wave Propagation in Plasma Like Media
11.	PSF/Res/C-QU/Phys (134)	Measurements of Photo-Ionization Cross Section of Atoms
12.	PSF/Res/C-QU/Phys (138)	Developing a Proto-type Processing Reactor for Plasma Ionitriding of Steels

**i) AGRICULTURAL SCIENCES**

<b>Project No:</b>	<b>PSF/Res/S-SAU/Agr (382)</b>
<b>Project Title:</b>	<b>Documentation of Predatory Spiders and Their Role in Suppression of Pests of Major Crops in Sindh</b>
<b>Duration:</b>	<b>2-Years</b>
<b>Date of Initiation:</b>	<b>01-11-2009</b>
<b>Date of Completion:</b>	<b>30-11-2011</b>
<b>Total Expenditure:</b>	<b>Rs.8,82,419/-</b>
<b>Principal Investigator:</b>	<b>Prof. Rab Dino Khuhro</b>
<b>Name of Institution:</b>	<b>Sindh Agriculture University, Tandojam</b>

**SUMMARY:**

The studies on survey, collection and identification of spider fauna associated with Cotton, Sunflower, Rice, Brassica, Tomato, Sugarcane, Okra and Wheat crops grown in different districts of Sindh revealed that 31 genera and 28 species belonging to 12 families were identified throughout the period under study. Twelve (12) families were Araneidae, Salticidae, Oxyopidae, Lycosidae, Tetragnathidae, Thomisidae, Corinnidae, Sparassidae, Miturgidae, Philodromidae, Theridiidae, and Gnaphosidae.

**ii) BIOLOGICAL SCIENCES**

<b>Project No:</b>	<b>PSF/Res/P-AU/Bio (350)</b>
<b>Project Title:</b>	<b>Development, Standardization and Evaluation of Probiotics in Poultry</b>
<b>Duration</b>	<b>2-Years</b>
<b>Date of Initiation:</b>	<b>23.08.2007</b>
<b>Date of Completion:</b>	<b>22.08.2009</b>
<b>Total Expenditure:</b>	<b>Rs.709,920/-</b>
<b>Principal Investigator:</b>	<b>Dr. Muhammad Siddique (Late)</b>
<b>Name of Institution:</b>	<b>University of Agriculture, Faisalabad</b>

**SUMMARY:**

The beneficial microorganisms *Lactobacillus acidophilus*, *Streptococcus thermophilus* and *Aspergillus oryzae* were isolated from intestinal contents of healthy birds as well as from yogurt samples. *Lactobacillus acidophilus* was isolated from intestinal contents of poultry after cultivation on deMan Rogosa and Sharpe (MRS) agar, *Streptococcus thermophilus* was isolated from the yogurt after cultivation on M-17 agar and *Aspergillus oryzae* was isolated from poultry gut after cultivation on potato dextrose agar. The pathogenicity of all isolated

microorganisms was tested by inoculation of undiluted overnight broth culture in broiler chicks. These microorganisms were evaluated as probiotics in experimental broiler chicks. These microorganisms were evaluated as probiotics in experimental broiler chicken. The experimental group which was given mixture of *Lactobacillus acidophilus* and *Streptococcus thermophilus* showed significantly better results by attaining higher post- vaccinal antibody titers against ND and IBD vaccines. This group also showed significantly higher live body weight, lower feed intake, decreased feed conversion ration and lower mortality percentage.

<b>Project No:</b>	<b>PSF/Res/P-AU/Bio (286)</b>
<b>Project Title:</b>	<b>Taxonomy and Ecology of Spider Communities of Citrus Orchards Plantation and the Role of Spiders as Predators</b>
<b>Duration:</b>	<b>3-Years</b>
<b>Date of Initiation:</b>	<b>1.6.1999</b>
<b>Date of Completion:</b>	<b>31.5.2002</b>
<b>Total Expenditure:</b>	<b>Rs.336,171/-</b>
<b>Principal Investigator:</b>	<b>Dr. Shakila Khalid</b>
<b>Name of Institution:</b>	<b>University of Agriculture, Faisalabad</b>

#### **SUMMARY:**

Citrus foliage spider fauna is much richer than the ground surface fauna of citrus orchard. Foliage spiders maintained high relative densities throughout year while the density of ground surface spider was low. From the citrus foliage 10 species and from ground floor 8 species of spiders exhibited numerical dominance in the samples. These species were considered as the potential candidates for field culturing and release at critical points of time for inhibiting the pest insect population inhibiting the citrus orchards. The life histories of three numerically dominant species indicated that they breed from March to October. During non breeding period when food and shelter is scarce mortality of the spiders can be minimized by providing artificial shelters in the form of straw bundles.

<b>Project No.</b>	<b>PSF/Res/S-KU/Bio (341)</b>
<b>Project Title:</b>	<b>Experimental Farming of Commercially Important Marine Shrimps</b>
<b>Duration:</b>	<b>3-Years</b>
<b>Date of Initiation:</b>	<b>01.09.2006</b>
<b>Date of Completion:</b>	<b>31.08.2008 (Extended till 31.08.2009)</b>
<b>Total Expenditure:</b>	<b>Rs.659,460/-</b>
<b>Principal Investigator:</b>	<b>Dr. Zarien Ayub</b>
<b>Name of Institution:</b>	<b>CEMB, University of Karachi, Karachi</b>

## SUMMARY:

The present study showed a substantial amount of seed of commercially important species of shrimp, *Penaeus merguensis* available in the lagoon adjacent to Sonmaini, Balochistan. In the first experimental trial, the statistical analysis showed that there was significant difference in the weight or growth of the shrimps in the two tanks fed with two typed of feed, that is, Feed-1 and Feed 2, though the water quality parameters were not significantly different in two tanks. In the second experimental trial conducted in the present study showed that there was statistically a significant difference in the growth of shrimps in pond-1 (partition-1) and pond 2 (partition-2) although fed with same diet, diet-1. However there was significant difference in the water quality parameters of the two ponds. Similarly a significant difference in the weight or growth of shrimps was found in pond-2 (partition-1) and pond-2 (partition-2) fed respectively with diet-2 and diet-1, although water quality parameters were same in both partitions.

Project No.	PSF/Res/S-KU/Bio (360)
Project Title:	Hatchery Culture of Commercially Important Oysters
Duration:	2-Years
Date of Initiation:	01.09.2007
Date of Completion:	31.08.2009
Total Expenditure:	Rs.993,480/-
Principal Investigator:	Dr. Ghazala Siddique
Name of Institution:	University of Karachi, Karachi

## SUMMARY:

The project is initially designed in its first phase to developing micro algal feed for the larvae and the adult edible oysters. The establishment of the algal culture facility and training of the staff is first phase of the project. The batch cultures of the different strains are being grown in the laboratory. The three commercial strains of algae, *Isochrysis galbana* (T-ISO), *Tetraselmis chui* and *Chaetoceros neogracile* were procured Milford Algal Collection centre, USA. The algal culture were grown upto the mass volume of 30L. T-ISO which is required for the initial stages of oysters is showed the highest growth rate in mass cultures. All the three strains were successfully grown at 30-35°C. In the second phase initial experiments with oyster conditioning and spawning were carried out and survival rate up to 60% was observed

till veliger stage. After the pediveliger stage the larvae were allowed to set on cultch. The mylor sheets were used as cultch in the experiment carried out. In all the diets positive trend was observed in growth. However, the best results were observed in diet composed of mixture of T-ISO and *Chaetoceros neogracile*.

### iii) ENVIRONMENTAL SCIENCES

<b>Project No.</b>	<b>PSF/Res/S-KU/Envr (78)</b>
<b>Project Title:</b>	<b>Biodiversity, Systematics and Ecology of Free Living Marine Nematodes of Arabian Sea from Pakistan</b>
<b>Duration:</b>	<b>3-Years</b>
<b>Date of Initiation:</b>	<b>01-07-2008</b>
<b>Date of Completion:</b>	<b>30-06-2011</b>
<b>Total Expenditure:</b>	<b>Rs.13, 39,260/ -</b>
<b>Principal Investigator:</b>	<b>Dr. Nasira Kazi</b>
<b>Name of Institution:</b>	<b>University of Karachi, Karachi</b>

### SUMMARY:

During the project period (July 2008-June 2011) surveys were conducted along the coastal areas of Sindh and Balochistan and meiofauna samples were collected from various coasts of Karachi viz. Bin Qasim, Korangi Creek, Clifton, Sandspit, Keamari (Sindh), Sonmiani and Gwadar (Balochistan). The analysis of water and sediments samples was undertaken for the assessment of pollution and marine nematode fauna in pre monsoon, monsoon and post monsoon seasons, the collected marine water samples were tested for deferent physical, chemical and other parameters. These include Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), Oil and Grease, Organic matter, Phenol, Phosphate, Total Kjeldahl nitrogen, Total suspended solid, Turbidity, Salinity, pH, Cyanide, Arsenic, Chromium, Cadmium, Copper, Lead and Mercury. The data of physio-chemical parameters and heavy metals showed that they were at higher level when compared with National Environmental Quality Standard (NEQS). The relation between nematode density, community structure and environmental parameters were also investigated. Highest significant differences were found in almost all physio-chemical parameters at Bin Qasim when compared with NEQS. Whereas, at other sampling sites the physio-chemical parameters of meiofauna samples varied which were above or within the highest desirable limit or maximum permissible limit given by

NEQS. The mean nematode density showed significant negative correlation with some environmental parameters and heavy metals in the samples.

Furthermore the seasonal variations in then species composition, density and trophic group composition of marine nematodes were also studied at all the sampled sites. The nematode faunal composition in the surveyed areas varied in all the season. The four nematode genera viz., *Metacanthion* de Man, 1907; *Paracanthion* Microleitzky, 1924; *Theristus* Bastain, 1865 and *Terschellingia* de Man, 1888 were present constantly in five out of seven sampling sites during 2008-2009 while the genus *Theristus* was found persistently in all the sampling sites throughout the observation period of 2009-2010. The rest of the nematode genera were present occasionally in low and varied density in the surveyed sites of both years. All nematode genera were classified according to their feeding habits into trophic groups.

Detailed taxonomic studies of new and known species extracted from marine water samples was also undertaken. In the course of the taxonomic studies during the project years (2008-11) seven new species of marine nematodes have been described viz., *Onyx* Balochistan Nasira., Rehmat & Shahina, 2011; *Halaphanolaimus marinas* Kamran, Nasira & Shahina, 2010; *Microilaimus amphidius* Kamran, Nasira & Shahina, 2009; *S. oblongus* Kamran, Nasira & Shahina, 2009; *S. marine* Kamran, Nasira & Shahina, 2009 while six new records of marine nematodes were also reported during this period viz. *Diphloilaimella dievengatensis* Jacobs, Velde, Geraert & Vrenken, 1990; *Theristus longisetifer* Kito & Aryuthaka, 1998; *Trichotheristus floridanus* Wiser & Hopper, 1967; *Sabatieria microsietosa* Timm, 1967; *Diphloilaimellodes delyi* Andrassy, 1958 and *Trissonchulus oceanus* Cobb, 1920. All these new species and new records have been described and red scribed along with illustrations, photomicrographs and measurements.

Besides the aforementioned studies, other studies were also undertaken i.e, Marine nematodes at Port Bin Qasim of Arabian Sea and their role in the ecosystem; Response of marine nematode community to heavy metal contamination along the coastal areas of Sindh and Balochistan; the marine nematode fauna and their trophic composition from sandspit backwater mangrove areas. All these investigations and information's generated during this period are reported herein.

<b>Project No.</b>	<b>PSF/Res/P-AU/Envr (85)</b>
<b>Project Title:</b>	<b>Studies on Toxic Effects of Metal Mixtures on Fish</b>
<b>Duration:</b>	<b>3-Years</b>
<b>Date of Initiation:</b>	<b>01-03-2009</b>
<b>Date of Completion:</b>	<b>28-02-2012</b>
<b>Total Expenditure:</b>	<b>Rs.17, 63,580/-</b>
<b>Principal Investigator:</b>	<b>Prof. Dr. Muhammad Javed</b>
<b>Name of Institution:</b>	<b>University of Agriculture, Faisalabad</b>

#### **SUMMARY:**

Majority of research work has been conducted on the toxic effects of single metal species. However, the aquatic organisms are typically exposed to the mixtures of metals. Therefore, in order to provide data supporting the usefulness of freshwater fish as indicators of heavy metal's pollution, the acute toxicity of 19 mixtures of five metals viz. Fe, Zn, Pb, Ni and Mn has been determined for five commercially important fish species (*Catla catla*, *Labeo Rohita*, *Cirrhina mrigala*, *Ctenopharyngodon idella* and *Hypophthalmichthys molitrix*). The present work also focuses on fish growth under metals stress and the extent of metals bio accumulation in fish organs during acute and chronic exposures. This project was conducted in three phases:

- Determination of acute toxicity of 19 mixtures of five metals (iron, zinc, lead, nickel and manganese) for the fish and to monitor their tendency to bio-accumulate metals in body organs
- Growth responses of fish and their ability to bio-accumulate metals during chronic stress of 19 mixtures of metals
- Studies on growth and depuration of metals in mixture stressed fish reared in earthen ponds (metal free environment) under semi-intensive composite culture system

#### **iv) MEDICAL SCIENCES**

<b>Project No.</b>	<b>PSF/Res/P-UHS/Med (292)</b>
<b>Project Title:</b>	<b>Anti Inflammatory Effect of <i>Zingiber officinale</i> (Ginger) and Methylprednisolone on the Rat Model of Allergic Inflammation</b>
<b>Duration:</b>	<b>2-Years</b>
<b>Date of Initiation:</b>	<b>01.07.2010</b>
<b>Date of Completion:</b>	<b>30.06.2011</b>
<b>Total Expenditure:</b>	<b>Rs.204,260/-</b>
<b>Principal Investigator:</b>	<b>Dr. Muhammad Shehzad</b>
<b>Name of Institution:</b>	<b>University of Health Sciences, Lahore</b>



## SUMMARY:

Recent era has witnessed an increased prevalence of allergy and asthma. This requires more attention and effective therapies since the current therapeutic approaches have high side effects. This attention has led to the exploration of alternative medicines with particular interest in the plant production. Reviews published in recent year suggest that some of these folklore medicines have significant effect in reducing the severity of respiratory disease symptoms. Alternative medicines, particularly plant extracts have shown acceptance by patients and physicians alike. However, very few detailed scientific studies have been conducted to further the understanding of the anti-allergic mechanisms associated with these products. The *Zingiber officinal* (Ginger) has been traditionally used by various cultures throughout the world as a natural remedy for several ailments.

The present study was designed to see the anti-inflammatory effect of *Zingiber officinal* on the mouse model of allergic airway inflammation and to compare it with effect of methylprednisolone. Mice were divided into five different groups. Group A (Control group) was given phosphate buffered saline intraperitoneally and challenged intranasally with PBS. Groups B, C, D and E were sensitized intraperitoneally and challenged intranasally with Ova-albumin. Groups C, D and E were treated with methylprednisolone, ethanolic and aqueous extract of ginger respectively. Blood, bronchoalveolar lavage fluid, and lung tissue were analyzed for the presence of allergic inflammation by checking the infiltration of inflammatory cells in blood and BALF; histopathological lesions in lung tissue; and proinflammatory cytokine IL-4, and IL-5 mRNA expression levels in lungs by Reverse Transcription Polymerase Chain Reaction (RT-PCR). The mice sensitized and challenged with Ova-albumin developed allergic airway inflammation showing inflammatory cell infiltration like total leucocytes, neutrophils, eosinophils in BALF and blood. Moreover pathological lesions in the lungs were enhanced along with increased levels of IL-4 and IL-5 mRNA expression. The treatment with methylprednisolone, ethanolic and aqueous extracts of ginger exhibited a significant reduction in all the markers of allergic airway inflammation including the number of inflammatory cells, lung histopathological lesions and mRNA expression of IL-4 and IL-5 in the lungs. The ameliorating effect of ethanolic and aqueous ginger extracts in group D and E was comparable to the effect of methylprednisolone in group C.

The results clearly indicate that the ginger possesses the capacity to improve the allergic airway inflammation by abrogation of Th2-driven allergic responses, by reducing the invasion of inflammatory cells in the lung; improving lung histopathology, terminating IL-4 and IL-5 mRNA expression.

<b>Project No.</b>	<b>PSF/Res/S-AKU/Med (263)</b>
<b>Project Title</b>	<b>To Assess the Effect of Dietary Calcium Intake and Vitamin D Status on Bone Turnover Markers in Pakistan Adult Females</b>
<b>Duration:</b>	<b>2-Years</b>
<b>Date of Initiation:</b>	<b>20.09.2010</b>
<b>Date of Completion:</b>	<b>19.09.2011</b>
<b>Total Expenditure:</b>	<b>Rs.1,984,416/-</b>
<b>Principal Investigator:</b>	<b>Dr. Ayesha Habib Khan</b>
<b>Name of Institution:</b>	<b>The Agha Khan University, Karachi</b>

#### **SUMMARY:**

A large population group of Pakistanis living in Europe has been identified to be a major risk of Vitamin D<sub>3</sub> deficiency (VDD) due to low Vitamin D<sub>3</sub> intake and sufficient sun exposure. Studies also highlighted more severe VDD in Pakistanis when compared with similar other immigrant ethnic groups. This study was undertaken to understand the underlying determinants of food intake and sunlight exposure in community dwelling premenopausal females in Karachi so that appropriate management strategies can be planned for its detection and prevention.

A cross-sectional study was conducted in three selected communities of Karachi. Selection of communities was done randomly. Through random draw 3 towns were selected (Sadder Town, Gulshan-e-Iqbal and Malir). Recruitment of participants was started from 3<sup>rd</sup> January, 2011 from Sadder and Malir 31<sup>st</sup> May, 2011. House hold selection was done by household recruitment of participants from lanes adjacent and across the starting point Aga Khan collection/Phiebotomy Centre and was done in a systematic way with random start. One individual female (Age  $\geq$  18 Years) satisfying the inclusion criterion was included after informed consent from every 3<sup>rd</sup> house. Questionnaires were filled and participants were offered biochemical testing for which 10 c.c. blood sample was collected and flowing tests

were performed: Calcium, Phosphorous, albumin, alkaline phosphates, creatinine, SGPT, VitaminD3 serum NTx and plasma PTH.

Vitamin D<sub>3</sub> deficiency was highly prevalent with secondary hyperparathyroidism (sHPTH) and high bone turnover among community dwelling females of Pakistan. Prevalence of VDD was 90.5%, with sHPTH in 44.2% and high bone turnover in 24% of the study participants. Majority of the study participants were residing in apartments and townhouses. Mean Ca intake of the study participants was  $686.2 \pm 271.4$  mg. Result also showed that 82% of the females had less exposure to the sunlight.

Vitamin D<sub>3</sub> deficiency with sHPTH and increased bone turnover is highly prevalent indicating poor bone health status of premenopausal females. Housing structure is a significant predictor of vitamin D<sub>3</sub> levels. Despite of low sun exposure and ion calcium intake none of the factor was significantly associated with severe Vitamin D<sub>3</sub> deficiency in community dwelling Pakistani women. Measure to combat the issue of severe D deficiency and efforts should be made to provide awareness regarding importance of calcium intake and sunlight exposure for bone health.

v) **PHYSICS**

<b>Project No.</b>	<b>PSF/Res/P-PU/Phys (131)</b>
<b>Project Title:</b>	<b>Nonlinear Electromagnetic Wave Propagation in Plasma like Media</b>
<b>Duration:</b>	<b>3-Years</b>
<b>Date of Initiation:</b>	<b>27.07.2006</b>
<b>Date of Completion:</b>	<b>26.07.2009</b>
<b>Total Expenditure:</b>	<b>Rs.3,80,044/-</b>
<b>Principal Investigator:</b>	<b>Dr. Rashid Ali</b>
<b>Name of Institution:</b>	<b>University of the Punjab, Lahore</b>

**SUMMARY:**

In this project P.I. analytically investigated the wave propagation in plasma like media. He has considered three different types of composite layered media through which the wave propagate. In the detailed report P.I. discuss these problems one by one.

- (i) First problem was related to the Nonlinear Magnetostatic surface waves in a composite structure consisting of a ferrite film of Yttrium Iron Garnet (YIG) adjacent

to a isotropic nonlinear dielectric cover having Kerr-like effect and a substrate of left-handed material (which is created by an array of long metallic wires, yielding a plasma like effective dielectric constant, interspersed with an array of split ring resonators). This is a review work and P.I summarize his results involving differences, similarities and additional work in the discussion. The behavior presented in these results might be used in the construction and design of microwave devices, such as switches, filters, isolators etc.

- (ii) After completing the above work P.I. undertook a problem related to the study of the dispersion of magneto static surface waves propagating in a composite (layered) waveguide structure of a linear dielectric, ferrite film and a conductor. Investigate the dependence of effective wave index on the propagation frequency for the cases of poor and infinite conductivities. It is found that for poor conductors, our dispersion relation reduces to the well known expression of Damon-Eshbach surface wave mode for tangentially magnetized ferrite film, and in the other case (for infinite conductivity) we observe the different results on the dispersion characteristics. This work has been published in Journal of Natural Science & Mathematics.
  
- (iii) The third problem which consists of two cases is related to the wave propagation in a (a) good conducting and in a (b) high-temperature superconducting parallel plate waveguides, filled with nonlinear left-handed material (LHM). In this first case, we consider a nonlinear left-handed material between two parallel conducting plates. In this case the nonlinear response of left-handed material is characterized by dielectric permittivity which depends upon the intensity of electric field (Kerr-type nonlinearity), that is, study the nonlinear propagation properties of nonlinear LHM filled waveguide structure between parallel conducting plates. Found that the electromagnetic field distributions in the nonlinear LHM filled parallel-plate waveguide are similar to the cases of linear dielectric or linear LHM filled parallel-plate waveguide structure. In the second case, P.I. studied the wave propagation in high-temperature superconducting parallel plate waveguide filled with nonlinear left-handed material (LHM). Here the Meissner effect is used in boundary conditions to discuss the wave propagation due to the presence of high temperature superconducting

parallel-plates. The wave propagation properties of these IITS parallel plate waveguide filled with nonlinear LHM are compared with some earlier theoretical results. The dispersion relations of transverse electric mode have also been discussed numerically for these two types of waveguide structures. This work has been accepted in the Chinese Physics B. In this research work P.I. investigated the nonlinear wave propagation from a theoretical point of view, and the areas of interest (i.e. semiconductors, and composite or layered medium etc) that considered were ones where a classical or semi-classical approach was possible. Thus P.I. was mainly interested in considering the nonlinear propagation of waves in such media.

<b>Project No.</b>	<b>PSF/Res/C-QU/Phys (134)</b>
<b>Project Title:</b>	<b>Measurements of Photo-Ionization Cross Section of Atoms</b>
<b>Duration:</b>	<b>3-Years</b>
<b>Date of Initiation:</b>	<b>01.02.2008</b>
<b>Date of Completion:</b>	<b>31.01.2011</b>
<b>Total Expenditure:</b>	<b>Rs.746,584/-</b>
<b>Principal Investigator:</b>	<b>Prof. Dr. M. Aslam Baig, S.I., T.I.</b>
<b>Name of Institution:</b>	<b>Quaid-I-Azam University, Islamabad.</b>

#### **SUMMARY:**

The project was initiated to measure the photoionization cross sections of atoms, in particular from the excited states of atoms. We have concentrated on the inert gases, alkali atoms and alkaline earths because of their easy handling and achieving a reasonable vapor density at a temperature below 1000 K. The interest in the inert gases is because of the availability of the Hollow Cathodes that are filled with the inert gases and can be used with much ease to generate the Laser Optogalvanic spectra of these gases. The pump-probe experimental setup contains an excitation source (Nd:YAG Laser GCR-11) which is used to pump two dye lasers; one as exciting laser and the second as an ionizing laser. We have collected the data for the photoionization cross sections for a number of excited states of atoms such as sodium, potassium, barium, krypton and xenon. Four students have earned their M.Phil degrees based on the experimental work conducted in this project. Some results have been published in the journals of repute.

<b>Project No.</b>	<b>PSF/Res/C-QU/Phys (138)</b>
<b>Project Title:</b>	<b>Developing a Proto-type Processing Reactor for Plasma Ionitriding of Steels</b>
<b>Duration:</b>	<b>2-years</b>
<b>Date of Initiation:</b>	<b>01.04.2008</b>
<b>Date of Completion:</b>	<b>31.03.2011</b>
<b>Total Expenditure:</b>	<b>Rs.805,926/-</b>
<b>Principal Investigator:</b>	<b>Prof. Dr. M. Zakaullah</b>
<b>Name of Institution:</b>	<b>Quaid-I-Azam University, Islamabad</b>

#### SUMMARY:

##### 1) The characterization of non-thermal Ne-N<sub>2</sub> mixture RF discharge

The optical emission spectroscopy studies of low pressure (0.1-0.5 mbar) Ne-N<sub>2</sub> capacitively coupled RF plasma is conducted that can be used for plasma nitriding etc. It reports the methods to calculate the electron temperature ( $T_e$ ) in non-local thermodynamic equilibrium (LTE) plasmas, Since, the selected Ne-I lines used to calculate electron temperature are found in corona balance, therefore, it allows us to use modified Boltzmann plot technique to calculate electron temperature. Langmuir probe is also used to calculate electron temperature and electron energy distribution functions (EEDF). The measurements are worked out for different discharge parameters like neon percentage, pressure and power. It is found that electron temperature  $T_e$  increases with neon percentage and decreases with increase in pressure. Whereas, Excitation temperature ( $T_{ex}$ ) increases with power, neon percentage and decreases with pressure. It is also observed that electron temperature measured by Langmuir probe technique is slightly greater than the one measured via modified Boltzmann plot method. The tails of the EEDF's gain height and extends towards the higher energy, with increase in neon percentage in the mixture. The work has been published in Journal of Applied Physics (JAP), and the reference is cited below:

N.U. Rehman, M. Zakaullah, F.U.Khan, S. Naseer, 104,423304 (2008)

##### 2) Diagnostic of 13.56 MHz RF sustained Ar-N<sub>2</sub> plasma by optical emission spectroscopy

Optical Emission Spectroscopy (OES) is used to investigate the effect of argon gas mixing on the electron temperature, the degree of nitrogen dissociation and the active species concentration in a 13.56 MHz radio frequency (RF) sustained nitrogen plasma. The electron temperature is determined from Ar-I emission line intensities by using the modified

Boltzmann's plot method and is found to be increased with argon mixing in nitrogen plasma. The concentration of active species  $N_2(C^3\Pi_u)$  and  $N^+2(B^2\Sigma^+2)$  is monitored in terms of the emission intensities of nitrogen (0-0) bands of the second positive and the first negative systems respectively. The concentration of  $N_2(C^3\Pi_u)$  active species along with the degree of  $N_2$ -dissociation is appreciably enhanced by argon mixing signifying the role of argon metastables in the excitation and dissociation processes. The work has been published in European Physical Journal Applied Physics (EPJ AP), and the reference is given below:

F.U. Khan, N.U. Rehman, S. Naseer, M.A.Naveed, A.Qayyum, N.A.D. Khattak, and M. Zakauallah, 45, 11002 (2009)

### 3) Plasma Nitriding of Aluminum in a pulsed de glow discharge

Plasma Nitriding of Aluminum is studied for different current densities (2.0-5.0 mA/cm<sup>2</sup>) by keeping the corresponding discharge parameters such as treatment time, filling pressure, substrate temperature and gas composition. The treated samples were analyzed for changes induced in surface properties using x-ray diffraction (XRD), scanning electron microscopy (SEM), energy dispersive x-ray spectroscopy (EDS), and Vickers's micro-hardness testing. XRD showed the downshift in the original diffraction peak corresponding to (111) plane reflection along with the emergence of new diffraction peak corresponding to (220) plane reflection, confirming the N-diffusion into existing Al-lattice and formation of AlN compound layer. Surface hardness is significantly improved that might be attributed to the diffusion of nitrogen and compound layer formation.

The work is published in European Physical Journal, Applied Physics (EPJ AP) and the reference is given below:

S. Naseer, F.U.Khan, N.U.Rehman, A. Qayyum, F. Rahman, M. Zakauallah Eur. Phys. J. Appl. Phs.49,21001 (2010)

### 4) Effect of Excitation and vibrational temperature on the dissociation of nitrogen molecules in Ar-N<sub>2</sub> mixture RF discharge

Non-equilibrium argon-nitrogen mixture plasma generated at 13.56 MHz is characterization by optical emission spectroscopy and Langmuir probe techniques. The excitation and vibrational temperature are studies as a function of argon percentage in the mixture at 30 Pa filling pressure and input RF powers of 200 and 300 watt, to find out their role in dissociation

of N<sub>2</sub> molecules. In this work, the excitation temperature is determined from Ar-I emission line intensities by using the simple Boltzmann plot method and is found to be increased with argon mixing in nitrogen plasma. In similar fashion the vibrational temperature of second positive system has been determined and is found that it has also increasing trend with argon addition. The effect of excitation and vibrational temperature on the nitrogen molecular dissociation level is also monitored. It is observed that N/N<sub>2</sub> ratio increases with increase in excitation and vibrational temperature and falls slightly at the end. The work is published in Spectroscopy and the reference is given below:

F.U. Khan, N.U. Rehman, S. Naseer, M. Y. Naz, N. A. D. Khattak, M. Zakauallah, Spectroscopy Letters, 44, 194-202, (2011)

#### 5) Characterization of Pulsed degenerated nitrogen-methane plasma for active pieces generation

Optical Emission Spectroscopy (OES) is used to investigate the effects of methane gas mixing on the electron temperature, the number density and the production of active species in nitrogen plasma generated by 50 Hz pulsed-dc power source. The electron temperature is determined from N<sub>2</sub> and N<sub>2</sub><sup>+</sup> emission line intensities by using the modified Boltzmann's plot method and is found to be increased with methane mixing in nitrogen plasma. The concentration of active species N<sub>2</sub> (C<sup>3</sup> Π<sub>u</sub>) and N<sub>2</sub><sup>+</sup> (B<sup>2</sup> Σ<sup>+</sup><sub>u</sub>) is monitored in terms of the emission intensities of nitrogen (0-0) bands of the second positive and the first negative systems. The electron temperature, number density and concentration of active species are appreciably enhanced by increase of methane percentage in the mixture with pulsing-dc power. The work is submitted in international journal for publication:

### 1.1.2 Scientific Publications Produced through PSF Supported Projects

One of the main achievements of any research is the publication of its results in scientific journals. Based upon the results of completed projects, 60 research papers were published in different national / international journals. Details are at Annexure-IV.

### 1.1.3 Higher Degrees Earned through PSF Supported Projects

One of the major goals of the Foundation is the development of scientific human resource in the country. This results in strengthening of R&D infrastructure of various scientific organizations. The Foundation has been developing scientific manpower through its research projects and the Research Associates employed in the PSF supported research projects to



register for higher degrees. Following students working on PSF supported research project were awarded Ph.D/M.Phil/M.Sc. (Hons) degrees:

S. No.	Project No.	Name of the Researcher	Degree awarded
1.	PSF/Res/S-SAU/Agr (382)	1. Rao Muhammad Nauman 2. Shahida Parveen Soomro 3. Tanveer Azam Khaskheli 4. Babar Zaman Yousafzai 5. Arif Ali Rajput 6. Muhammad Arif Soomro	M.Sc (Hon) M.Sc (Hon) M.Sc (Hon) M.Sc (Hon) M.Sc (Hon) M.Sc (Hon)
2.	PSF/Res/P-AU/Bio (350)	1. Saira Jabeen	Ph. D
3.	PSF/Res/P-AU/Bio (286)	1. Abdul Razaq 2. Muhammad Tahir Saleem 3. Mohammad Umar 4. Nasreen Akhtar 5. Zahara Ijaz Naqvi 6. Liqueat Ali Guyra 7. Mohammad Nawab 8. Afshan Zafar	M. Phil M. Phil M. Phil M. Sc (Hon) M. Sc (Hon) M. Sc (Hon) M. Sc (Hon) M. Sc (Hon)
4.	PSF/Res/S-KU/Bio (341)	1. Saima Siddiq	M. Phil
5.	PSF/Res/S-KU/Bio (360)	1. Nuzhat Afsar	Ph. D
6.	PSF/Res/P-AU/Envr (85)	1. Sajid Yaqoob 2. Saima Naz 3. Asma Mehvish 4. Sumera Masood 5. Umara Batool 6. Faiza Ambreen 7. Sidra Abbas 8. Sami Ullah 9. Irum Fatima 10. Wardah Hasan 11. Huma Naz 12. Zia-ur-Rehman 13. Amina Akbar 14. Neelam Jahan	Ph.D. Ph.D. M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Sc (Hon) M.Sc (Hon) M.Sc (Hon) M.Sc (Hon) M.Sc M.Sc
7.	PSF/Res/S-KU/Envr (78)	1. M. Kamran Khan 2. Rehmat Bibi	Ph.D. M.S

8.	PSF/Res/P-UHS/Med (292)	1.Dr. Asad	M.Phil
9.	PSF/Res/P-PU/Phys (131)	1. Muhammad Rafiq 2. Yasir Jamil 3. Mazhar Ali Kalyar 4. Sarwar Hafiz 5. Talib Hussain 6. Bader-e-Alam 7. Muhammad Mahmood 8. Muhammad Umair 9. Zafar Imran 10. Aysha Qamar 11. Muhammad Waheed 12. Muhammad Salik 13. Abrar Hussain 14. Sumera Khizar 15. M. Rauf Shahzad 16. Abdul Wahab 17. S. Jarrar Haider 18. Ashiq Fareed	Ph.D Ph.D Ph.D Ph.D M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil M.Phil
10.	PSF/Res/C-QU/Phys (134)	1. Muhammad Mahmood 2. Muhammad Ashiq Fareed	M.Phil M.Phil
11.	PSF/Res/C-QU/Phys (138)	1. Athar Naveed 2. Najeeb-ur-Rehman 3. S. Salman hussain 4. Ghulam Murtaza 5. M. Yasin Naz 6. Tariq Iqbal 7. Khayam Ali Abbasi 8. M. Nawaz Khan 9. Kamran Hameed	Ph.D. Ph.D. Ph.D. Ph.D. M.Phil M.Phil M.Phil M.Phil M.Phil

#### 1.1.4 R&D-Industry Programme

PSF R&D-Industry Programme (previously called Industrial Linkages Programme) focused on collaborative research and industrial linkages to bring together researchers, end-users and the funding institutions at one platform.

**a) New Projects Approved:**

1. Under the 17th Protocol of S&T Cooperation between Pakistan and China (2012-16) and under MoU signed with National Natural Science Foundation of China for Scientific Cooperation between the two Foundations a new Project entitled, "Molecular Characterization, Mass Production and Formulation of Entomopathogenic Nematodes" was registered in PSF R&D-Industry Programme and under PSF prescribed procedure it was presented before PSF Technical Committee on Biological Science on 26.01.2012. The Executive Committee of Pakistan Science Foundation approved an amount of Rs. 8,671,224/- for the project. The contract agreement of the project has been signed and the partial amount of 1st installment has been released to initiate the project. With reference to this project, a group of Chinese scientists visited Pakistan Science Foundation and participated in "International Workshop on Biological Control of Root Knot Nematodes in Vegetables by EPNs from 20-25 May, 2012 jointly organized by National Nematological Research Center, University of Karachi and Guangdong Entomological Institute, Guangzhou, China.
2. Two other projects entitled, "Pilot Scale Studies and Commercialization of Indigenous Deflouridation Technology for Drinking Water" and "To Speed-Up the R&D Work and Production of Humic Acid Fertilizer from Lab. Scale to Pilot Plant/Commercial Scale" have been recommended by PSF Technical Committees and approved by Executive Committee of Pakistan Science Foundation for an amount of Rs 3,792,080/- and Rs. 3,545,178/- respectively.

**b) On-Going Projects**

1. First Semi Annual Technical Report of the project entitled, "Investigation and Optimization of Combustion and Emissions Characteristics of Fatty Acid Methyl Esters of Different Origin" was received and 2<sup>nd</sup> Installment was released. The Final Technical Report of the project will be submitted in September, 2012.
2. Final Technical Report of Project No. PSF/ILG/038/09, Hon was received. Physiochemical and bio-toxicity tests of the syringes were required to establish their medical quality in conformity with procedures out lined in European Pharmacopeia, ISO 786, ISO 10993-1:1997. These tests were not indigenously available in Pakistan so these tests were conducted by a Malaysian Firm.

### c) Under-Process Projects

1. A new research proposal entitled, "Characterization of Asphalt Binders and Crack Sealants at Low Temperatures" is received from the Department of Civil Engineering, University of Engineering & Technology, Taxila. The National Highway Authority (NHA) of Pakistan has showed interest in this research. A MoU has been signed between UET Taxila and Highway Research & Training Centre, NHA.
2. A new project proposal entitled, "Nano-Catalyst for Production of Bio-Fuel from Used Tea" has been received from the National Center for Physics, Quaid-i-Azam University, Islamabad. Coordination with Tapal & Lipton Tea is underway for their inclusion in the project. This project is in review process now.
3. A new research proposal entitled, "Studies on Development of Alkaline Phosphatase Coupled Biosensor (ALP Biosensor)" has been received from Department of Bioinformatics and Biotechnology, International Islamic University, Islamabad. This biosensor technology is expected to play a significant analytical role in medicine, agriculture, and food safety, environmental and industrial monitoring process. This project is in review process now.
4. A new research proposal entitled, "Establishment of Pilot Plant Facilities for Processing of Honey and its Quality Control" was received from Pakistan Council of Scientific & Industrial Research (PCSIR Laboratories Complex), Peshawar and has been reviewed by the subject expert. This project is ready to be presented in the upcoming Technical Committee.
5. A new research Proposal entitled, "Development of Value Added Fish Products" was received from Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences Lahore which is in the review process.
6. A new research proposal entitled, "Processing of Fruits and Vegetables and its Utilization in the Development of Value Added Products" was received from PCSIR Demonstration Cum Training Center, Skardu, Gilgit Baltistan which is under review.
7. A new research proposal entitled, "Development of Dates Dehydration Technology for Date Producing Areas of Sukkur and Khairpur" received from University of Agriculture, Faisalabad and reviewed by the subject expert. This project is ready to be presented in the upcoming Technical Committee.



### **Collaboration with Commercialization Cell of MoST**

R&D-Industry Programme of the Foundation is working in close collaboration with Commercialization Cell of Ministry of Science & Technology. Five concept proposals were received from Commercialization cell of MoST, identified through Focus Group Meetings with various Industrial Sectors and forwarded to PSF for consideration for funding. These proposals are as follows:

- i. Alternative Energy Source from Municipal Solid Waste.
- ii. Development of Technology for Pharmaceutical Raw Materials.
- iii. Production of Bio-Fertilizer for Agriculture Exploitation.
- iv. Study of Composite Materials based on Waste Wheat Straw.
- v. Development of Eco-Friendly Larvicidal Bio-product against *Aedes aegypti* (Dengue Vector).

The Competent Authority of PSF has approved in principal, all of these concept proposals for funding through PSF R&D-Industry Programme. Respective Principal Investigators will now be pursued to prepare and submit detailed project proposals on PSF-I format.

### **Exhibition Organized**

R&D-Industry Programme of Pakistan Science Foundation organized “Invention to Innovation Summit-2012” in collaboration with the Institute for Research Promotion (IRP) and University of the Punjab, Lahore on, June 18, 2012. Ms. Rahela Shahadat Baloch, Minister of State for Science & Technology appreciated the efforts of Pakistan Science Foundation. Dr. Manzoor H. Soomro, Chairman Pakistan Science Foundation (PSF) highlighted the collaborations PSF made with different Chamber of Commerce & Industries. The people having technologies engrossed with local R&D were invited to put up to show their ideas through posters presentations, documentaries and physical prototypes. The industries and academia personnels presented their innovative products and research. A total of 21 stalls



*Dr. Mujahid Kamran, VC, University of the Punjab, Ms. Rahela Shahadat Baloch, Minister of State, Dr. Manzoor H. Soomro, Chairman, PSF & Mr. Abid H. K. Shirwani, CEO, IRP at the inaugural ceremony.*

were in place which included Department of Microbiology & Molecular Genetics, Institute of Agriculture Sciences, Department of Zoology, College of Pharmacy, Institute of Chemical Engineering, Department of Electrical Engineering and College of Agriculture from University of the Punjab, National University of Science & Technology (NUST), ECO-Gen, Pakistan Council of Scientific & Industrial Research (PCSIR), Lahore College for Women University, Lahore, Indus Pak Corporation, Intellectual Property Organization (IPO), Centre for Excellence in Molecular Biology (CEMB), Centre for Applied Molecular Biology (CAMB), Punjab Agriculture Research Board (PARB), Prime Rice Engineering, GP Energy, Pakistan Council of Renewable Energy Technologies (PCRET), Shafi Reso Chem, and Hybrid Technologies. The industrial issues identified during this summit will be taken up jointly by Pakistan Science Foundation, Academia and the Industry.



*Dr. Mujahid Kamran, VC, University of the Punjab, Ms. Rahela Shahadat Baloch, Minister of State, Dr. Manzoor H. Soomro, Chairman, PSF are being briefed about various stalls of the summit*



### **Exhibitions Participated**

1. Dr. Mirza Habib Ali and Mr. Irfan Ahmad, of R&D-Industry Programme participated in “Pak-China Business Forum” held from 15-18 April, 2012 at Pak-China Friendship Center, Islamabad.
2. Mr. Irfan Ahmad, Scientific Officer, R&D-Industry Programme presented model of R&D Industry Programme in Exhibition entitled, “Marketable Innovative R&D Technologies/Products for Women Entrepreneurs” from 7-8 April, 2012 at Jinnah Convention Center, Islamabad jointly organized by PSF, PASTIC and Institute of Research Promotion (IRP) in collaboration with Women Chamber of Commerce & Industry, Islamabad.

### **Workshops/Seminars/Meetings and Trainings Attended**

1. Chairman PSF, Prof. Dr. Manzoor H. Soomro, Member Science PSF, Dr. Khalil Ahmed Ibupoto & Dr. Mirza Habib Ali, attended one day workshop on “Technologies for Rice Sector” organized jointly by Institute of Research Promotion (IRP) and PASTIC at Gujranwala Chamber of Commerce & Industry on 7<sup>th</sup> May, 2012.
2. Dr. Mirza Habib Ali, Senior Scientific Officer, PSF R&D-Industry Programme attended one day workshop on “University Industry Partnership Symposium & Exhibition on technologies for citrus and pulses industry” on 7<sup>th</sup> April, 2012 organized jointly by PASTIC and Institute of Research Promotion (IRP) at Sargodha Chamber of Commerce and Industry.
3. Dr. S. Lal Shah and Dr. Mirza Habib Ali, attended the workshop on “S&T Policies & Planning in SAARC Countries” organized jointly by Pakistan Council of Science & Technology (PCST) and National University of Science & Technology (NUST), Islamabad from 10-11 April, 2012.
4. Mr. Irfan Ahmad, Scientific Officer, R&D-Industry Programme conducted a seminar at Hazara University, Garden Campus, Mansehra. Detailed presentation was given to researchers for preparation of research proposals for funding by PSF under on R&D-Industry Programme of PSF.
5. Mr. Irfan Ahmad, Scientific Officer, R&D-Industry Programme attended a Business Plan Competition on the forum of Prime Minister's Entrepreneurial Challenge

“Discover; Prosperity through Entrepreneurship” at NUST Campus, H-12, Islamabad on 20<sup>th</sup> September, 2011.

6. Mr. Irfan Ahmad, Scientific Officer, R&D-Industry Programme attended training workshop on “Project Cycle Management” from 26-30 September, 2011 conducted by Pakistan Planning and Management Institute, Islamabad.
7. Dr. Mirza Habib Ali visited University of Management and Technology; Lahore to attend a presentation on “How to become an Inventor” delivered by a Canadian Entrepreneur.
8. Dr. Mirza Habib Ali attended one day workshop on “Young Researchers Skill Development” held on March 10, 2012 at University of Peshawar, Peshawar. This workshop was jointly organized as of National Academy of Young Scientists (NAYS) Pakistan Scientific and Technological Information Centre (PASTIC)/PSF.
9. Dr. Mirza Habib Ali attended three days workshop on “Green Economy” jointly organized by OIC Ministerial Standing Committee on Scientific and Technological Cooperation (COMSTECH), Islamabad from 16-18 May, 2012.
10. Dr. Mirza Habib Ali delivered a lecture on “Leadership Skill” on 27<sup>th</sup> June, 2012 during Annual Review Meeting of Pakistan Science Foundation, Islamabad.

### **1.1.5 Inventions and Innovations Programme**

The Foundation initiated a programme to translate the concepts into Inventions and Innovations and their movement toward commercialization for the benefit of the national economy. The scientists, researchers and students with innovative ideas were awarded with cash prize. Four team participated in Shell Eco Marathon in Malaysia during 6-9 July, 2011 funded under Inventions & Innovations programme of PSF. Team Emenents-KAAR from NUST was an urban concept car and has secured 6<sup>th</sup> position in petrol category. This car has secured a mileage of 35km/liter. Team THUNDER from HITECH University, Taxila and Team WINMARK from NED University, Karachi also passed qualifying round and participated in the race. Team “JUNOON” participated in Student Formula Society of Automotive Engineers (SAE) Japan, Inc. in ECOPA (Ogasayama Sports Park; Shizuoka-ken), Japan from 5-9 September, 2011 funded under Inventions & Innovations programme of PSF. It was a low cost high performance machine using DAIHATSU 550cc engine.



During fiscal year 2011-12, 9 proposals from University of Engineering & Technology, Kala Shah Kaku Campus, Lahore., College of Electrical & Mechanical Engineering (EME), NUST, Rawalpindi, HITECH University, Taxila Cantt, Ghulam Ishaq Khan Institute of Engineering and Technology, Topi, Pakistan Navy Engineering College (PNEC), Karachi, and Mehran University of Engineering and Technology, Jamshoro submitted their proposals under “Inventions & Innovations”. Due to financial constraints only 03 proposals were finally approved and funded. The list of funded teams is as under:-

Sr.	Title of the Project	Team Name	Institution/University	Amount Released
1.	All Pakistan Airex’ 11 Innovation Challenge, AIAA GIKI-CHAPTER, Ghulam Ishaq Khan Institute of Engineering and Technology, Topi, Swabi.	AAIA, GIKI-Chapter	American Institute of Aeronautics and Astronautics, Ghulam Ishaq Khan Institute of Engineering and Technology, Topi, Swabi.	Rs.75,000/-
2.	Designing of Radio Controlled (RC) Air Plane for Participation in International Competition Entitled, “Design/Build/Fly Competition 2011/2012” in Texas, United States.	AVOCAR-GIKI	Faculty of Mechanical Engineering, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Khyber Pakhtunkhwa.	Rs.100,000/-
3.	Designing and Fabrication of Four Wheel Racing Car for Participation in “Formula Student Competiton”, 11-15 July, 2012 at Silver Stone Circuit, UK.	FORMULA NUST	Pakistan Navy Engineering College (PNEC), National University of Science & Technology (NUST), Karachi.	Rs.150,000/-
<b>Total</b>				<b>Rs.325,000/-</b>

## **1.2 Pak-US Natural Sciences Linkage Programme (NSLP) Endowment Fund**

Natural Sciences Linkage Programme (NSLP) Endowment Fund is an important component of Pakistan Science Foundation (PSF) which is aimed at enhancement of agricultural production through effective research. It is being managed by PSF through Board of Governors (BoG) and Fund Management Committee (FMC). The Chairman, PSF is the Chief Executive of the Programme.

Project proposals related to the main problems of agricultural sector are invited from Universities and R&D organizations across the country. Research work is mostly emphasized on the food production & food security issues in Pakistani. Currently 45 projects are funded in different Universities and R&D organizations around the country under this programme.

Projects are received from researchers throughout the year; they undergo tough scrutiny before presenting to the Technical Committee. The target areas of these projects include germplasm screening of different crops, insect and pest management for the disease free crop production and Post harvest technology. All these research issues are vital component of today's agriculture and are imperative in bringing the value added products in the market. Apart from these, many projects from specialized fields of animal sciences are also funded. These include genetic screening of different animal breeds and feed technology. In future, the fund aims to focus on research projects related to applied fields of agriculture to pass on domino effect of research to society.

### **Objectives**

- To enhance cooperation among scientists from Pakistan and the United States of America, in areas of significant mutual interest and benefit relating to natural sciences as applicable to agriculture.
- To increase the contact and collaboration among scientists and institutions of agricultural and biological research, development and higher learning between the two nations.
- To provide researchers and institutions with opportunities to exchange information, ideas, skills and techniques.
- To enhance opportunities to collaborate in solving problems of common interest relating to natural sciences and to utilize special research and development facilities or opportunities available.

- To identify the researchable areas in natural sciences especially agricultural sciences with aim to increase farmers profitability

## **Research Priority Areas**

Priority areas for collaboration may include, but are not limited to; Collection, Evaluation and Exchange of Germplasm, Plant Genomics, Plant Biotechnology, Stress Biology, Bio-Informatics, Application of Information Technology in Agriculture, Identification and Control of Animal/Plant Diseases, Dry land/Sustainable Agricultural Production System; Integrated Pest and Disease Management, Biotechnology, Microbiology, Agribusiness Development, Biophysics, Chemistry, Environmental and Climate Change particularly with reference to Agriculture.

### **1.2.1 Activities and Programmes**

#### **1.2.1.1 Research Funding**

Research funding is the principal activity of Natural Sciences Linkage Programme (NSLP) with the basic aim of promoting collaborative research between the scientists of US and Pakistan. Projects of applied nature are selected for the funding. Research proposals received undergo the strict scrutiny before the funding. The criteria include the competence of the basic equipment and laboratory facilities, scientific merit of the proposed research proposals and likelihood of completion of proposed research work within the stipulated time. The proposals are reviewed by two Pakistani experts along with US experts. The proposals cleared by experts are placed in the Technical Committee for technical evaluation and recommendation. Technical Committee on NSLP comprises of the renowned scientists from all fields of Agriculture. The proposals recommended by the Technical Committee are then submitted to NSLP Fund Management Committee (FMC) for administrative and budgetary approval, before the release of funds.

#### **a) Under-Process Projects**

67 proposals remained under consideration of the NSLP. Out of these 48 projects were presented in three different Technical Committee meetings held during the report period. Technical Committee recommended 20 new projects at total cost of Rs.45.00 million. List of projects approved during the report period is given in **Annexure-XI**.



**b) On-Going Projects**

44 ongoing research projects and the progress reports of 42 projects (semiannual, 1<sup>st</sup> and 2<sup>nd</sup> annual & final reports) were received. The NSLP staff scrutinized the semiannual reports, whereas, annual and final reports after initial scrutiny were sent for evaluation to the subject experts to assess the interim progress of the projects. It is worth mentioning that due installment of the on-going projects are released only if the interim progress of the projects at the end of each year is satisfactory. An amount of Rs. 31.00 million was released on account of due installments of ongoing projects. A list of semi annual and annual reports is given in **Annexure-XII**.

**c) Completed Projects**

During the year four projects were completed. The subject experts evaluated the final technical reports of the projects which were subsequently placed before the Technical Committee for consideration. The accounts of these projects have been settled. Details of the projects along with the scientific out put are given below.

<b>Project No.</b>	<b>PSF/NSLP/P-BARI (04)</b>
Project Title:	Production of Germplasm and Breeding Material of Wheat for Drought and Heat Tolerance
Duration:	3-Years
Date of initiation:	01.06.2008
Date of completion:	31.05.2011
Total Expenditure:	Rs. 747,970/-
Principal Investigator:	Dr. Muhammad Tariq
Name of Institution:	Barani Agricultural Research Institute, Chakwal

**SUMMARY:**

A total of 100 genotypes were collected from Wheat Coordinator, National Agricultural Research Centre, Islamabad, Barani Agricultural Research Institute, Chakwal, Wheat Research Institute, Faisalabad, Regional Agricultural Research Institute, Bahawalpur and BARS, Fateh Jang. Seed samples of all the 100 cultivars /accessions were first sterilized. Thirty seeds of each cultivar were sown in petri dishes for each PEG level. Germination data were recorded daily until the completion of 12 days. All the 100 cultivators were then screened for diseases such as stem rust, yellow rust, powdery mildew and kernel burnt under

natural field conditions. Genotypes were then screened for drought tolerance on yield reduction basis when grown under rain shelter and irrigated field conditions.

Drought tolerant lines selected on the basis of coleoptiles length, second leaf width, biomass and yield were crossed with heat tolerant lines which were already evaluated in green house study at Barani Agricultural Research Institute (BARI). The forty five F1 crossed material produced was raised in the final year. The biometry and genetic analysis techniques were used to find out the mechanism of drought and heat tolerance. In addition to agronomic characters and yield, stomatal conductance, photosynthesis, chlorophyll content and canopy temperature was recorded to find out the mechanism of drought tolerance.

<b>Project No.</b>	<b>PSF/NSLP/S-PARC (01)</b>
Project Title:	Nematodes Associated with Almond ( <i>Prunus amygdalus</i> Batsch) and Pomegranate ( <i>Punica granatum</i> L.) and their Management using Oil-Cakes in Khuzdar and Kalat Districts
Duration:	3-Years
Date of initiation:	01-05-2008
Date of completion:	30-04-2011
Total Expenditure:	Rs.12,09,857/-
Principal Investigator:	Dr. Aly Khan, Director
Name of Institution:	CDRI, University of Karachi, Karachi

#### SUMMARY:

A total of 256 pomegranates and 220 Almond rhizosphere soil samples were collected from twelve different localities of Khuzdar and Kalat districts, Balochistan. Pomegranate soil samples were collected from Ornach, Wadh, Piromal, Khuzdar, Kork and Musiani from Khuzdar district and Alat, Surab, Ali Dasht, Kalat, Kohing and Mangochar from Kalat District. A total of 16 nematodes were identified from pomegranate rhizosphere soil viz. *Aglenchus* sp., *Basiria graminophila*, *Ditylenchus bilqeesae*, *helicotylenchus digonicus*, *H. Indicus*, *Longodorus* sp., *Meloidogyne incognita*, *M. javanica*, *Merlinus brevidens*, *M. khuzdarensis*, *Pratylenchus penetrans*, *Psilenchus hilarulus*, *psilenchus khuzdarensis*, *Tylenchorhynchus brassicase*, *Tylenchus spp* and *Xiphinema basiri*. The most dominant species was *Meloidogyne incognita*. Species diversity was highest in Wadh while lowest in Ali Dasht. Equitability component of diversity was highest in Kork and lowest in Ali Dast,

while species richness component was highest in Piromal. The soils associated with Pomegranate orchards were coarse structured, alkaline with low water holding capacity. In most cases there were similarities between the localities.

The localities from where Almond soil samples were collected included Ornach, Wadh, Khuzdar, Kaley, Muhammad Ibrahim, Kork, Zehri farm from Khuzdar district and Surab, Rodinjo, Mugalzai, Kalat, Zehri Khand and Mangochar from Kalat district.

A total of 9 nematodes were identified from almond rhizosphere soil viz. *Aphelenchus avenae*, *Helicotylenchus digonicus*, *H. handooi*, *Longidorus pisi*, *Macroposthonia curvata*, *Meloidogyne incognita*, *M.javanica*, *Psilenchus hilarulus* and *Tylenchus sp.* *Helicotylenchus handooi* is the new species. The most dominant species were *M. javanica* and *Helicotylenchus digonicus*. Species diversity was highest in Ornach and lowest in four localities where only one species was recorded. The soils associated with the almond orchards were mostly coarse textured and alkaline with lower water holding capacity.

The study of structure and composition of nematode communities associated with pomegranate and almond roots would lead to better management of the parasitic nematode and consequently better crop yields. Histopathology of pomegranate roots naturally infected with *M. incognita* and *M. javanica* is being reported, similarly histopathological study of almond roots infected by root knot nematode (*M. incognita*) is being given in detail. Since there is lack of information on root knot damage to pomegranate and almond in Balochistan, the present study was conducted to fill gap in our existing knowledge.

The efficacy of mustard and castor oil cake at 14.6kg/tree were evaluated against parasitic nematodes associated with pomegranate and almond orchards in Khuzdar and Kalat Districts, Balochistan. The population densities of nematodes *Helicotylenchus indicus* were significantly affected in the Kalat town site. However, the yield was not significantly increased by treatments. In almond orchard *M. javanica*, *Macroposthonia curvata* and *Psilenchus hilarulus* were found significantly different in size and were markedly decreased by castor oil and mustard cakes and carofuran at Kalat site. However, the yield was not significantly increased by the treatments. In the final year trails the population of *Meloidogyne javanica* was relatively less effected by oil cakes as compared to *Helicotylenchus indicus* and *Xiphinema basiri* associated with Pomegranate at Wadh, district Khuzdar. The yield however, was significantly elevated as compared to control. The



population of *Meloidogyne javanica*, *Helicotylenchus handooi* and *Longidorus pisis* associated with Almond at Ornach, District Khuzdar was most significantly reduced by carbofuran followed by mustard and castor oil cakes. However, the yield of Almond was not significantly increased by oil cakes. The population density of *Meloidogyne incognita*, *Merlinus brevidens* and *Tylenchorhynchus brassicae* associated with Pomegranate at Surab, district Kalat showed certain degree of tolerance to the synthetic as well as phytonematicides. Mustard was less effective than castor cake. The yield of pomegranate at Surab, District Kalat however, was significantly elevated by oil cake. The population density of nematodes associated with Almond at Zehri Khand, District Kalat was more effectively controlled by carbofuran as compared to oil cakes. The yield of Almond at Zehri Khand, district Kalat was not significantly elevated.

<b>Project No.</b>	<b>PSF/NSLP/P-UVAS (47)</b>
Project Title:	Evaluating Milk Performance of Local and Exotic Cattle Breeds through SNP Detection
Duration:	2-Years
Date of initiation:	04.07.2009
Date of completion:	03.07.2011
Total Expenditure:	Rs.30,90,378/-
Principal Investigator:	Dr. Masroor Ellahi Babar
Name of Institution:	University of Veterinary and Animal Sciences, Lahore

#### **SUMMARY:**

Pakistan is the fourth largest milk producing country in the world has more than 29.6 million cattle heads. Four cattle breeds (Hostlein Friesian, Shaiwal, Dhanni and Red Sindhi) were selected for studying the milk production effecting genes. The detailed data of cattle breeds was recorded. Blood samples were collected and DNA was extracted. DNA was preserved for research work and to establish a gene bank for future use. Many factors contribute the yield and quantity of milk including genetic factors. More than twenty genes have been correlated with milk genes and quality. Most of these genes play different metabolic roles and effect milk yield and quality either positively or negatively e.g diacylglycerol o-acyltransferase (DGATI), Prolactin and POU1FI. DGATI is important for fat metabolism which shows negative correlation with milk yield and quality. For studying the milk performance world's

best breed Holstein Friesian, the best Pakistani milk producing breed Sahiwal and poor milk producing Pakistani breed Dhani were selected breeds. DNA was extracted by inorganic method. Primers for 17 exons of DGATI gene were designed and optimized. DNA samples of selected breeds were amplified and sequenced. Single nucleotide polymorphisms in exon VIII of DGATI gene at position 232 (K232A mutation) effects the milk production in cattle breeds. After analysis of sequencing results single nucleotide polymorphism were observed in Holstein Friesian but no polymorphism at position 232 was detected in Sahiwal and Dhani. Restriction enzyme and designed and applied on PCR product of the exon VIII which confirmed that there was no ploymorphism in exon VIII of the local Pakistani breeds (Sahiwal and Dhani) but present in the exotic cattle ( Holstein Friesian) Bovine POU1FI gene (also named PIT-1 or GHF-1) localized to the bovine chromosome 1 (1q21-q22).This gene was studied in three cattle breeds i.e Sahiwal, Holstein Friesian and Dhanni. Primers were designed, optimized and PCR product was sequenced. After sequence analysis of 27 different polymorphic sites (SNP'S) were found in three breeds. Eight out these SNP's were in exonic region while others were in intronic region. One SNP was found only in high milk producing cattle breeds Holstien Friesien and Sahiwal at position 14385, changing nucleotide from G to A, resulting in change of Codon 3 and amino acid. Three Non-Synonymous mutations (G>T, G>A and G>A) at positions (14391,14407 and 14422) resulting in change of codon GTT to TTT, AGA TO AAA and AGA to AAA amino acid sequence V>R>K and R>K respectively, were found producing Dhani while no SNP's at these positions were detected in Sahiwal and Holstien Friesien. Another very important gene, Prolactin (PRL) is one of the multipurpose hormones of the pituitary gland in terms of biological actions. Bovine PRL consists of 199 amino acids. Prolactin acts on mammary alveoli to promote the synthesis and secretion of milk protein. This hormone is primarily responsible for the synthesis of milk proteins, lactose and lipids, all major components of milk. Six four cattle breeds (Holstien Friesien, Sahiwal, Dhani and Red Sindhi) were used for the study of prolactin gene. Primers were designed optimized. PCR amplicons were sequenced and results were aligned and analyzed. In Holstein Friesian two SNP's were found in exon 4 at position 8370, 8447 results in change of Codon TCT>TCC,AGA>AAA respectively. In Sahiwal two SNP's were found 4 at position 7529,7550 resulting in codon TCT>TGT, TGC>TAC and two SNPs in exon 5 at position 8283,8447 which results in change of codon GTG>GTA, CTG>CAA respectively. In Dhanni



two SNPs in exon 5 at position 8283 & 8447 which resulted in change of Codon GTG>GTA and CTG>CAA respectively. In red Sindhi three SNPs in exon 5 at position 8283 & 8447 were found which caused change in codon sequence from GTT>GTA, TCT>TCC and AGA>AAA. SNPs found in DGATI, prolactin and POUIFI genes can be used as markers to differentiate between low and high milk yield producing cattle. There is so significant relation in milk yield and weight in cattle population. In order to get maximum milk production, breeding plan should be made after genomic analysis of milk producing genes. Application of markers assisted selection at the early age in cattle can be use full for the selection of high milk producing animals which will result in the enhancement of milk production in Pakistan.

<b>Project No.</b>	<b>PSF/NSLP/P-UAAR (35)</b>
Project Title:	Identification of Chemically defined Extenders for Cryopreservation of Buffalo bull Spermatozoa
Duration:	3-Years
Date of initiation:	01-06-2008
Date of completion:	31-05-2011
Total Expenditure:	Rs.14,37,796/-
Principal Investigator:	Dr. Shamim Akhtar
Name of Institution:	PMAS Arid Agriculture University, Rawalpindi

#### **SUMMARY:**

Commonly, buffalo semen is preserved in extenders containing egg yolk as cryoprotectants. The hygienic risks, lack of quality standards, the presence of steroid hormones and inconsistency of its composition make the fresh egg yolk less suitable for cryopreservation of semen. It was hypothesized that a well defined and pathogen-free substitute for egg yolk (preferably of non-animal origin) would be more suitable for buffalo semen. For this purpose, a series of experiments were planned to evaluate chemically defined extenders for cryopreservation and *in vivo* fertilizing ability of buffalo bull semen. In experiment 1: The low density lipo-protein (LDL) at the rate of 2.5%, 5.0%, 10% and 15% were evaluated and compared with control (20% egg yolk) in *tris*-citric acid extenders. Sperm motility, plasma membrane integrity, livability and viability were better in extender having 10% LDL than 2.5%, 5.0%, and 15 % LDL and control. Experiment 2: Soya lecithin at the rate of 2.5%, 5.0%, 10% and 15% were compared with control (20% egg yolk) in *tris*-citric acid extenders.

Sperm motility, plasma membrane integrity, livability and viability were better in extender having soya lecithin in *Tris*-citric extender at the rate of 10% than 0, 2.5%, 5.0%, and 15%. Experiment 3: Powder egg yolk at the rate of 20 % in *Tris*-citric extender was compared with fresh egg yolk (control). Sperm motility, plasma membrane integrity, livability and viability remained similar ( $P > 0.05$ ) in extenders having fresh or powder egg yolk in extender. Experiment 4a: Prepared extender Bioxcell<sup>®</sup> was compared with tris-citric egg yolk extender for cryopreservation of buffalo semen. Sperm motility, viability, plasma membrane integrity and normal apical ridge remained similar ( $P > 0.05$ ) in Bioxcell<sup>®</sup> and tris-citric egg yolk extender. Experiment 4b: Based on the results of experiments 1-4, the best evolved extender containing LDLs (10%) and soya-lecithin (10%) were used to determine whether LDLs and soya-lecithin in extender improve the fertility of buffalo bull semen. In experiment 5 a): semen from two Nili-Ravi buffalo bulls was diluted at 37°C with *tris*-citric acid extender ( $50 \times 10^6$  motile spermatozoa ml<sup>-1</sup>) containing LDLs and soya-lecithin 10% while extender containing 20% egg yolk was kept as control. In experiment 5 b): semen from two Nili-Ravi buffalo bulls was diluted at 37°C with Bioxcell<sup>®</sup> and *tris*-citric acid extender containing 20% egg yolk (control) @  $50 \times 10^6$  motile spermatozoa ml<sup>-1</sup>.

Diluted semen was cryopreserved as described earlier. A total of 1000 inseminations (200 inseminations/ extender) with frozen buffalo semen were performed in Tehsil Kahrore Pacca, District Lodhran. The inseminations were performed over three months during the peak breeding season (October to December). All the experimental inseminations were performed approximately 24 hours after onset of heat. The artificially bred animals were examined for pregnancy through rectal palpation at least 90 days post-insemination. The fertility rate of inseminations performed were higher ( $P < 0.05$ ) with extender containing 10% LDLs and soya-lecithin compared to control. However, the fertility rate remained similar ( $P \geq 0.05$ ) with commercially available extender Bioxcell<sup>®</sup> and *tris*-citric acid extender (control). Based on 90-days post insemination pregnancy tests, it is concluded that low density lipoproteins (10%) and soya-lecithin (10%) in extender improved the fertility of buffalo bull spermatozoa. In experiment 6, semen from one Nili-Ravi buffalo bull was cryopreserved using LDLs (10%), soya-lecithin (10%) and egg yolk (20%) as described for experiment 5. Synchronization of oestrus was accomplished by prostaglandin containing 25 mg administration 11 day apart via intramuscular in 100 buffaloes. Each buffalo group (n=33) was inseminated with



experimental extender after 72 hours of second dose administration. The pregnancy rate was determined as described in experiment 5. The higher fertility rate of inseminations performed after artificial induction of heat was recorded using 10 % soya-lecithin (57.57%) followed by 10% LDLs (48.48%) compared to control (36.36%). In conclusion soya lecithin (10%) improves the fertility rate in buffalo and has advantage in terms of lowest sanitary risks, chemically defined and ready to use.

#### **1.2.1.2 Scientific Publications Produced through PSF Funded Projects**

One of the main achievements and usefulness of any research is the publication of its results in scientific journals. Based upon the results of completed research projects six research paper were published in peer review journals the details of which are given at **Annexure-XIII**.

#### **1.2.2 Project Formulation Workshops**

Three Project Formulation Workshops were organized to enhance the capacity building of the researchers in formulation of project proposals and winning grants in 2011-12. The workshops were organized at Sindh Agriculture University Tandojam on Oct, 19-20, 2011, KP Agricultural University, Peshawar on February, 8-9, 2012 and Bahauddin Zakariya



*Chairman PSF and Vice Chancellor BZU during the inaugural ceremony of workshop at BZU on 20-06-2012*

University, Multan on June, 20-21, 2012 respectively. A total of 143 researchers from 34 different R&D organizations benefitted from these workshops. Scientists were trained on different aspects of writing a good quality research proposal by renowned agricultural researchers. Workshops proved to be beneficial in elevating the scientific proposal writing skills of the researchers before submission to PSF.

### **1.2.3 Third Meeting of NSLP Board of Governors (BoG)**

The third meeting of NSLP Board of Governors was held in PSF on May 10, 2012. The meeting was Chaired by the Federal Minister for Science and Technology, Mir Changez Khan Jamali and Co-Chaired by Mr. Amjad Hussain, Acting Secretary, Ministry of Science and Technology. Chairman PSF/Secretary BoG, Prof. Dr Manzoor H. Soomro briefed about significant achievements and working of NSLP Endowment fund. The Board confirmed minutes of the previous BoG meeting held on 28-02-2009 and expressed its satisfaction on the progress of NSLP. The BoG also approved the annual expenditures and audit report of the fund. Furthermore, PSF rules and regulations were approved to be adopted in NSLP. The meeting ended with the vote of thanks to and from the chair.



*Federal Minister for Science and Technology chairing the 3<sup>rd</sup> BoG meeting of NSLP in PSF on 10-05-2012*

### **1.2.4 NSLP Fund Management Committee Meetings**

Two Fund Management Committee (FMC) meetings were held on 08-12-2011 and 08-05-2012 respectively to review the financial matters of NSLP. The meetings were chaired by the Chairman PSF, and attended by members of the Fund Management Committee including Member Science, Member Finance and Chief Scientific Officer. FMC approved the budgets of 16 new projects recommended by the technical committee.



### 1.2.5 NSLP Technical Committee Meetings

During the year 2011-2012 five meetings of the Technical Committee (TC) were held on 14-09-2011, 13-12-2011, 27-01-2012, 09-04-2012 and 25-05-2012 respectively to approve the projects for funding. The meetings were chaired by the Chairman, PSF and attended by the renowned agricultural scientists. The Technical Committees recommended 20 new projects for funding.



*Chairman PSF, chairing the NSLP Technical Committee meeting*

## 1.3 SCIENCE PROMOTION

### 1.3.1 Institutional Support Programme

One of the functions of the Foundation is to support the emerging R&D Organizations/ Universities to strengthen their laboratories. During the report period, 18 requests were received, 07 were approved and an amount of Rs.2.15 million was released to 04 R&D Organizations for enhancement of their research capabilities.

Name of Institution	Title of Activity/Request	Amount Released (Rs.)
Lasbela University of Agriculture, Water and Marine Sciences Uthal, Baluchistan	Purchase of Equipment (Ultrasound Machine) for Faculty of Veterinary and Animal Sciences, Lasbela University of Agriculture, Water and Marine Science Uthal, Baluchistan	1000,000/-
Hazara University Mansehra	Purchase of Equipment (Sterio Microscope and Floral Cabinets) for the Herbarium of Hazara University, Mansehra.	780,740/-
Mehran University of Engineering and Technology Jamshoro	Purchase of Chemical ( <i>Lithium-sodium-Tungstate and Lithium-Metaborate</i> ) for Department of Mining Engineering, Mehran University of Engineering and Technology, Jamshoro	153,000/-
University of Sindh Jamshoro	Purchase of Equipment (UPS-10 KVA for Institute of Advanced Research Studies in Chemical Sciences, University of Sindh, Jamshoro	225,000/-
<b>Total:</b>		<b>2,158,740/-</b>

### 1.3.2 Financial Assistance for Holding Science Conferences, Seminars, Symposia and Workshops

Another function of the Foundation is to provide funding for holding conferences/seminar/symposia/ workshops etc. In year 2011-12, an amount of Rs.4.15 million was released to various institutions for organizing 30 conferences seminars and workshops on important scientific topics listed below:

Sr. No	Title of Conference	Name of Organizers	Amount Released (Rs.)
1.	“3rd Teachers Training Workshop: Lab Methods in Genetics” on March 21-25, 2011 at Department of Animal Sciences, QAU, Islamabad	Dr. Sajid Malik Assistant Professor Department of Animal Sciences Quaid-i-Azam University Islamabad	40,000/-
2.	International Seminar on “Crop Management: Issues & Options” on June 01-02, 2011 at University of Agriculture, Faisalabad.	Prof. Dr. Zahid Ata Cheema Chairman Department of Agronomy University of Agriculture Faisalabad	250,000/-
3.	7th International Conference on Emerging Technologies (ICET)-2011” on September 5-6, 2011 at NUST.	Dr. Sharifullah Khan Associate Professor School of Electrical Engineering and Computer Sciences (SEECs), National University of Science and Technology (NUST) Islamabad	200,000/-
4.	Two days International workshop on “Seed Physiology, Production and Management” on September 27-28, 2011 at University of Agriculture, Faisalabad.	Prof. Dr. M. Rashid Ahmad Chairman Department of Crop Physiology University of Agriculture Faisalabad	100,000/-
5.	“National Symposium on Kinetics and Catalysis (KC-2011)” on September, 26-28, 2011 at Baragali Summer Campus.	Prof. Dr. Muhammad Ilyas National Centre of Excellence in Physical Chemistry University of Peshawar Peshawar	100,000/-
6.	Workshop on “Fermentation Strategies for the Production of Commercial Enzymes” on October 4-7, 2011 at KIBGE.	Prof. Dr. Abid Azhar Co-Director General KIBGE University of Karachi Karachi	100,000/-



7.	6- days International workshop on Materials Modeling and Simulations IWMMS 2011” on September 5-10, 2011 at University of Malakand Chakdara.	Prof. Dr. Iftikhar Ahmad Chairman Department of Physics University of Malakand Chakdara	100,000/-
8.	International conference on “Management, Business Ethics and Economics-ICMBEE” on December 28-29, 2011 at Pearl Continental Hotel, Lahore.	Dr. Abdus Sattar Assistant Professor Department of Management Sciences COMSATS Institute of Information Technology Lahore.	100,000/-
9.	“3-Days Young Researchers Conference on Pure and Applied Mathematics (YRC), 2011” on 30 September to 02 October, 2011 at GIKI.	Mr. Hanan Hussain Khan President GIK Mathematics Society GIK Institute of Engineering Sciences and Technology Topi	40,000/-
10.	One Seminar on the Ups and Downs of Pakistan ‘s Large Marine Animals with Respects o Phytoplankton on 24th October, 2011 at GC University, Lahore	Dr. Ghuzala Yasmeen Butt Associate Professor Department of Botany GC University Lahore	50,000/-
11.	“Association for Excellence in Medical Education Conference 2012 (AEME-2012)” on March 03-05, 2012 at Pak-China Friendship Centre, Islamabad	Prof. Dr. Umar Ali Khan Pro Vice Chancellor Isra University Islamabad Campus	500,000/-
12.	2nd International Conference on “Semiconductor Materials and Nano-Devices (ICSMAND-2011)” on 10-12 October, 2011 at the Islamia University of Bahawalpur, Bahawalpur	Prof. Dr. M. Asghar Hashmi Chairman Department of Physics Islamic University of Bahawalpur Bahawalpur	100,000/-
13.	International/ National Seminars on “Soil Quality and Food Security” and “Environmental Issue and Remedies” on 22-23 November, 2011 at University of Agriculture, Faisalabad.	Prof. Dr. Muhammad Arshad Principal Organizer Institute of Soil and Environmental Sciences University of Agriculture Faisalabad	100,000/-
14.	Seminar on the “Role of Agronomy in National Food Security” on January 07, 2012 at Ayub Agriculture Research Institute, Faisalabad.	Dr. Hafiz Muhammad Akram Plant Physiologist Ayub Agricultural Research Institute (AARI) ,Faisalabad	75,000/-

15.	“1st College Teacher Workshop on Chemistry Curriculum” on 23-25 January, 2012 at University of Karachi, Karachi	Prof. Dr. S. Azhar Ali Chief Organizer Department of Chemistry University of Karachi Karachi	50,000/-
16.	“One day Workshop on Preparation of Agro-Waste Compost with Bio-Geysers as a By-Product” on February 15, 2012 at Mingora (SWAT)	Mr. Haider Khan Principal Scientist Nuclear Institute for Food & Agriculture (NIFA) Peshawar	50,000/-
17.	2 days International Workshop on “Technological Advances and Challenges in Water Reclamation and Reuse” on 06-07 December, 2011 at NUST Campus, Islamabad	Dr. Sher Jamal Khan Assistant Professor Institute of Environmental Sciences and Engineering School of Civil and Environmental Engineering National University of Science and Technology, Islamabad	75,000/-
18.	“2nd International Conference on Energy, Environment and Sustainable Development-2012” on February 27-29, 2012 at Mehran University of Engineering & Technology, Jamshoro	Prof. Dr. M. Aslam Uqaili Pro Vice Chancellor Mehran University of Engineering & Technology Jamshoro	500,000/-
19.	“2nd All Pakistan Thermo Con-12” on 24 March, 2012 at GIKI Topi, Swabi.	Dr. Tariq S. Khan Assistant Professor Faculty of Mechanical Engineering GIK Institute of Engineering Sciences and Technology Topi	50,000/-
20.	“International Multi Topic Conference (IMTIC-12)” on 28-30 March, 2012 at Mehran University of Engineering & Technology, Jamshoro	Prof. Dr. Bhawani S. Chowdhry Dean, Faculty of Electrical, Electronic and Computer Engineering Mehran University of Engineering & Technology Jamshoro	400,000/-
21.	“Tech-Combat, Technology Battle 2012” on 7th April, 2012 at Mehran University of Engineering & Technology, Jamshoro	Prof. Dr. Aftab A. Memon Chairman Department of Telecommunication Engineering Mehran University of Engineering & Technology Jamshoro	150,000/-
22.	“International Mechanical Engineering Convention	Prof. Dr. Javed Ahmad Chattha Advisor, ASME GIKI Chapter	100,000/-



	(IMEC) 2012” on April 20-22, 2012 at GIKI	GIK Institute of Engineering Science & Technology , Topi	
23.	Seminar (s) on Food Engineering, and Agriculture” under Spring Festival from 13-17 March, 2012 at University of Agriculture, Faisalabad	Prof. Dr. Muhammad Ashfaq Dean, Faculty of Agriculture University of Agriculture Faisalabad	200,000/-
24.	“Earth Sciences Pakistan 2012” from June 23-24, 2012 at University of Peshawar, Peshawar.	Dr. Rubina Bilquees Assistant Professor University of Peshawar Peshawar	75,000/-
25.	Organizing the seminar on “Pharmaceutical Industry in 21st Century: Challenges and Threats” on April 23,2012 at PCSIR, LLC, Lahore	Dr. Salma Rahman Head, Applied Chemistry Research Centre PCSIR, Labs Complex Lahore	50,000/-
26.	Symposium on Computing and Information Technologies (SCIT 2012) on April 27-28, 2012 at BIZTEK Main Campus, Karachi	Prof. Dr. Safeullah Soomro Associate Professor Institute of Business & Technology, BIZTEK Karachi	100,000/-
27.	National Conference on “Wheat Rust Management” to be held on 02-04 May, 2012 at NIA Tando Jam.	Shamadad Khan Khanzada Head, Plant Breeding & Genetics Division NIA, Tandojam	100,000/-
28.	Training Workshop on “Modern Research Techniques in Ecology” to be held on 16-20 April, 2012 at Margala Hotel/PMNH/QAU.	Dr. Muhammad Rafique Director , Zoological Sciences Division PMNH, Islamabad	300,000/-
29.	Two Days Workshop on “Potential Biotech Industry for Entrepreneurs in Pakistan” on 16-20 April, 2012 at National Institute of Biotechnology and Genetic Engineering (NIBGE), Faisalabad.	Dr. Farooq Latif Principal Scientist National Institute for Biotechnology and Genetic Engineering (NIBGE) Faisalabad	50,000/-
30.	Two days Conference on “Recent Trends in Agronomic Strategies for Further Green Revolution” on 02-03 May, 2012 at KPK Agricultural University, Peshawar.	Dr. Hafiz Muhammad Akram President, Pakistan Society of Agronomy Ayub Agricultural Research Institute (AARI) Faisalabad	50,000/-
<b>Total:</b>			<b>41,55,000/-</b>

### 1.3.3 Financial Support to Scientific Societies for Holding Scientific Conferences and Publication of Scientific Journals

The Foundation provides funds for Scientific Societies for holding their regular conference, meetings and publication of scientific journals in various disciplines. During the period, an amount of Rs.2.82 millions was released to 26 societies/journals.

Sr. No.	Name of Society	Amount of Grant (Rs)
1.	Pakistan Thalassaemia Welfare Society	150,000/-
2.	Pakistan Botanical Society	250,000/-
3.	Pakistan Physiological Society	100,000/-
4.	Pakistan Phytopathological Society	100,000/-
5.	Weed Science Society of Pakistan	100,000/-
6.	The Soil Science Society of Pakistan	150,000/-
7.	The Institution of Electrical and Electronics Engineers Pakistan	75,000/-
8.	Pakistan Materials Society	100,000/-
9.	Pakistan Mathematical Society	100,000/-
10.	Pakistan Vacuum Society	100,000/-
11.	Pakistan Association for the Advancement of Science	100,000/-
12.	Pakistan Society for Biochemistry and Molecular Biology	100,000/-
13.	Zoological Society of Pakistan	250,000/-
14.	Pakistan Pharmacological Society	100,000/-
15.	Society of Economic Geologists and Mineral Technologists	100,000/-
16.	The Agricultural Foundation of Pakistan	100,000/-
17.	Pakistan Society of Nematologists	250,000/-
18.	Horticultural Foundation of Pakistan	50,000/-
19.	Pakistan Physical society	100,000/-
20.	Islamic Countries Society of Statistical Sciences	50,000/-
21.	Pakistan Institute of Physics	50,000/-
<b>Total</b>		<b>2, 475,000/-</b>

Sr. No.	Name of Journal	Amount of Grant (Rs.)
1.	Pakistan Journal of Pharmaceutical Sciences	75,000/-
2.	Geographic Journal	75,000/-
3.	Farming Outlook	50,000/-
4.	Pakistan Oral & Dental Journal	100,000/-
5.	International Journal of Phycology & Phycochemistry	50,000/-
	<b>Total</b>	<b>350,000/-</b>

#### 1.3.4 Awards and Fellowships

PSF provides a limited number of research fellowships to those M.Phil and PhD scholars who do not have any other source of income. During the year, Rs.0.729 million was paid to 13 M.Phil students on account of research fellowships for carrying out their M.Phil research at their parent institutions.

S. No	Name & Address of Student	Degree	Amount of Fellowship (Rs.)
1.	Tabassum Bibi, M.Phil Scholar, Dr. A.Q. Khan Institute of Biotechnology and Genetic Engineering (KIBGE) University of Karachi, Karachi	M. Phil	72,000/-
2.	Ms. Najma Shaheen, M. Phil Scholar, Department of Biochemistry, Quaid-i-Azam University, Islamabad	M. Phil	72,000/-
3.	Mr. Faiz Wali, M.Phil Scholar, Center for High Energy Physics, University of the Punjab, Lahore	M. Phil	90,000/-
4.	Ms. Samreen Chandio, M.Phil Scholar, Department of Botany, Shah Aabdul Latif University, Khairpur	M. Phil	90,000/-
5.	Ms. Haleema Sattar, M.Phil Scholar, Department of Zoology, PMAS Arid Agriculture University, Rawalpindi	M. Phil	45,000/-
6.	Mr. Muhammad Aqeel Aslam, M.Phil Scholar, Department of Agronomy, PMAS Arid Agriculture University, Rawalpindi	M. Phil	45,000/-
7.	Mr. Shahid Hussain, M.Phil Scholar, Department of Bioinformatics and Biotechnology, International Islamic University, Islamabad	M. Phil	45,000/-



8.	Ms. Sadia Tasneem, M.Phil Scholar, Department of Microbiology, Shah Abdul Latif University, Khairpur	M. Phil	45,000/-
9.	Ms. Maria Saleem, M.Phil Scholar, Department of Agricultural Chemistry, KPK Agricultural University, Peshawar	M. Phil	45,000/-
10.	Mr. Mumtaz Ali Khan, M.Phil Scholar, National Centre of Excellence in Geology, Univeristy of Peshawar, Peshawar	M. Phil	45,000/-
11.	Ms. Rozina Bughio, M.Phil Scholar, Institute of Advanced Research Studies in Chemical Sciences, University of Sindh, Jamshoro	M. Phil	45,000/-
12.	Ms. Asma Soomro, M.phil Scholar, Institute of Advanced Research Studies in Chemical Sciences, University of Sindh, Jamshoro	M. Phil	45,000/-
13.	Ms. Saiqa Jabeen, M.phil Scholar, Department of Agricultural Chemistry, KPK Agricultural University, Peshawar	M. Phil	45,000/-
<b>Total:</b>			<b>729,000/-</b>

### 1.3.5 Financial Support for Scientific Survey

The Foundation also provides funds for the scientific surveys to collect data on important scientific issues/problems. During the year, an amount of Rs.0.108 million was approved for a scientific survey entitled “*Epidemiological genetic survey of dementia in Pakistani population*” at University of Health Sciences, Lahore. However, due to capacity of funds, it could not be initiated.

## 2.0 SCIENCE POPULARIZATION

The need of promotion and popularization of science and technology for economic growth and for improvement of the quality of life of a nation can never be denied. The dream of scientific and technological development leading to economic self-reliance cannot come true unless all the segments of the society realize the importance of science and technology. Popularization of science through non-formal science education activities can play a pivotal role for creating science awareness among the masses.

Under the action plan of the National Science Policy 1984 and draft Science Policy 2011 the Government has assigned Pakistan Science Foundation the task of popularization of science at grass root level. The primary objective of the activities is to increase society's understanding of science.

To achieve the objective of increased science awareness, PSF is undertaking a number of programs including:

- Science Caravan (Mobile Science Exhibition)
- Establishment of Science Centre, Museums, Herbaria & Planetaria.
- Strengthening of the Laboratories of the Govt. High School of rural areas
- Organization of S&T Fairs and Traveling Expos.
- Organizing Science Poster, Essay and Quiz Competitions
- Holding Popular Science Lectures
- Donation of Popular Science Magazines and Scientific Books to Schools Universities and S&T Organizations.
- Preparation and Dissemination of Scientific Literature in the form of leaflets, posters, Booklets and Brochures
- Financial Assistance for publication of Scientific Books
- Financial Assistance for Science Popularization activities of the other organizations.
- Use of Inquiry Based Science Education "*la main ala pate*"-LAMAP for motivation in students towards science education.

## **2.1 Science Popularization Activities**

### **2.1.1 Science Caravans (Mobile Science Exhibition)**

Science Caravans are meant for organizing Mobile Science Exhibitions for the students and general public. Science Caravan is a specially designed truck which carries a consignment of scientific and technological concepts displayed through simple exhibits, colorful diagrams and photographs, specimens along with their write-ups, inflatable Planetarium system and working models on various subjects. The science exhibition is installed in a central school/college and the students from the neighboring schools as well as general public visit these exhibitions. The visits are arranged in collaboration with the relevant Directorate of Education. Through these exhibitions, efforts are made to develop the skills of students to think and solve every day problems by application of science and technology in their daily life. At present nine Science Caravan Units are in operation. Eight units are stationed in the four provinces (two for each) and one is stationed at Islamabad. All Caravan Units continued their activities throughout the report period and organized countrywide Caravan Exhibitions

for 534 days in various schools. More than 169115 Students of 686 Schools visited these exhibitions. Summary of exhibitions is given below:

Caravan Unit	Days	Schools	Students/Visitors
Federal Unit	82	90	29600
Punjab Unit	100	136	42533
Sindh Unit I	113	134	34550
Sindh Unit II	49	61	19809
KPK Unit	111	114	15418
Balochistan Unit	79	151	27205
<b>Total</b>	<b>534</b>	<b>686</b>	<b>169115</b>

Detail of the Caravan Exhibitions carried out by all Caravan units is placed at **Annexure-VII**

### 2.1.2 21<sup>st</sup> Intra and Inter Board Science Essay and Poster Competitions

Science Essay & Poster Competitions is a regular and very successful activity of the Foundation. PSF in collaboration with all Boards of Intermediate and Secondary Education (BISE) of the country organizes the Competitions between the students of high schools each year. So far, the Foundation has conducted 21 Essay & Poster contests in which thousand of students have participated from all over the country.

In the first phase the Boards of Intermediate & Secondary Education arrange Science Essay and Poster Competition within their jurisdiction on the theme approved by PSF and submit the results of the Intra Board level to the Foundation. After receipt of the results from all Boards, PSF organizes “Inter Board Contest” (the final) at PSF Head Office, Islamabad each year. Judges consisting of professors, scientists and artists evaluate the essays and posters received from all over the country for best three positions (winner of the winners) to encourage the students. PSF awards merit certificates and cash prize to the winner students. The amount of prize money for the best three students of Intra Board level is Rs.5,000/-, Rs.3,000/- and Rs.2,000/- and that for Inter Board level (Final) is Rs.10,000/-, Rs.6,000/- and Rs.4,000/- respectively.

21<sup>st</sup> Science Essay Competition was organized during 2011-2012; the theme was “*Chemistry in our Daily Life*” The essay competition was organized in three languages (English, Urdu & Sindhi). Hundreds of students participated in the competition from all Boards, out of them fifty six (56) students were selected as winners. Details of the winner students of Intra Board Science Essay Contest are placed at **Annexure-VIII**. Cash prize were awarded to the winner



students. Final contest (Inter Board) was organized by PSF at Islamabad. Following panel of judges consisting of the following evaluated the essays for the best three positions in each language.

- Mr. Muhammad Hamid, Principal, IMCB, F-10/3, Islamabad
- Dr. Muhammad Javed Iqbal, Chairman, Dept. of Distance, Non-formal & Continuing Education, AIOU, Islamabad
- Dr. Khalil Ahmed Ibupoto, Member Science, Pakistan Science Foundation, Islamabad.

**List of the Winners of Inter Board level is given below:**

<b>A. Urdu Language</b>				
<b>Sr. No.</b>	<b>Name of winner Student</b>	<b>Name &amp; Address of School</b>	<b>Amount</b>	<b>Position</b>
1.	Sidra Arif D/O Muhammad Arif	Bahria Model School-11 Majeed S.R.E, Karachi	Rs.10000/-	1 <sup>st</sup>
2.	Muhammad Yasir Ilyas	Govt High School Kharianwala P/O Teh & Distt. Sheikhpura	Rs.6000/-	2 <sup>nd</sup>
3.	Zukhruf Liaqat D/O Liaqat Hussain Khan	Siddeeq Public School 6 <sup>th</sup> Road, Satellite Town Rawalpindi	Rs.4000/-	3 <sup>rd</sup>
<b>B. English Language</b>				
1.	Sumbal Tariq D/O Tariq Mehmood	Jinnah Jam-e-School and college Haripur	Rs.10000	1 <sup>st</sup>
2.	Hasnain Khan S/O Muhammad Hassan Solangi	Govt.Sent Joseph High School Larkana	Rs.6000	2 <sup>nd</sup>
3.	Zulaikha Batool D/O Muhammad Afzal Majeed	Govt. Comp. Girls High School Madina Town Faisalabad	Rs.4000	3 <sup>rd</sup>
<b>C. Sindhi Language</b>				
1.	Mazher Majeed S/O Abdul Majeed	Gulistan Shah Abdul Latif Boys Secondary School Karachi	Rs.10000	1 <sup>st</sup>
2.	Ramsha Jannat D/O Aziz Uddin	Metropolis Academy, Waterpump Campus Karachi	Rs.6000	2 <sup>nd</sup>
3.	Miss Rabail D/O Illahi Bux Parhyar	Govt. Girls H/Sec School Hussainabad, Hyderabad	Rs.4000	3 <sup>rd</sup>

21<sup>st</sup> Science Poster Competition was held on the theme “*Food Security Threatened By Climate Change*”. Forty-three students were declared as winners of Intra Board Competition. Detail of the winner students of Intra Board Science Poster Contest is placed at **Annexure-IX**. Cash prize were awarded to the winner students. Final contest (Inter Board) was organized by

PSF at Auditorium, Islamabad on 6<sup>th</sup> June, 2012. A panel of judges consisting of the following evaluated the posters for the best three positions.

- i. Dr. Mirza Habib Ali, Senior Scientific Officer, R&D Industry Programme, Pakistan Science Foundation, Islamabad.
- ii. Dr. Tabassum Shaheen, Head of Fine Arts Department, Fatima Jinnah University, Sadar Cantt, Rawalpindi.
- iii. Mr. Rahat Saeed, Exhibit Designer, Pakistan Museum of Natural History, Islamabad.

**List of the Winners of Inter Board Science Poster Competition is given below:**

Sr. #	Name of winner Student	Name & Address of School	Amount	Position
1.	Nehal Amir	City Star Public High School Faisalabad.	Rs.10000	1 <sup>st</sup>
2.	Hira Siddique	Laurel Bank Public School for Girls G.T Road, Lahore	Rs.6000	2 <sup>nd</sup>
3.	Arifa Ramazan	Working Folks Grammar High School, Kohat	Rs.4000	3 <sup>rd</sup>

**2.1.3 Inquiry Based Science Education (IBSE) Programme “La Main a la Pate” (LAMAP) in Pakistan**

Inquiry-Based Science Education program, *La main à la pâte* (hands-on) was launched by French Academy of Sciences with the support of the National Institute for Pedagogical Research and the École normale supérieure (Paris) and French Ministry of Education in 1996. In addition to France, the program has met a large interest out side the France. The experience and expertise of *La main à la pâte* have been spread among more than 35 countries including China, Brazil, Argentina, Belgium, Cambodia, Cameroon, Chile, Colombia, Egypt, Germany, Morocco, Senegal, Serbia, Slovakia, and Vietnam. Recently, the inquiry based approach has been started in Afghanistan, Iran, Mexico, Peru, Spain, Switzerland, Togo and United States of America. “*La Main a La Pate*” the Inquiry Based Learning programme initiated in Pakistan with the support of French Embassy. This programme focuses on the teaching of science in primary schools to develop the questioning attitude of children during experiments. Two International Teachers Training Workshop were held in Islamabad. French experts/Resource Persons, Mr. Michel Ouliac and Mr. Patrick Marcel from LAMAP programme of France imparted training to teachers from 30 schools of Rawalpindi/ Islamabad and Science Caravan staff.



### **3<sup>rd</sup> International Training Workshop on LAMAP:** 3<sup>rd</sup> International Training Workshop on



*Chairman Dr. Manzoor H. Soomro, Dr. Frederic Bessat, French Counselor for Culture and Development during inaugural session*

Inquiry Based Science Education; La main a la pate-LAMAP was conducted for Pakistani Teachers at PSF from 21-25 Nov, 2011. Two French Master Trainers Michel Ouliac and Patrick Marcel conducted the training programme. Dr. Frederic Bessat, French Counselor for Culture and Development was also present at this

occasion. Thirty teachers of different schools of Rawalpindi, Islamabad, Kotaddu and Karachi Participated in this workshop.

The Chairman Dr. Manzoor H. Soomro congratulated the teachers for continuing LAMAP activities in their schools and Dr. Frederic Bessat assure full cooperation for LAMAP and other science promotion activities in future. At the end of the workshop certificates were awarded to the participants. An Inquiry Based Science class was arranged in Islamabad Model School for Girls Frash Town, Islamabad. The French expert visited the Schools and observed the activities of the students.

#### **Review Meeting and Tainting Workshop for LAMAP Associated Teachers**

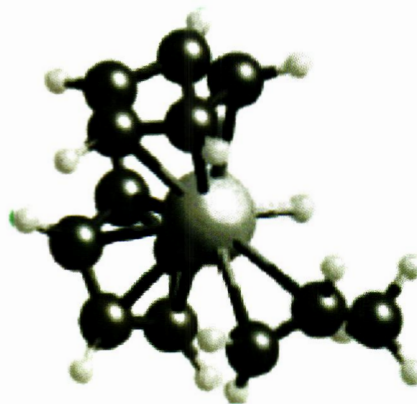
A review meeting was organized on 15 May, 2012 in PSF Auditorium to review the outcomes of previously organized three International Training Workshops on Inquiry Based Science Education (IBSE) “La main a la pate-about by PSF. Total 59 teachers and 70 students participated in the meeting. Teachers gave the feedback, discussed the difficulties faced during implementation of IBSE in their classes and schools. LAMAP activities were performed by students to access the vision of students in presence of observers & teachers.

#### **2.1.4 International Traveling Expo on Chemistry “It’s all about Chemistry”**

One of the important science popularization programme is to organize S&T Fairs & Expos. Two mega Expos titled; S&T Expo 2007 “Shaping the Future” 2007, and International Math Expo “Experiencing Mathematics” 2008, were very successfully organized at national level for increasing Science awareness in the society.

During 2009-10, Pakistan Science Foundation in collaboration with French Embassy in Pakistan organized International Traveling Expo on Environment “The Earth’s Future in our Hands” The Expo was prepared by CCSTI, France and its partners.

As part of its Science Popularization activities, PSF in collaboration with Embassy of France organized International Traveling Expo on “Biodiversity is Life- Biodiversity is Life” (2011). In 2011-12 Expo was on Chemistry entitled “It’s All about Chemistry” arranged more than 49,000 people visited the Expo. The details are as under:-



**Karachi:** Pakistan Science Foundation (PSF) in collaboration with embassy of France and UNESCO arranged Traveling Expo on Chemistry “It’s all about Chemistry” at Education Trust Nasra School, Korangi, Karachi on 6-13 Jan, 2012. The Expo was inaugurated by Prof. Dr. Manzoor H. Soomro, Chairman, PSF and H.E. Consul General of France to Pakistan Mr. Christian Ramage at ETN School, Korangi Campus, Karachi on 6<sup>th</sup> January, 2012. 3500 Students & Teachers visited the expo.

**Tandojam:** The next station of Traveling Expo on Chemistry was Sindh Agriculture University Tandojam from 16- 21 Jan, 2012. 3980 Students of Govt. / Private Schools, University Students and General public visited the expo.

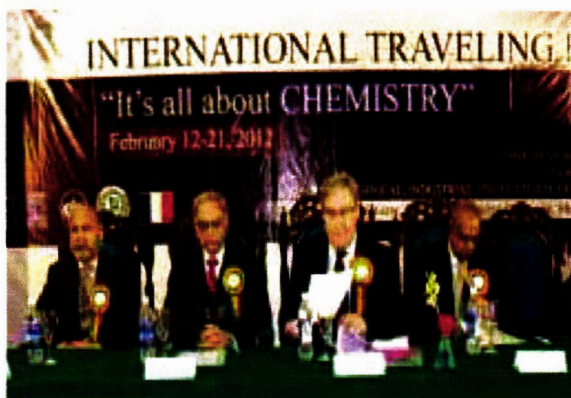
**Khairpur:** The next destination of the Expo was Shah Abdul Latif University, Khairpur. The traveling expo “It’s all about chemistry” remained there from 22<sup>nd</sup> January to 3<sup>rd</sup> Feb, 2012. Prof. Dr. Nilofer Shaikh Vice Chancellor Shah Abdul Latif University Khairpur said that this successfully organized Expo by PSF educated the students and masses. Prof. Dr. Manzoor H. Soomro, Chairman, PSF said that he is grateful to the management of Shah Abdul Latif University for their support in organizing this fruitful Expo.

**D.G. Khan:** The next station of Expo was Allama Iqbal Open University Regional Campus, Dera Ghazi Khan from 5-11, Feb, 2012. The training session was also arranged for the learning facilitation on 06<sup>th</sup> February, 2012. The expo was inaugurated by Prof. Dr. Nazir Ahmed Sangi Vice Chancellor Allama Iqbal Open University, Islamabad on 07-02-2012. Dr. Manzoor H. Soomro, Chairman, Pakistan Science Foundation said that we must make a



policy for development of science and technology Prof Dr. Manzoor H. Soomro announced the donation of 10 computers for Allama qbal Open University campus, Dera Ghazi Khan.

**Multan:** International Traveling Expo on Chemistry was opened on 13 Feb at Bahuddin



*French Ambassador Mr. Philippe Theibaud, PSF Chairman, Dr. Manzoor H. Soomro and VC, BZU Prof. Dr. Syed Khawaja Alqama at the inaugural ceremony of Expo at BZU*

Zakariya University, Multan for nine days.

The Expo was jointly organized by Pakistan Science Foundation (PSF), Embassy of France, and BZU, Multan. Speaking at the occasion, H.E Ambassador of France to Pakistan Mr. Philippe Theiboud highlighted the role of Science and Technology in national development and role of S&T Exhibitions for popularization of science in the society. Prof. Dr. Manzoor H. Soomro,

Chairman, emphasized on the need of Inquiry Based Science education at grass root level and ensured best possible support from Pakistan Science Foundation to the students and teachers in science popularization activities.

Prof. Dr. Syed Khawaja Alqama, VC, BZU, lauded the programmes of the University for S&T research for socio economic development of the country 5,000 students and teachers participated in the Expo.

**Lahore:** International Traveling expo on Chemistry was opened on 24 Feb at Children

Library Complex, Lahore for eight days. Mr. Akhlaq Ahmad Tarar, Federal Secretary, Ministry of Science and Technology was the Chief Guest, while addressing the audience he emphasized on need of popularization of science among the masses. Prof. Dr. Manzoor H. Soomro, Chairman, PSF, informed that PSF, under the National STI Policy is mandated for popularization of science at grassroots level,



*Federal Secretary S&T Mr. Akhlaq Ahmad Tarar cuts ribbon to inaugurate the Expo at Children Library Complex, Lahore*

for which a number of activities including traveling expos are being organized. He added that Inquiry Based Science Education Approach “La main la pate-LAMAP” is initiated by PSF in

25 Pakistani schools with the help of Academei des sciences, France. Malik Mukhtar Ahmad Naul, Additional Secretary, Education Reforms, Punjab informed that Govt. of the Punjab is taking major steps for education sector reforms. He ensured maximum support to PSF in organizing science popularization activities in the schools of Punjab province. Dr. Frederic Bessat, Counselor for Development and Cooperation, Embassy of France showed his pleasure to the organizers on successful arrangements of the International Traveling Expo.

**Mansehra:** After attracting more than 28000 visitors/students at Karachi, Khairpur,



*Mr. Ali Nawaz Khan, Principal GHS No. 2, Mansehra addresses the inaugural ceremony of the Expo in Mansehra*

Tandojam, Multan, DG Khan, Lahore, the Expo arrived in Mansehra where it was organized at Government High School No. 2 Mansehra, from 05.03.2012 to 10.03.2012. It was inaugurated by Dr. Syed Iqbal Shah Coordinator Havelian Campus Hazara University Mansehra. Prof. Dr.

Hameedullah from Chemistry Department Hazara University Mansehra also tried to

make Chemistry as an interesting subject by delivering a lecture on the Role of Chemistry in our daily life. The lecture was highly appreciated by the participants.

The Expo was continued till 10<sup>th</sup> March 2012. A total of 1510 students and 86 teachers from 17 government and private schools as well as general public benefited from this expo.

**Peshawar:** The next destination of the Expo was held in PIA Planetarium building Hayatabad, Peshawar from 13-17 March 2012.

Dr. Khalil Ahmad Ibuputo was the chief guest at the occasion. Dr. Imdadullah, Director Institute of Chemical Sciences University of Peshawar, Dr. Hassan Mehmood Khan Director National Center of Excellence in Physical Chemistry University of Peshawar,



*PSF Member Science Dr. Khalil Ahmed Ibuputo inaugurates the Expo in Peshawar*

Engr. Liaqat Ali Director General Pakistan Council of Scientific and Industrial Research



Peshawar were also present at the occasion. All of them informed the audience about the role and contribution of their institutions towards science –the Chemistry. Mr. Muhammad Sardar Khan Manager PIA Planetarium Peshawar also extended his cooperation and welcomed the participants on their premises. Prof. Dr. Khursheed Ali Institute of Chemical Sciences University of Peshawar delivered a thought provoking lecture on the Role of Chemistry in our daily life. About two thousand students of local schools and colleges of Peshawar and general public visited this Expo.

**Swat:** The next station of the Expo was Swat Public School and College Mingora Swat from 21-24<sup>th</sup> March 2012. Dr. Manzoor H. Soomro, Chairman Pakistan Science Foundation, Islamabad was the chief guest at the inaugural function. Dr. Frederic Bessat Counselor for Development and Cooperation, embassy of France also graced the occasion. Mr. Sultan Mahmood Executive District Officer (E&SE) Swat participated in this function as guest of honour and addressed the audience. Prof. Sawar Khan Department of Chemistry Government Postgraduate Jehanzeb College Saidu Sharif Swat delivered a lecture on the Role of Chemistry in our daily life. A total of 1586 students and 67 teachers from 6 government and private schools as well as general public benefited from this expo.

**Islamabad:** The expo was opened at Allama Iqbal Open University, Islamabad on 28.03.2012. Prof. Dr. Manzoor H. Soomro, Chairman PSF inaugurated the 3 days Expo in Islamabad while France Attache for Cooperation Mr. Gilles Angles, AIOU Chemistry Department's Chairperson Prof. Dr. Naghmana Rashid also appreciated PSF for this mega event. Dr. Manzoor H Soomro spoke about PSF-CCSTI, France MoU to promote inquiry based learning programme. French Attache for Cooperation Mr. Gilles Angles thanked PSF and AIOU for hosting the International Traveling Expo in Islamabad. Approximately 1500 students, teachers and General public visited the Expo.



*PSF Chairman along with other dignitaries visits the Expo in Islamabad after its inauguration*

**Sibbi:** Opening Ceremony of the Expo in Sibbi was held on 03-04-2012, the Chief Guest Federal Minister for Science & Technology Mir Changez Khan Jamali, Member Science Dr.



Khalil Ahmed Ibupoto, Divisional Director of Education, and D.E.O Mulla Muhammad Umrani were present on the occasion. 5800 students and general public participated to get firsthand knowledge on Chemistry and its applications in our daily life.

**Jaffarabad:** The Expo was opened at Jaffarabad on 05-04-2012 the Chief Guest Federal Minister for Science & Technology Mir Changez Khan Jamali, Member Science Dr. Khalil Ahmed Ibupoto and D.E.O Jafar Abbad addressed the audience. 4250 students and general public participated in this Expo.

**Quetta:** Pakistan Science Foundation (PSF) is continuously striving for developing science culture in the country through its science popularization programmes. The present expo of the series “It’s all about Chemistry” was started from Karachi and moved through Tandojam, Khairpur, DG Khan, Multan, Lahore, Mansehra, Peshawar ,Swat, Islamabad, Sibi, Jafferabad and the last destination was Quetta on 11-14 April, 2012. In this Expo 4000 students and general public participated to get first hand knowledge on Chemistry and its applications in our daily life. The Federal Minister for Science & Technology Mir Changez Khan Jamali was the Chief Guest at closing ceremony, French Ambassador Mr. Philippe Theibaud, Chairman PSF Dr. Manzoor H Soomro, Pro-VC BUITEMS, Pro-VC University of Balochistan and the Heads/Representatives of various departments were also present.

### 2.1.5 World Science Day for Peace and Development

PSF and UNESCO marked the World Science Day by organizing a special event on November 22, 2011-12 at PSF auditorium. Prof Dr. M. Masoon Yasinzai, Vice Chancellor Quaid-e-Azam University, Islamabad and member of PSF Board of Trustees was the chief guest of this event. A large number of people including Scientists,



media persons, teachers and students actively participated in the function. The speakers included Dr. Manzoor H. Soomro, Chairman PSF, Ms. K. K. Nagata, Director/Representative UNESCO and Dr. Ghulam Akbar, Senior Director/National Program Manager, WWF Pakistan, who highlighted the importance of the Science and the change it brought in our

lives. Elaborating this year's theme as declared by UNESCO "World Science Day for Peace and Development-Towards Green Societies through Equity, Inclusiveness and Participated", the speakers talked about different challenges posed by climate change, biodiversity loss and natural disasters. They stressed the need to manage our natural resources for sustainability of biodiversity for the benefit of mankind. The Chief Guest and the Chairman, PSF also awarded prize to winner students of the 20<sup>th</sup> annual Inter Board Science Essay and Poster Competition for the year 2010-11.

### **2.1.6 Inter Schools Models & Speech Competitions**

The Pakistan Science Foundation Balochistan Unit Quetta arranged an Inter Schools Competition on Models and Speech on Chemistry at Govt Girls High School Lady Sademan, Quetta on 05-04-2012. Mr. Nizam-u-din Director Education (Secondary) Quetta was the Chief Guest Prof. Tariq Bhatti (head of Chemistry Dept Govt .Science College), Prof. Mrs. Bushra (Principal Govt Girls College Satellite Town, Quetta), Lecturer Chemistry Dept (UoB) participated as Judges. 16 Sixteen Government Boys/Girls High Schools and Four Private Schools have been registered for participation and preparation of Models. After the completion of registration an amount @ Rs.5,000/- was given to the 16 Govt Boys/Girls Schools for preparation of models.

The judges selected three best models. The contestants delivered speeches on the topic "The Role of chemistry in our daily life", the chief guest appreciated this inter School Competition. The Chief Guest distributed the prize, Certificates and Prize money amongst the position holder in models and speeches. The following Schools and Students won the First Three positions in competition on models and speech.

#### **Position Holder Models Competition**

- |                               |                                     |
|-------------------------------|-------------------------------------|
| 1. GGHS Mission, Quetta       | (1 <sup>st</sup> Position on Model) |
| 2. GGHS, Islamabad, Quetta    | (2 <sup>nd</sup> Position on Model) |
| 3. GGHS Lady Sandeman, Quetta | (3 <sup>rd</sup> Position on Model) |

#### **Position Holder Speech Competition**

- |  |                                      |
|--|--------------------------------------|
| 1. Mr. Khadim Hussain (GBHS Yazdan Khan, Quetta) | (1 <sup>st</sup> Position on Speech) |
| 2. Miss. Adila Batool (GGHS Islamabad, Quetta)   | (2 <sup>nd</sup> Position on Speech) |



3. Miss. Azka Altaf (GGHS Lady Sandeman, Quetta) (3<sup>rd</sup> Position on Speech)

4. Miss. Aisha (GGHS Mission, Quetta) (3<sup>rd</sup> Position on Speech)

### 2.1.7 Financial Assistance to High Schools and Other Organizations

PSF also provides financial assistance to high schools/other institutions for their science propagation activities and also helps the schools in strengthening of the Laboratories. During 2011-12, an amount of Rs.1,935,000/- was sanctioned for 32 schools and S & T organizations. List of the schools and organizations provided with financial assistance is placed at **Annexure-X**.

### 2.1.8 Donation of Scientific Literature to High Schools

Donation of Popular Science Magazines and Scientific Books is one of the regular and important activities for science popularization. 18,000 copies of Popular Science magazine “Monthly Global Science” were distributed to 1500 schools during the report period. In addition, more than 12000 copies of scientific brochures were also distributed among the students through science caravans. Scientific Journal “The Fountain” published by The Light Publishing Turkey was provided to Caravan offices, PASTIC offices and PMNH.

### 2.1.9 Popular Science Lectures

Pakistan Science Foundation arranges series of lectures where eminent Scientists and educationists express themselves. In 2011-12 Popular Science Lectures were organized in PSF Auditorium by the following Eminent Scientist.



*Prof. Dr. Manzoor H. Soomro, Chairman PSF, talking on PSF popular lecture series programme*

**Devastation of Dengue Virus in Pakistan:** PSF arranged a lecture titled “Devastation of Dengue Virus in Pakistan” delivered by Dr. Waseem Akram, Associate Professor, Department of Agri-Entomology, and University of Agriculture

Faisalabad on October 21, 2011 at PSF Auditorium.

**Pleasure of Science:** Dr. Anwar Nasim, renowned scientist and recipient of Sitara-e-Imtiaz and Pride of Performance and Patron of National Academy of Young Scientists (NAYS) delivered a lecture on “Pleasures of Science” under PSF science popularization programme.

## 2.1.10 MoUs Signed

**PSF-CCSTI France MoU:** PSF, Ministry of Science and Technology, Government of Pakistan and Centre Sciences-CCSTI, France signed an MoU for promotion of science in a



*PSF Chairman Dr. Manzoor H. Soomro and SPO Chief Executive Officer (CEO) Naseer Memon signing the MoU*



*PSF Chairman and CCSTI-France Deputy Director signing the agreement*

ceremony at PSF on December 21, 2011. Federal Minister for Science and Technology Mir Changez Khan Jamali was the chief guest. French Ambassador Mr. Philippe Thiebaud and Secretary Ministry of Science and Technology Mr. Akhlaq Ahmed Tarar were also present. Under the MoU, PSF and CCSTI would work together for sharing of expertise with each other, Co-production and organization of traveling exhibitions, arranging trainings, workshops, conferences and various types of events for promotion and popularization of science, training for project implementation and development of tools, exchange of information, feedback and innovative projects and exchange and joint production of teaching materials like literature, videos, and other data for designing of common activities.

**PSF-SPO MoU for Capacity Building of Rural Masses:** Pakistan Science Foundation, Islamabad Ministry of Science and Technology (MoST) and Strengthening Participatory Organization (SPO) joined hands to improve livelihood of the people through collaborative programs. This decision to this effect was taken in a meeting of Chairman PSF Prof. Dr. Manzoor H. Soomro and Chief Executive SPO Mr. Naseer Memon on Aug 27, 2011 at PSF. PSF Chairman Dr. Manzoor H. Soomro and SPO Chief Executive Officer (CEO) Naseer Memon signed the MoU on behalf of their respective organization. Ms. Shenaz Wazir Ali, Special Assistant to the Prime Minister of Pakistan on Social Sector was the chief guest of this ceremony. Chairperson SPO Mr. Tufail Muhammad and UNESCO-Pakistan Director Dr. K. K Nagata were also present on this occasion.



### 2.1.11 Intel Science Fair-2012

The winners of Intel National Science Fair-2012 “Inspiring the Next Generation of Innovation” were awarded prize at Pakistan Science Foundation (PSF) Auditorium on April 20, 2012.



*PSF Chairman Dr. Soomro awards prizes to Intel Science Fair Winners and certificates to students selected for participating in LIYSF-2012*

PSF as part of its science popularization activities support Pakistani students to

participate in the International Scientific events/forums. PSF chairman Prof. Manzoor H. Soomro was the Chief Guest of the Awards and Orientation Ceremony.

Prof. Dr. N.M. Butt, S.I, Chairman, Preston Institute of Nano Science and Technology (PINSAT) Islamabad, Prof. Dr. M. Aslam Baig, H.I, S.I, T.I, Professor Emeritus, Fellow, Pakistan Academy of Sciences. Islamabad, Dr. Khalil Ahmed Ibupoto, Member Science, PSF, Intel Pakistan education Program Manager Khadija Bashir, a large number of scientists, teacher and students attended the awards ceremony. The students selected for participation in London International Youth Science Forum (LIYSF)-2012 were also given the award letters on this occasion. Later, an Orientation Session was held for them to update them about their visit schedule. It is important to mention that under its science promotion and popularization program, PSF with the support of “National Academy of Young Scientists (NAYS) is arranging this first ever participation of Pakistani students of 17-21 Years of age in the Forum. Some 222 students of the universities from all over the country applied for attending the Forum and 20 short listed students were interviewed who will represent Pakistan on August 16-30, 2012 at Imperial College, London.

### 2.1.12 Training Workshop for Science Centers and Caravans

PSF organized a training workshop on “Team Building” for Caravan staff from all units at PSF Auditorium on October 12, 2011. Expert from Strengthening Participatory Organization conducted the workshop. More than 30 scientific staff from all science Caravan Units and Science Centre participated in this workshop.



### **2.1.13 Science Media Cell Activities**

PSF media cell is playing an important role by promotion Science in electronic and print media for mass awareness and education and highlighting science and technology in order to create a science culture in the country, as science and technology is vital to socio-economic development of any country.

**Print & Electronic Media Coverage:** The Media Cell highlighted all major activities of PSF, PMNH and PASTIC through Media, Released over 200 Press Releases along with photos and caption to Print Media. The Main events included ECOSF BoT Meeting, MoU between PASTIC and AMS, MoU between PASTIC and Recto, MoU between PSF and SPO, MoU between MoST and CCSTI and PSF, 3rd LAMAP Training Workshop, 4-month Int'l Expo on Chemistry, World Science Day 2011, Press Conference on acquiring Whale Shark Specimen by PMNH, Visits of different delegations to PSF, S&T Minister and PSF Chairman's visits to Japan, Italy, Kuwait, Iran and Finland, UNESCO Director's Meetings with PSF Chairman, PSF-Intel awards ceremony, NAYS and PSF activities, Invention to Innovation Summit 2012, State Minister's visit to PSF, NSLP BoG Meeting, PMNH Earth Day activities, Int'l workshop on Modern techniques in ecology, Gemstone identification and evaluation training workshop, Plant collection and Preservation Workshop, Press Briefing on Whale specimen, PSF Workshop on Solid Waste Management and signing MoUs.

#### **Publicity through Ads and Special Supplements**

- Advertisement Highlighted PSF 39-year of services for promotion of S&T
- 8th Int'l Food Tech Exhibition and Conference 2012
- Invention to Innovation Summit 2012

**PSF Newsletter:** Media Cell published 8, two quarterly and 6 monthly issues in 2011-12 in order to keep readers updated on PSF activities.

**A/V Productions:** media cell Promoted Science through A/V Productions including Documentary on Int'l Expo on Chemistry, Video Production of Biodiversity Song, and Initiation of Weekly Radio Program titled science.com by Radio Pakistan's Channel FM 93 (Under Process for Agreement and Mode of Payment)

**Training Programmes:** Pakistan Science Foundation in collaboration with Associated Press of Pakistan (APP) and Non Government Organization Inter Global Human Development Society (IGHDS) organized one-day workshop on “Science Report Writing”, at Shah Abdul Latif University, Khairpur on February 4, 2012.

PSF Chairman Prof. Dr. Manzoor H. Soomro presided over the inaugural session of the workshop aimed at using media to popularize science in remote areas of the country.

IGHDS Chief Executive Officer Dr. Shakil Ahmed Jamil, Dr. Raza Bhatti, Director of Center for Biodiversity and Conservation, Department of Mass Media Studies, SALU, Khairpur Press Club President Khan Muhammad, PSF Sr. Science Promotion Officer Syeda Rehana Batool, Zaheer Khan Lodhi, Zameer Lashari and others spoke on the occasion. In final session practical skills were imparted it was recommended that the journalists should file only authentic news based on information given in writing by the researchers to avoid confusion. Certificates were also awarded to the participants of the training.

**Website:** Media Cell regularly updated PSF website through preparation of website content, press releases and photographs with captions to upload on website during the report period.

### **3.0 INTERNATIONAL LIAISON**

Liaison with other organizations benefits and challenges. During the period under report, thirty eight (38) proposals of PSF, PASTIC & PMNH for S&T collaboration with Egypt, WIPO, Malaysia, Brazil, France, Norway, Korea, Russia, Tajikistan, Japan, UNEP, Italy and Saudi Arabia were forwarded to MoST for consideration under various S&T Protocols/Agreements/MoUs signed by the Government of Pakistan.

The following International Liaison related documents were compiled & submitted to MoST:

- Ongoing and recently completed R&D projects related to the Advanced and Emerging Technologies related to the Implementation of the Decision of the Ministerial Standing Committee on COMSTECH.
- 15<sup>th</sup> Annual Session of the United Nations Commission on Science & Technology for Development (UNCSTD).
- Approval of following two projects under 17<sup>th</sup> S&T Protocol with China.

- R&D project “Molecular characterization, Mass production and Formulation of Entomopathogenic Nematodes” implemented under R&D Industry Programme of PSF
- Study Visit of Scientists from Pakistan Science Foundation to Beijing Museum of Natural History, Beijing, China.
- Coordination/ submission of case for the visit of PSF/ PMNH scientists to NNSF and BMNH, China.
- Coordination of the visit of Chinese delegation to Islamabad (PSF, PMNH, PARC) & Director P&D delivered Introductory presentation to the delegates.
- Comments on MoU on Technological Cooperation and Document on Necessity of Establishment of Common Tech Market in D-8 countries.
- Following two (02) MoUs forwarded to MoST for clearance.
- MoU between PSF and Economic Cooperation organization-Institute of Environmental Science & Technology (ECO-IEST), Iran for Promotion and Popularization of Environmental Sciences
- MoU between PSF and University of Rome “*Tor Vergata*”, Italy for Scientific and Technological Collaboration
- Draft Agreement and Executive Protocol for Scientific Cooperation between the Pakistan Science Foundation and the Turkish Academy of Sciences

### **3.1 Scientists Exchange Programme**

A total of 15 requests from the scientists/technologists were presented in the PSF Travel Grant Award Committee Meeting, out of which 10 were recommended for approval whereas 07 scientists/technologists availed the travel grants. An amount of Rs.927,188/- was utilized for the purpose. The list of scientists is placed at **Annexure-VI**.

### **3.2 ECO Science Foundation**

Economic Cooperation Organization Science Foundation (ECOSF) was established as a specialized agency of ECO on 20 December, 2011 with its Secretariat at Islamabad-Pakistan to function as a reservoir of highly skilled scientific and technical manpower and to facilitate promotion of scientific research among the member states of ECO, as envisaged by the Treaty of Izmir.



### **1<sup>st</sup> Meeting of BoT, Islamabad, Pakistan:**



*Federal Minister for Science and Technology  
Mir Changez Khan Jamali presiding over the meeting*

The first meeting of Board of Trustees of ECOSF was held in Islamabad, the Islamic Republic of Pakistan, on 20<sup>th</sup> December, 2011. Pakistan Federal Minister for Science and Technology Mir Changez Khan Jamali presided over the meeting. The basic documents of ECOSF

were approved and the Foundation was established. The Meeting was attended by

the Ministers/Deputy Ministers for Science & Technology/Representatives of relevant authorities of the Islamic Republic of Afghanistan, the Islamic Republic of Iran, the Republic of Kazakhstan, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Republic of Tajikistan and the Republic of Turkey. The delegation of the ECO Secretariat to the Meeting was led by the ECO Secretary-General. A representative of the UNESCO Islamabad also attended the Meeting.

ECO Secretary General H.E. Muhammad Yahya Maroofi said establishment of ECOSF was beginning of a new chapter of cooperation in the field of science and technology among the member states, which is the result of fruitful culmination of efforts for this project.

### **Inauguration of ECOSF Secretariat Office**

The ECO Science Foundation (ECOSF)-the specialized agency of ECO with the mandate to promote cooperation in the field of science, engineering & technology- has been rendered operational after more than sixteen years. A simple inauguration of the Foundation Secretariat was organized on 21 December, 2011, wherein, the Secretary General ECO H.E. Mr. Yahya Maroofi cut the ribbon to open the Secretariat at PSF building in Islamabad, I.R. of Pakistan.

### **President ECOSF attended Consultative Meeting on IPBES in Tehran**

ECO Science Foundation (ECOSF) President attended Consultative Meeting on IPBES in Tehran on 10-12 March 2012. He also held a meeting with the Deputy-Secretary General (T&I/AIT/IR). The two sides discussed matters concerning implementation of the decisions of the 1st Board of Trustees (BoT) Meeting of the Foundation held in Islamabad in December 2011.



*ECOSF President attending Consultative Meeting on IPBES in Tehran*

### **Iranian Minister visited ECOSF and PSF**

An Iranian delegation paid a visit to Pakistan Science Foundation (PSF) in Islamabad on April 17<sup>th</sup> 2012 with particular reference to establishment of ECOSF. The Iranian delegation comprised Iranian Deputy Minister for Science Research and Technology Dr. Ahmed Akbari, Director Shiraz Technology Park Dr. Syed Ahmed Fazalzadieh. Mr. Seyed Ali Salehpour, Counselor Embassy of Iran was accompanied the delegation.



*PSF Chairman Prof. Dr. Manzoor H. Soomro presents a souvenir to Iranian Deputy Minister for Science, Research and Technology Dr. Ahmed Akbar*



### **Journal Editorial on “Importance of Networking for Cognitive Science in the ECO Region”**

ECO Science Foundation Published an Editorial on “Importance of Networking for Cognitive Science in the ECO Region” in the International Journal ‘*Basic and Clinical Neuroscience*’ Vol. 3 No.2, 2012.

### **Preparation of Draft Modalities for Utilization of S&T Fund**

The draft modalities for utilization of S&T fund and its mechanism in the form of Flow-Chart was prepared and submitted to ECO Secretariat Tehran, for circulation to all Member States and consideration of CPR.

### **Preparation of the ToR for the post of Executive Director ECOSF**

The draft of the ToR for the post of Executive Director ECO Science Foundation was prepared and submitted to ECO Secretariat Tehran for approval of ECO CPR.

### **Development of ECOSF Website**

The website of ECO Science Foundation was developed and activated ([www.eco4science.org](http://www.eco4science.org)). Secure email address of the president-designate ([president.ecosf@eco4science.org](mailto:president.ecosf@eco4science.org)) on the domain of ECOSF and ECOSF Registry ([ecosf@psf.gov.pk](mailto:ecosf@psf.gov.pk)).

### **22nd Meeting of the ECO Regional Planning Council, Tehran**

The 22<sup>nd</sup> Meeting of the Regional Planning Council (RPC) of the Economic Cooperation Organization (ECO) was held on 9 – 11 July, 2012 in the Institute for Political & International Studies (IPIS), Tehran-Iran. President-designate of ECOSF participated in the meeting. The Representatives of other ECO Regional Institutes and Specialized Agencies attended the meeting. President ECOSF Prof. Dr. Manzoor H. Soomro highlighted the efforts of ECO Science Foundation

## **4.0 PLANNING AND DEVELOPMENT**

### **4.1 On-Going Development Project “Participation of Scientists and Technologists in International Science Conferences, Seminars, Workshops and Trainings Abroad (Phase II)”**

The project is aimed at providing financial assistance to Pakistani scientists, technologists, doctors and engineers working in R&D organizations and educational institutions as well as Ph. D students for:

- (i) Participation and presentation of research papers in International conferences, seminars & workshops abroad,
- (ii) Attending short term (1-2 weeks) specialized training courses or obtaining training on specialized laboratory equipment in laboratories of the advanced countries,
- (iii) Undertaking a part of research work for which facilities are not available in Pakistan.

During the year 2011-12 an amount of Rs.4.0 million was allocated under the PSDP while Rs.3.0 million was released to the project and spent on the project activities. A total of 238 requests were received from scientists and technologists of the country. After comprehensive scrutiny as per eligibility criteria 84 requests were presented in 06 meetings of Travel Grant Award Committee (TGAC). Out of the 84, 41 were recommended whereas 24 scientists/technologists availed the grant (**Annexure-V**).

#### 4.2 Development Projects Submitted to MoST

PC-Is of following PSDP projects with revised cost and scope were submitted to MoST for the consideration/approval of DDWP/CDWP.

Sr. No.	Project Title	Duration (Months)	Amount (Rs. in million)	Status
i.	Establishment of Five Science Centers in Various Cities of Pakistan	24	767.429	PC-I has been forwarded for the consideration of CDWP forum after the signatures of Secretary MoST. PC-I will be presented and defended in the forthcoming CDWP meeting as and when convened.
ii.	Establishment of Two Science Centres in Balochistan	36	196.395 (Revised)	Revised PC-I was presented in the meeting held at MoST on 3 <sup>rd</sup> January, 2012 and it was decided that PC-I with new title "Establishment of Exhibition Science Centre/ Museum" will be prepared as per directives of Secretary, MoST.
iii.	Establishment of Science Clubs in 50 High Schools of Balochistan	24	59.94	PC-I was presented in the meeting held at MoST on 3 <sup>rd</sup> January, 2012 and it was decided that PC-I with new

				title "Fellowship/ Scholarship Programme for SSC/F.Sc Students of Balochistan" will be prepared as per directives of Secretary, MoST.
iv.	Strengthening & Enhancement of Reprographic Services of PASTIC (Revised)	48	37.00 (Original) 49.4383 (Revised)	Due to the escalation of cost of equipment, revised PC-I at cost of Rs.49.43 million was presented in the DDWP meeting held on 14 <sup>th</sup> February, 2012 and was approved.
v.	Popularization of Science in Rural Areas (Preparation of four new Caravans) Phase-II	24	59.864 (Revised)	PC-I was submitted to MoST at the revised cost and the same was presented in the DDWP meeting held on 14 <sup>th</sup> February, 2012. PC-I was deferred.
vi.	Financial support to Scientific Societies of Pakistan (Phase-II)	60	42.09 (Revised)	PC-I was submitted to MoST at the revised cost. It will be presented and defended in the forthcoming DDWP meeting as and when convened.

#### 4.3 Submission of PC-IV to MoST

PC-IV and technical report of the completed project of PMNH entitled "Completion of Block-II and Strengthening of Research and Display activities of PMNH, Islamabad" forwarded to MoST.

#### 4.4 Other Activities

##### i) Submission of Important Reports to MoST/ Planning Commission:

- ✓ Strategic Vision for the next five years along with Reforms Agenda.
- ✓ Pakistan's New Growth Strategy
- ✓ Implementation Plan for Framework for Economic Growth-Pakistan
- ✓ Targets-Indicators for 2012-15
- ✓ Merger of Strategic Vision and a review of implementation of Pakistan's New Growth Strategy
- ✓ Implementation Assessment of Completed projects of PSF by Planning Commission Annual Plan (2012-13)



- ✓ Achievements pertaining to PSF and its subsidiary organizations i.e. PMNH and PASTIC since 2008 onwards
- ✓ Report on Rationalization of Current and Development Expenditure in respect of PSF, PMNH, PASTIC.
- ✓ Presentation for 2<sup>nd</sup> Quarterly Review Meeting on “Commercialization Programmes of MoST Organizations”
- ✓ Presentation for National Assembly Standing Committee on S&T held on 28th July 2011 at PSF.

**ii) Replies to the Senate/National Assembly Questions**

- Senate Motion under Rule 194 moved by Dr. Muhammad Ismail Buledi, Senator on 8<sup>th</sup> September, 2011 regarding overall performance of the Ministry of Science & Technology in respect of
  - a) Major Achievements of the Organization upto date;
  - b) Major Policy decisions/key initiatives taken
  - c) Major Projects of the MoST and its organizations
  - d) Summarized details of Organizations along with Major Achievements
  - e) Major Achievements 2010 – 11
  - f) Major Targets 2011 – 12
  - g) Measures/Efforts Required
    - HR Related Issues
    - Developmental Initiatives
- National Assembly Question moved by National Assembly Secretariat on 26<sup>th</sup> August, 2011
  - a) The departments functioning under the Ministry at present alongwith objectives of those departments;
  - b) The performance made by the Ministry and its attached departments during the Year 2009-10 & 2010-11
- Starred National Assembly Question No.153 7<sup>th</sup> Group, Session 34th Moved by Muhammad Pervaiz Malik, MNA
  - a) The mandate of the Ministry of work in the respective fields/sector at present.

- b) The details of projects launched in each of above respective fields/sector during the last three years (FY 2008-09 to 2010-11) alongwith the achievements gained there from?
  - c) The project-wise expenditure incurred during the said period, and
  - d) Whether statutory audit of those projects has been conducted; if so, whether any irregularity reported while executing those projects if so, the detail thereof alongwith action taken against responsibilities?
- Starred National Assembly Question Dy. No. 25 Group No 3<sup>rd</sup>, 37<sup>th</sup> Session Moved by: Mr. Rana Mahmood-ul-Hassan, MNA on 7<sup>th</sup> December, 2011
- a) The details of technologies invented by the subordinate organizations of the Ministry since March, 2008 till date;
  - b) Whether it is a fact that such technologies have not been utilized commercially in letter and spirit in the country; if so the reason thereof; and
  - c) The steps being taken to enhance the national capability in Science and Technology?
- Starred National Assembly Question Diary. No. 7, Group 2<sup>nd</sup>, 42<sup>nd</sup> Session Moved by Mr. Sheikh Salahuddin, MNA on 11<sup>th</sup> May, 2012
- Year wise performance made by the Ministry of Science & technology in the field of Science & Technology in the country during last five years (FY 2007-08 to 2011-12).



**II. PAKISTAN MUSEUM OF NATURAL HISTORY  
(PMNH)**

## **1.0 Natural History Research**

### **1.1 Botanical Sciences Division**

#### **1.1.1 Field Work**

PMNH botanists conducted 9 field studies in different localities of Gilgit-Baltistan, Azad Jammu and Kashmir, Bahawalpur district, Multan district, Chakwal, Sargodha, Hyderabad, Sukkur and Khairpur districts. They collected some 3000 plant specimens that included algae, fungi and higher plants. Digital images of living plants were also collected along with field and ethnobotanical data.

#### **1.1.2 Laboratory Work**

- Identified 2000 plant specimens including higher and lower plants, catalogued them and arranged systematically in the higher plants Herbarium.
- Preserved and disinfected 400 specimens of mushrooms and other fungi and arranged them systematically in the Mycological Herbarium.
- Mounted, labeled and arranged 3000 higher plant specimens of the Herbarium, BSD.
- Entered data of 90 specimens in the database of Biodiversity and Global Networks (BGN) for use in the PMNH website.

#### **1.1.3 National Research Projects and Reports**

- "Taxonomic and Ethnobotanical studies of Economically Important Plants of Potwar plateau and the Galiat with reference to their trade". Second Annual Report was submitted to PSF.

#### **1.1.4 Publications**

- Leghari, M. K., Idris, M. and Ahmed, I. 2010. Qualitative, quantitative and vertical distributions of blue-green algal species at tobacco field of Mardan during 2006. *International Journal of Phycology and Phychochemistry*. 6(1): 21-28.
- Hussain, F., Leghari, M. K., Ahmad, H, Shah, S. Z. and Saleem, M. 2010. Qualitative and quantitative diversity of unicellular green algal species from various localities of Peshawar Valley. *International Journal of Phycology and Phychochemistry*. 6(2): 81-88.
- Hussain, F., Leghari, M. K., Ahmad, H, Shah, S. Z. and Saleem, M. 2010. Taxonomic study of order Chlorococcales (Volvophycota) from Peshawar Valley. *International Journal of Phycology and Phychochemistry*. 6(2): 131-140.
- Afzal, R., Mughal, S.M., Munir, M., Sultana, K., Qureshi, R., Arshad, M and Leghari, M.K.. 2010. Mycoflora Associated with Seeds of Different Sunflower Cultivars and its Management. *Pak. J. Bot.* 42(1): 435-445.
- Kayani, A.K., Qureshi, S., Kayani, W.K., Qureshi, R., Waheed, A., Arshad, M., Gulfranz, M. and Leghari, M.K.. 2010. Assessment of Wheat Yield Potential after Cropping Mungbean (*vigna Radiata* (L.) Wilczek). *Pak. J. Bot.* 42(3): 1535-1541.

- Gilani, S.A., Qureshi, R.A., Khan, A.M. and Potter, D. 2010. A molecular phylogeny of selected species of genus *Prunus* L. (Rosaceae) from Pakistan using the internal transcribed spacer (ITS) spacer DNA. African Journal of Biotechnology Vol. 9 (31): 4867-4872.
- Sahreen, S., Khan MA, Khan MR, Khan RA. 2010. Leaf epidermal anatomy as a taxonomic feature in the genus *Silene* (Sileneae-Caryophyllaceae) from Pakistan. Biodicon. 3(1): 93-102.
- Khan, M.A, Ahmad, M., Zafar, M., Sultana, S., Marwat, S.K., Shaheen, S., Leghari, M.K, Jan, G., Ahmad, F., and Nazir, A. 2011. Medico-botanical and chemical standardization of pharmaceutically important plant of *Tricholepis chaetolepis* (Boiss) Rech. f. Journal of Medicinal Plants Research. 5(8): 1471-1477.
- Ali, A., Shinwari, Z.K, and Leghari, M.K. 2011. Diversity of the genera of Chlorophyta in fresh waters of district Swat N.W.F.P. Pakistan. Pak. J. Bot. 43(3): 1759-1764.
- Gilani, S.A., Qureshi, R.A., Khan, A.M., Ullah, F., Nawaz, Z., Ahmad, I. and Potter, D. 2011. A molecular phylogeny of selected species of Genus *Prunus* L. (Rosaceae) from Pakistan using the TRN-L & TRN-F spacer DNA. African Journal of Biotechnology Vol. 10 (22): 4550-4554.
- Bhatti, M. I., Tabassum, K. A. and Firoza, K. 2011. New records of Mesorhabditidae (Nematoda: Rhabditida) from different habitats of Sindh and Punjab, Pakistan. Pak. Journ. Nematol. 29(2): 119-137.
- Musakhail, S.W., Jiskani, M.M. and Bhatti, M.I. 2011. Growth and Yield of Oyster Mushroom (*Pleurotus Ostreatus*) as affected by Gram Powder amendment in substrate. Pak. Journ. Phytopathol. 23(1): 35-41.
- Munir, S., Qureshi, R.A. 2011. Diversity of Fungi/gilled mushroom Genus *Coprinus*. Online Journal: Biological Diversity and Conservation. Biodicon, Pp: 160-180.

### 1.1.5 Training Workshop Organized

BSD, PMNH organized a one day Training Workshop on Collection, Preservation and Identification of Plant Diversity for the teachers of various colleges and educational institutions. Some 68 teachers from the Rawalpindi, Islamabad, Abbottabad and Kohat attended the training workshop. Majority of the participants were female teachers. They received hands-on training in the field as well in the lab.

### 1.1.6 Seminars/Trainings/Workshops Attended

- Two BSD officers attended an International Conference “Biodiversity is our Life” at Shah Abdul Latif University, Khairpur on 29-31 December and presented their research papers.
- Director BSD participated and presented research paper in the 1<sup>st</sup> National Phycological Conference at Department of Botany, GC University Lahore from 30-31 March, 2011.



### 1.1.7 Services Rendered to other Organizations

- Evaluated 4 Ph. D. and 8 M. Phil. theses and carried out viva-voce of students of Department of Plant Sciences, Quaid-i-Azam University.
- Supervised Ph. D. thesis research of 2 students of Quaid-e-Azam University.
- Reviewed 3 research articles for African Journal of Biotechnology.

### 1.1.8 Higher Studies

- Dr. S. Aneel Ahmed Gilani, Research Associate, BSD, obtained Ph. D. degree in Plant Sciences from the Department of Plant Sciences, Quaid-i-Azam University, Islamabad.

## 1.2 Earth Sciences Division

### 1.2.1 Field Work

- PMNH geologists carried out 6 field works in Neelum Valley, Leepa valley, district Khushab, Namal area, Mianwali, Swat, Bunair and Shangla for the collection of rock and fossil samples. They collected over 500 rock and fossil samples, which were identified, catalogued and deposited the in PMNH geological reference collection.
- One day field trip was carried out with the students of Bahria University, Islamabad to impart them practical knowledge of working in the field. PMNH geologists along with the students visited the localities of Gunda Kas and Dhok Pathan areas.
- PMNH geologists visited Chinji, Bhilomar and Kallar Kahar areas with Geo television team for recording of program “Geo Ajuba”. In this program Geo team was told about the evolution of vertebrates and method of finding fossils in the field and their preservation.

### 1.2.2 Laboratory Work

- Identified 150 rock samples and 500 vertebrate fossils.
- Took morphometric data of 15 *Trapelus* specimens and 08 specimens of new reptile species of genus *Mediodactylus*
- Collected enamel hypoplasia data from 30 Rhino fossils under the project “Comparative Studies on Enamel Hypoplasia in Siwalik Rhinoceroses.
- Carried out cataloguing of 100 rock samples during pervious years.
- Selected about 10 chromite samples dispatch to Granada University, Spain for laboratory studies. 646 samples have been clean, washed and catalogued.

### 1.2.3 Publications

- Iqbal, N. 2010. On the Paleoclimate and Paleogeography of Permian Rocks of the Salt Range, Pakistan. *Journ. Himalayan Earth Sciences* 43: 33– 33.
- Antoine, P.O., Downing, K. F., Crochet, J. Y., Duranthon, F., Flynn, L., Marivaux, J, Matais, L., Rajpar, A, R. and Roohi, G. 2010. A reservation of *Aceratherium blanfordi*



- Lydekker, 1884 (Mammalia: Rhinocerotidae) from the early Miocene of Pakistan: Postcranials as a key. Zoological Journ. Linnean Society, London. 160: 139 – 194
- Dhuime. B., Bosch, D., Garrido, C.J., Bodinier, J. –L., Bruguier, O., Hussain, S.S., Dawood, H., 2009. Geochemical architecture of the lower- to middle – crustal section of a Paleo-island arc (Kohistan Complex, Jijal-Kamila area, Northern Pakistan): Implications for the evolution of an oceanic subduction zone. Jour. Petrology. 50(3):531 – 569.
  - Heuberger, S., Celerier, B., Burg, J.– P., Chaudhry, M.N., Dawood, H., & Hussain, S.S., 2010. Paleostress regimes from brittle structures of the Karakoram-Kohistan suture zone and surrounding areas of NW Pakistan. Jour. Asian Earth Sci. 38: 307 – 335.
  - T. Bruhwiler, Hugo. B., David. W, Elke. H., Peter. H., Roohi, G., Aamir, Y., Rehman, K. 2010. Smithian (Early Triassic) Ammonoids from the Salt Range, Pakistan. Special paper, Journal of Paleontology. Pp. 1- 226.
  - Antoine, P.-O., Métais, G., Orliac, M.J., Crochet, J.-Y., Flynn, L.J., Marivaux, L., Rajpar, A.R., Roohi, G. & Welcomme, J.-L. In press (2011). Mammalian Neogene biostratigraphy of the Sulaiman Province, Pakistan. In: M. Fortelius, L.J. Flynn & Wang Xiaoming (eds.), Mammalian Neogene stratigraphy, Columbia University Press.
  - Elke Hermann, Peter A. Hochuli, Hugo Bucher, Thomas Brühwilera, Michael Hautmann, David Ware, G. Roohi. In press (2011). Terrestrial ecosystems on following the end-Permian mass extinction. Gondwana Res. (2011), doi:10.1016/j.gr.2011.01.008 (1342-937 Published by Elsevier B.V. All rights reserved. Contents lists available at Science Direct, Gondwana. Research Journal homepage: [www.elsevier.com/locate/gr](http://www.elsevier.com/locate/gr))

#### 1.2.4 Training Workshop Organized

- Training Workshop on Gemstone Identification and Evaluation: ESD, PMNH, in collaboration with Pakistan Gems and Jewelry Development Company (PGJDC), Karachi, organized 3 Days Training Workshop on Gemstone Identification and Evaluation at PMNH. About 70 participants from public and private sectors participated in this training workshop. They practically learned how to identify gemstones on microscopes along with different aspects of theoretical identification of gemstones.
- Workshop on Civil Engineering Materials-Rocks/Minerals at NUST: Earth Science Division of PMNH organized 2-days workshop on Civil Engineering Materials-Rocks/Minerals at the School of Civil and Environmental Engineering, NUST, Islamabad. PMNH geologists presented lectures on the geology of Pakistan, identification of minerals and geological structures (geometry of rocks).

#### 1.2.5 Seminars/Trainings/Workshops Attended

- Participated in 1 day Teachers Training workshop organized by Gujranwala Arts Council. A documentary on *Baluchitherium* was shown. An exhibition on the fossils of Pakistan was also arranged in the GAC art gallery.

- One officer acquired five days training in Effective Project Management from Pakistan Planning and Management Institute, Islamabad on 7th-11th March 2011.
- Four officers participated in Training of Master Facilitators for Traveling Expo Biodiversity is Life, organized by PSF, French Embassy and Scientific, Technical, Industrial and Cultural Centre (CCSTI), France.

### **1.3 Zoological Sciences Division**

#### **1.3.1 Field Work**

- The Zoologists of PMNH conducted 12 field works in various localities of Gilgit-Baltistan, Ziarat District, Baluchistan; Azad Jammu and Kashmir including Neelum-Jhelum Hydroelectric Power Project area; Thar Coal Mines, District Tharparkar; for the collection animal specimens and field data.
- As a result of MoU signed between Zoological Survey Department (ZSD) and PMNH all preserved and stuffed animal samples of ZSD were transferred to PMNH along with relevant data, catalogue registers, storage cabinets etc. The collection was housed at Zoological Sciences Division of the PMNH. The addition of these samples greatly strengthened the Zoological reference collection of PMNH.
- Carried out field studies on the fish fauna of Logar River areas, Afghanistan in collaboration with Hagler Bailly-Pakistan.
- Conducted 4 days studies to monitor the impact of insecticides and pesticides on the biodiversity in cotton crop (WWF Project).
- Visited the study site "Mangla Reservoir" for establishment of Mahasher fish national park in AJK in the capacity of one of the stakeholders

#### **1.3.2 Laboratory Work**

- Identified and Cataloged 580 zoological samples including invertebrates and vertebrates.
- Carried on with the sorting and cataloguing of the invertebrate collection brought from Zoological Survey Department to PMNH. Sorted and catalogued 200 jars and 9974 specimens.
- Carried on with the sorting and cataloguing of the invertebrate collection brought from Zoological Survey Department to PMNH. Sorted and catalogued 760 jars and 30,421 specimens.
- Rearranged marine invertebrate collection and classified 604 jars containing 10,000 specimens.
- Cataloged 230 specimens of different insect orders/ families/subfamilies/genus.

#### **1.3.3 National Collaborative Projects**

- "Biodiversity of Wetlands of Pakistan" (Pakistan Wetland Project, WWF-Pakistan)

- “Environmental Impact Assessment in Best Management Practices Cotton fields at Sukkur, Ghotki and Bahawalpur”. (Pakistan Sustainable Cotton Initiatives and World Wide Fund for Nature Pakistan).
- Collaborative research programme with Hagler Bailly- Pakistan on the Ecology and Biodiversity of various areas of Pakistan.

#### 1.3.4 National Research Projects and Reports

- Studies on algae of major rivers of Punjab (Pakistan) with special emphasis on its consumption by economically important fishes. Continued PSF -funded project.
- Prepared and submitted 20 baseline study reports to WWF, Pakistan Wetlands Programme and Hagler Bailly-Pakistan, under collaborative programmes with these organizations.

#### 1.3.5 Publications

- Mahmood, K., Papp, J. and Quicke, D. 2010. Two new Afrotropical genera of Braconine wasp (Hymenoptera: Braconidae) with two new species. *Zootaxa*.2476:14-22
- Feroze A., Malik S.A. and Kilpatrick W. C. 2010. Phylogenetic relationships of medically important vipers of Pakistan inferred from Cytochrome *b* sequences. *Journ. Animal & Plant Sciences*, 20(3): 147-157.
- Nadeem, M.S. Mahmood, T., Asif, M, and. Hassan, M.M., (2011): Annual Reproductive Success of the Hoopoe Lark *Alaemon alaudipes* in Nag Valley (1999-2001), Kharan, Pakistan. *Pakistan Journal of Zoology*, vol. 43 (2), pp. 279-284, 2011.
- Masroor, R. 2011. The Bronze-back tree snake, *Dendrelaphis tristis* (Daudin, 1803): an addition to the herpetofauna of Pakistan. Accepted in *Pakistan Jour. Zool.*
- Mahmood, K. & Mishkat Ullah. 2011. Addition to the knowledge of Taxonomy and Biology of *Arge simlaensis* (Cameron) (Argidae: Hymenoptera) in rainfed Conditions of Punjab. *Pakistan Journal of Zoology* 43(4), pp.821-823.
- Mahmood, K., Jeno Papp, J. & Donald L.J. Quicke. 2011. A new Afrotropical genus *Doggerella* gen. nov. of braconine wasp (Hymenoptera: Braconidae) with twelve new species. *Zootaxa* 2927: 1–37.  
<http://www.mapress.com/zootaxa/2011/f/z02927p37f.pdf>

#### 1.3.6 Training Workshop Organized

##### International Training workshop on “Modern Research Techniques in Ecology:

A five-day international training workshop on Modern Research Techniques in Ecology held in Quaid-i-Azam University, was arranged by ZSD, PMNH in collaboration with Pakistan Science Foundation; Department of Animal Sciences, Quaid-i-Azam University, and Snow Leopard Foundation Pakistan. Some 49 persons from a number of research institutions, provincial Wildlife departments and universities attended. The resource persons were invited from national and international research institutions. This workshop aimed capacity building of the

participants in designing ecological studies and analysis of simple-to-complex ecological data with the help of different statistical models and field techniques.

### **1.3.7 MoUs Signed/Prepared**

- A MoU was signed between Hagler Bailly- Pakistan (HBP) and PMNH which aims to establish collaboration between the two organizations for the survey of biodiversity of various areas of Pakistan.
- Zoological Sciences Division, PMNH, has prepared and submitted to PSF the draft of the MoUs to be signed between Snow Leopard Trust and PMNH for future collaborative ecological and wildlife studies.

### **1.3.8 Seminars/Trainings/Workshops Attended**

- Director ZSD, attended a symposium on “Conservation of Fisheries Resources of Chashma Barrage”, organized by Punjab Fisheries Department at Chashma Barrage on 14<sup>th</sup> June 2011.
- One officer completed four days training entitled “Case Study Methods” on 21<sup>st</sup> -24<sup>th</sup> June 2011 at Pakistan Planning and Management Institute, Islamabad.

### **1.3.9 Higher Studies**

- Dr. Ahsan Feroze Research Associate, ZSD has been awarded Ph. D. degree in Biology from the Department of Biology, Quaid -i-Azam University, Islamabad.

### **1.3.10 Services Rendered to other Organizations**

- A scientist of ZSD has been selected as editorial board member of “Hamadryad”, a biannual journal of the Madras Crocodile Bank Trust and Centre for Herpetology.
- In connection with the in-house lecture series, PMNH invited guest speakers of the Hunza valley who delivered lectures on the efforts of the inhabitants of the area for the conservation of the Snow Leopard. A documentary on a Snow Leopard captured by these people, its stay in captivity and ultimate release in its wild habitat was also shown.

## **1.4 Public Sciences Division (Public Education and Display)**

### **1.4.1.1 Stalls/Exhibits Organized**

- PMNH organized a stall at Capital Development Authority Environment Exhibition during opening ceremony of Spring Tree Plantation 2011, for creating awareness in general public about the importance of biodiversity.



- PMNH displayed a stall on the occasion of “Spring Flower Festival, 2011” jointly organized by The National Horticultural Society of Pakistan and the Department of Horticulture, PMAS Arid Agriculture University, Rawalpindi, from 30<sup>th</sup> March to 3<sup>rd</sup> April. It was inaugurated by Mr. Sardar Latif Khosa, Governor of the Punjab. The Governor appreciated the activities carried out by PMNH.
- One day exhibition on “Mineral Deposits of Pakistan and its potential” was organized by PMNH at National Institute of Civil Engineering (NICE), National University of Science & Technology (NUST), Islamabad on 24<sup>th</sup> May 2011.

#### **1.4.2 Important Visits**

- Secretary Ministry of Science & Technology Mr. Irfan Nadeem Sayeed visited PMNH January 7, 2011. He visited display galleries and natural history repositories of PMNH. He appreciated PMNH scientists’ efforts on natural history specimen collection, research and their display.
- A French delegation, who was in Pakistan in connection with an Expo on Biodiversity, visited PMNH on January 10, 2011. The delegation visited different galleries of the museum and took keen interest in various displays. They appreciated the educational and research activities of PMNH.
- Vice Chancellor of Khairpur University, Sindh. Professor Dr. Nilofar Sheikh, visited PMNH in February. She discussed the possibilities to establish research collaboration between the university and PMNH.
- Secretary General, ECO H.E. Mr. Mohammad Yahya P. Maroofi, along with his delegation, visited PMNH on 2nd March, 2011 and took keen interest in the activities performed by the PMNH.
- Mr. Pervez Butt, former Secretary of Ministry of Science and Technology (MoST) visited PMNH on March 10, 2011.
- Mr. Zafar Ullah Baloch, Secretary, Live Stock, Balochistan, visited PMNH on April 2, 2011. He visited the display galleries and laboratories of PMNH. He also held a meeting with BS-19 and above officers of PMNH to explore the avenues of cooperation between PMNH and Balochistan Live Stock departments.

#### **1.4.3 Educational Trips**

- A group of 40 students and 10 teachers from Global Children Network (CGN), Pakistan, visited PMNH on July 18, 2010. The visit was a part of exchange programme for the students of public schools in collaboration with FATA Secretariat.
- Thirty participants of a 4-week Master Teachers Trainer Training Programme were guided through the Display Galleries of PMNH in July, 2010. The participants of the programme included teachers from AJK, FATA, Gilgit-Baltistan and Islamabad Capital Territory.
- Students from Adventure Foundation, Peshawar University, The Educators, National College of Arts Rawalpindi Campus, Cambridge School Islamabad, Government College Jhelum, Al-Huda International School, FG College for Women F7/4 Islamabad, Holy Family Hospital Rawalpindi and University of AJK Muzaffarabad visited PMNH.

- The participants of 11<sup>th</sup> Mid Career Management Course, National Institute of Management (NIM), Quetta, visited PMNH on April 30, 2011 as a part of their In Land Study Tour. PMNH scientists briefed the visiting officers about the museum functions, achievements and future plans.
- The participants of two-day Science Media Forum “Where Science and Media Meet” organized by PSF visited PMNH on May 29, 2011 to get firsthand information about the museum functions and achievements. A documentary on Biodiversity issues was screened for the guests.

#### **1.4.4 Public Education Through Media**

- Recorded interviews for Voice of America Urdu Service about the role of PMNH in enhancing awareness about the natural resources of the country.
- Director General, PMNH appeared in an interview for Dunya TV Live on the occasion of International Day of Butterflies. In the interview he highlighted the important role of butterflies in Biodiversity.
- Director General, PMNH elaborated the role of PMNH in enhancing public awareness on the importance of biodiversity of Pakistan and its conservation an interview for Samaa TV.
- Islamabad Dateline published a news article on PMNH on 4th March 2011. In this article information about the establishment of museum, exhibited specimens, dioramas and research activities of PMNH were given.

#### **1.4.5 Number of Visitors to Display Galleries**

- About 9000 persons visited the PMNH Display Galleries, which included about 65% students and 45% general public, including about 30 foreigners.
- PMNH arranged film shows on natural history during the visit of various groups of students to PMNH.

### **2.0 INTERNATIONAL LIAISON**

International collaboration with Global Biodiversity Information Facility (GBIF) was continued.

### **3.0 PLANNING AND DEVELOPMENT**

Revision of PC-I on PMNH was started.

### **III. PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE (PASTIC)**

## **1.0 Aims & Objectives**

- To acquire, process and disseminate scientific and technological information to the researchers.
- To provide bibliographic information service and document supply service.
- To interact with regional and international S & T information agencies/networks.
- To develop inter-library cooperation, resource sharing at national level.
- To train information personnel in contemporary techniques and methods of information handling.
- To develop and strengthen the National Science Reference Library.
- To compile and publish reference information publications.

## **2.0 Activities and Services**

PASTIC is a multidisciplinary national S&T information centre and its services and activities are aimed at fulfilling needs of its users by providing the latest information in all fields of Science & Technology. The activities undertaken during the period, July 2011 to June 2012 are briefly described below:

### **2.1 Document Procurement and Supply Service**

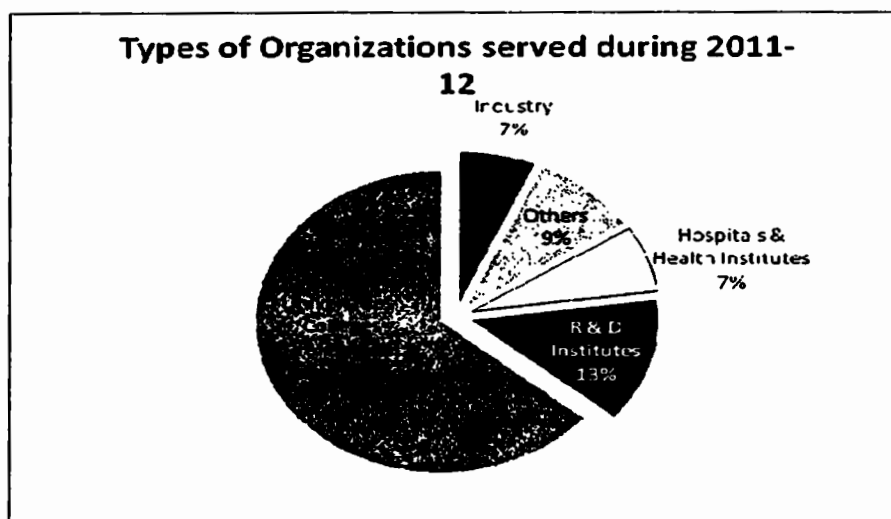
Under the Document Procurement and Supply Service, requests were received from different R&D organizations for supply of reprints of research articles, conference papers and reports, etc. In order to fulfill the demand of clients' reprints of 831 articles were procured either from local sources or from abroad, and supplied to 360 researchers during the year 2011-12. Major user organizations included Quaid-i-Azam University, Islamabad; Pir Mehr Ali Shah-Arid Agriculture University, Rawalpindi; Azad Jammu and Kashmir University, Muzaffarabad; National University of Science & Technology, Islamabad; PCSIR Labs; NIAB, Faisalabad; University of Punjab, Lahore, University of Balochistan, Quetta; University of Karachi, Karachi ; University of Agriculture, Faisalabad; Abbott Laboratories Karachi; Federal Urdu University of Arts, Science & Technology, Karachi; Jinnah Postgraduate Medical Centre, Karachi; NED University of Engineering & Technology, Karachi; University of Peshawar, Peshawar; Sanofi-aventis Pharmaceutical Pakistan Limited, Karachi; BUIITEMS, Quetta; Sardar Bahadur Khan Women University, Quetta; University of Sindh, Jamshoro; Agriculture College, Quetta; Nuclear Institute for Food and Agriculture, Tarnab, Peshawar; National Centre of Excellence in Physical Chemistry, Peshawar; KPK Agricultural University, Peshawar; KPK University of Engineering & Technology, Peshawar; Government College University, Lahore; University of Engineering & Technology, Lahore; King Edward Medical



University, Lahore; National Development Complex, Islamabad and National Textile University, Faisalabad. The Union Catalogue of the S&T libraries of Pakistan compiled by PASTIC was mainly used for locating the literature available in local libraries. The major local sources and libraries contacted for cooperation and sharing their resources in providing literature included.

1. Aga Khan University, Karachi
2. Allama Iqbal Medical College, Lahore
3. Ayub Agricultural Research Institute, Faisalabad
4. HEJ Research Institute of Chemistry, Karachi
5. Institute of Public Health, College of Community Medicine, Lahore
6. Kahuta Research Laboratories, Rawalpindi
7. KPK Agricultural University, Peshawar
8. LEJ National Science Information Centre, Karachi
9. National Agricultural Research Centre, Islamabad
10. National Institute of Health, Islamabad
11. Nuclear Institute for Agriculture & Biology, Faisalabad
12. Nuclear Institute for Food & Agriculture, Peshawar
13. Pakistan Forest Institute, Peshawar
14. Pakistan Medical Research Council, Islamabad
15. PCSIR Laboratories, Lahore
16. PCSIR Laboratories, Peshawar
17. PINSTECH, Islamabad
18. Quaid-i-Azam University, Islamabad
19. Sheikh Zayed Hospital, Lahore
20. University of Agriculture, Faisalabad
21. University of Karachi, Karachi
22. University of Peshawar, Peshawar
23. University of the Punjab, Lahore

For foreign procurement of articles mainly British Library is used. To expedite the procurement process PASTIC uses e-mail contacts so that information delivery is quick and delays are minimized. Major breakup of the types of user organizations is as follows:



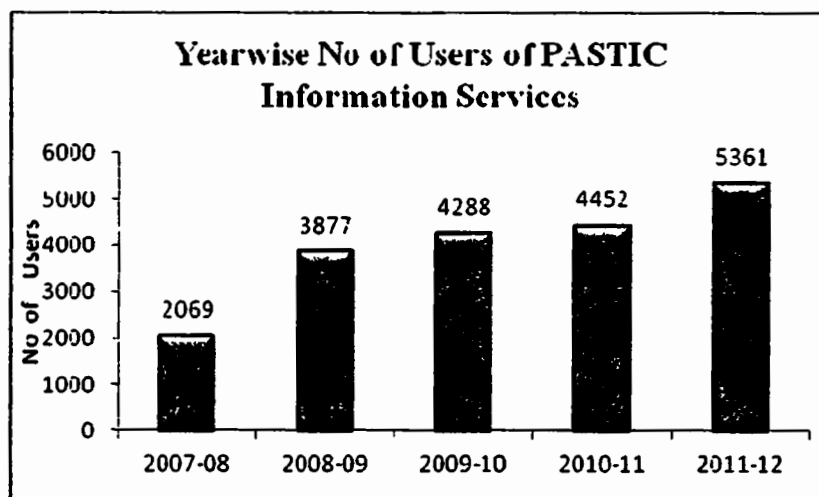
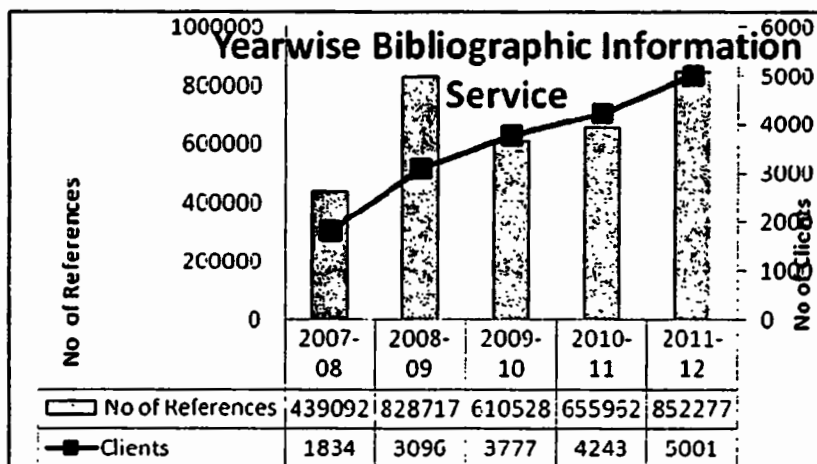
## 2.2 Bibliographic Information Service/Literature Search

PASTIC has access to international online and offline S&T databases. Literature search is carried out for searching abstracts / references from these databases and supplied to users according to their research topics on request. A total of 852,277 abstracts/references on various S&T topics were supplied to 5001 research workers and other users during the period under review from the following databases.

1. Medline (Health & Medicine)
2. Life Science (Biology)
3. Poltox (Pollution & Toxicology)
4. Wilson Applied Science & Technology (Applied Sciences & Engineering)
5. Derwent Biotech. Abstracts (Biotechnology)
6. Proquest (Full text) (Physics)
7. INSPEC (Physics)
8. Sociological Abstracts (Sociology)
9. Sociofile (Sociology)
10. Science Citation Index
11. Compendex Site Enhance (Engineering & Technology)
12. Ulrich's International Periodical Directory
13. CSA Pollution Abstract Online (Environmental Pollution)
14. Current Contents: Physical, Chemical & Earth Sciences

In order to strengthen bibliographic information service and information resources of PASTIC and its Sub-Centres, following online bibliographic databases were subscribed/purchased for the year 2012-13.

1. FSTA: Food Science and Technology Abstracts
2. Biological and Agricultural Index Plus
3. CSA: TOXLIN
4. Wilson Applied Science and Technology Full Text
5. Wilson Social Sciences Full Text
6. IPA: International Pharmaceutical Abstracts.



### **2.3 Abstracting and Indexing Service**

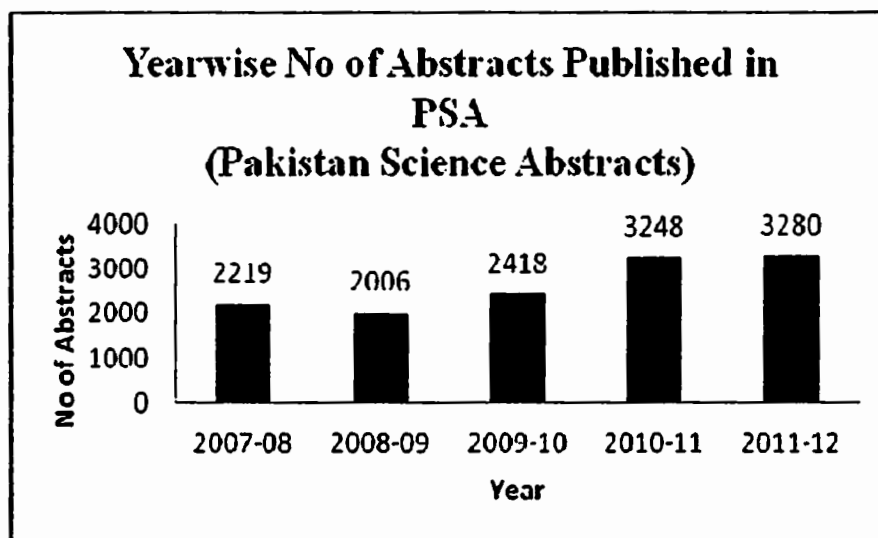
PASTIC provides abstracting and indexing service by publishing an abstracting journal entitled “Pakistan Science Abstracts” in ten different scientific disciplines, which serves as a secondary information source to give support to research and development activities in the country. The scientific information generated in Pakistan or abroad and published in Pakistani S&T journals is documented in the form of abstracts along with detailed author index and keyword index in this secondary journal.

In this digital age of technology, the use of information technology for information management has transformed the whole process of information collection and retrieval. The direct access to information through World Wide Web has made a huge amount of information and data easily available to anyone with a personal computer and internet facility. Keeping in view this change, PASTIC has developed an online in house database of the research published in Pakistan for provision of its abstracting and indexing service and publishing online version of Pakistan Science Abstracts (PSA) along with printed version.

During the period under view 3280 research articles were identified and collected for abstracting and indexing service and publishing PSA 2011 under following 10 different scientific disciplines.

- PSA Agricultural Sciences, 2011, Vol.49-A
- PSA Animal Sciences, 2011, Vol.49-D
- PSA Biochemistry & Biotechnology, 2011, Vol.49-B
- PSA Chemical & Pharmaceutical Sciences, 2011, Vol.49-C
- PSA Earth & Environmental Sciences, 2011, Vol.49-E
- PSA Information Communication & Engineering Sciences, 2011, Vol.49-I
- PSA Mathematics & Statistics, 2011, Vol.49-G
- PSA Medical Sciences, 2011, Vol.49-H
- PSA Physics, 2011, Vol.49-F
- PSA Plant Sciences, 2011, Vol.49-J





Data entry process during the period under review remained in progress. 1800 Abstracts were scanned, downloaded and entered in the database.

The printed version of PSAs will be distributed among S&T and R&D organizations and academic institutions as part of information dissemination activity. These subject wise PSAs will be quite useful for diverse nature of users.

#### **2.4 Technology Information Service**

Technological Information Service is aimed at facilitating growth, potential and competitiveness among SMEs at national and international level, build effective coordination between R&D Sector and Industry for enhancing Innovations, Competitiveness and development & promotion of indigenous technologies and organizing Technology based exhibitions and seminars to promote Science & Technology. This service is rendered by Technology Information Section for R&D Workers, Engineers and Entrepreneurs, SMEs and Industrialists. PASTIC initiated a programme of University Industry Partnership (UIP) under its Technology Information Service for building effective linkages between universities R&D Institutions and Industrial Sector. Under this programme following Seminars, Symposia and Exhibitions were organized along with other relevant activities.

- ⌘ A UIP Seminar on “Access to Global Information Resources through PASTIC S&T Information Services & Importance of Patents in Research & Development (R&D)” was organized at Khyber Pakhtunkhwa Agricultural University, Peshawar on September 10, 2011.
- ⌘ A UIP Seminar on “Veterinary Vaccines in Pakistan” was organized at Pakistan Science Foundation, Islamabad on October 25, 2011.
- ⌘ A conference on “Power Generation & UIP Exhibition on Innovative Energy Solutions” was organized at Marriott Hotel, Karachi on February 2, 2012.
- ⌘ A UIP Seminar on “Sustainability in Process Industries (SPI 2012)” was organized at KPK University of Engineering & Technology, Peshawar on March 28, 2012.
- ⌘ A UIP Symposium on “Technologies for Citrus Fruits and Pulses Processing” was organized at Sargodha Chamber of Commerce & Industry (SCCI), Sargodha on April 7, 2012.
- ⌘ A “UIP-S&T (Science & Technology) Pavilion” was organized on the occasion of Islamabad Expo 2012 at Jinnah Convention Centre, Islamabad with the collaboration of Islamabad Women Chamber of Commerce and Industry on April 7-8, 2012.
- ⌘ A UIP-Exhibition & Symposium on “Technologies (R&D) for Rice Sector” was organized at Gujranwala Chamber of Commerce and Industry (GCCCI), Gujranwala on May 7, 2012.
- ⌘ PASTIC collaborated with National Forum for Environment and Health (NFEH) as the strategic partner in organizing the “3rd Corrosion and Pipeline Integrity Management Conference 2012” at Marriot Hotel, Karachi on May 17, 2012.

A bimonthly Trade and Technology news bulletin entitled “Technology Roundup” was published and five issues of this news bulletin were brought out online.

## **2.5 Research & Industrial Linkages and Information Resource Sharing (MoUs Signed)**

PASTIC had produced local documentaries in Urdu under its completed Science Awareness Project (2004-2007) and had also acquired documentaries from abroad which were got dubbed in Urdu. In view of the need of dissemination of scientific information contained in these documentaries for awareness and better understanding of scientific concepts by general public for benefiting from this source of knowledge, PASTIC signed an MoU with M/S Ariel Media Services (Pvt) Ltd for airing these S&T documentaries on TV Channels free of cost.

Another MoU was signed by PASTIC with M/S Recto International (a private printing company) for a joint venture under its public private partnership program. The objective of having this MoU with the private sector was to address the issue of commercialization

initiated by MoST and to enhance the PASTIC printing services and improve its financial resources as a step forward to self sustainability.



*Dr. Khalil Ahmad Ibupoto, D.G . PASTIC and  
Mr. Amanullah, CEO, Recto International  
signing MoU*

*Dr. Khalil Ahmad Ibupoto, D.G. PASTIC and  
Mr. Adnan Shaukat, CEO, Ariel Media Services  
(Pvt) Ltd., signing MoU*

## **2.6 PASTIC National Science Reference Library**

PASTIC National Science Reference Library is aimed at providing reference and referral services to the users and strengthening of all the services of PASTIC particularly document supply service, bibliographic information service, abstracting and indexing service, technological information service, etc. In this context strengthening of library resources, acquisition of published library material and library automation activity remained in progress. PASTIC library has built up a collection of more than 8,825 books on natural & applied sciences, over 1575 titles of national & international S&T journals and 9100 miscellaneous documents and reports.

During 2011-12, a total 519 users/researchers visited PASTIC Library for reference purpose, reading, photocopying services and internet browsing. Besides, library received 637 issues of different national and international journals. In addition 125 books, 54 reports, miscellaneous documents were received, acquired, processed and shelved for use. A two days book exhibition was arranged by PASTIC Library at PASTIC for providing a platform to Book Industry, readers and scientific community for interaction among each others and disseminating documented knowledge. Free internet service for students was also made available by the Library. 12 issues of library bulletin of fresh arrivals was regularly published on monthly basis during the period under review and distributed among relevant circles.



## 2.7 PASTIC Information Service Stalls

43 PASTIC Service Stalls were arranged in Karachi, Jamshoro, Larkana, Nawabshah, Faisalabad, Lahore, Quetta, Muzaffarabad (AJK), Peshawar and Islamabad at various departments of different Universities and R&D Institutions on different occasions. The aim of organizing the service stalls was to provide S&T information services at the doorstep of the Universities and other institutions to facilitate faculty members, researchers and R&D workers. Detail of these Stalls is as follows:

### Karachi

Sr.#	Date	Venue
1.	01-02-2012	HEJ Research Institute of Chemistry, University of Karachi, Karachi.
2.	02-02-2012	Marriott Hotel, Karachi at the occasion of "Conference on Power Generation & UIP Exhibition on Innovative Energy Solutions."
3.	17-05-2012	Marriott Hotel, Karachi at the occasion of "3 <sup>rd</sup> Corrosion & Pipeline Integrity Management Conference 2012".
4.	24-05-2012	National Nematological Research Centre, University of Karachi, Karachi.
5.	02-06-2012	University of Karachi, Karachi.
6.	23-06-2012	University of Karachi, Karachi.

### Jamshoro

Sr.#	Date	Venue
7.	27-29.2. 2012	Mehran University of Engineering & Technology, Jamshoro, Sindh.
8.	25-04-2012	Mehran University of Engineering & Technology, Jamshoro, Sindh.

### Larkana

Sr.#	Date	Venue
9.	25-06-2012	Shaheed Benazir Bhutto Medical University, Larkana

### Nawabshah

Sr.#	Date	Venue
10.	05-07.3. 2012	Quaid-e-Awam University of Engineering, Science & Technology, Nawabshah, Sindh.



### Faisalabad

Sr.#	Date	Venue
11.	19-22.10. 2011	University of Agriculture, Faisalabad on the occasion of "Kisan Mela".
12.	21-23.11.2011	University of Agriculture, Faisalabad on the occasion of "10 <sup>th</sup> International Conference on Chemistry".
13.	28-30.11. 2011	Ayub Agricultural Research Institute, Faisalabad at the occasion of "Book Fair".
14.	26-01-12	National Textile University, Faisalabad.
15.	07-02-12	Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad.
16.	15-02-12	National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad.
17.	25-04-12	Faculty of Agriculture, University of Agriculture, Faisalabad.
18.	26-04-12	Faculty of Science, University of Agriculture, Faisalabad.

### Lahore

Sr.#	Date	Venue
19.	16-10-2011.	Ambassador Hotel, Lahore.
20.	22-11-2011.	Iqra University, Raiwind Road, Lahore.
21.	25-11-2011.	Beacon House National University, Raiwind Road, Lahore.
22.	07-01-2012.	Sheikh Zayed Islamic Centre, University of the Punjab, Lahore.
23.	20-02-2012.	Government College for Women University, Lahore.
24.	28-02-2012.	University of Management Sciences, Lahore.
25.	29-02-2012.	Government Islamia College, Gujranwala.
26.	05-03-2012.	University of Lahore, Defense Road, Lahore.

### Quetta

Sr.#	Date	Venue
27.	10-11.10. 2011	Balochistan University of Information Technology, Engineering and Management Sciences, Takatu Campus, Baleli Quetta at the occasion of "World Space Week".
28.	18-10-2011	Sardar Bahadur Khan Women University, Quetta

### Azad Jammu & Kashmir

Sr.#	Date	Venue
29.	14-07-2011	University of Poonch, Rawalakot, AJK
30.	15-07-2011	University of Poonch, Rawalakot, AJK
31.	12-10-2011	University of Azad Jammu & Kashmir, Muzaffarabad, AJK (City Campus)
32.	10-11-2011	Department of Chemistry, University of Azad Jammu & Kashmir, Muzaffarabad, AJK (New Campus)

33.	09-02-2012	Mirpur University of Science & Technology, Mirpur , AJK
34.	20-03-2012	Kashmir Information Resource Centre, University of Azad Jammu & Kashmir, Muzaffarabad, AJK (New Campus)

#### Peshawar

Sr.#	Date	Venue
35.	21-23.11.2011	Khyber Pukhtunkhwa Agricultural University, Peshawar.
36.	16-11-2011	Department of Zoology, University of Peshawar, Peshawar.
37.	17-11-2011	Abasyn University, Peshawar
38.	30-01-2012.	Institute of Education & Research (IER), University of Peshawar, Peshawar.
39.	31-01-2012	Institute of Education & Research (IER), University of Peshawar, Peshawar.
40.	10-03-2012	Khyber Pukhtunkhwa Agricultural University Peshawar, Peshawar.
41.	28-03-2012.	Khyber Pukhtunkhwa University of Engineering & Technology Peshawar, Peshawar.

#### Islamabad

Sr.#	Date	Venue
42.	23-11-2011	COMSATS Institute of Information Technology, Islamabad
43.	13-14.12.2011	PASTIC National Centre, Islamabad at the occasion of "Books Exhibition".

PASTIC Services received a big boost through these stalls and a large number of users availed the services.

## **2.8 Reprographic Service**

The Reprographic Section of PASTIC has facilities ranging from photocopying to offset printing for its own printing requirements and for providing printing services to other S&T organizations. During the year 2011-12 about 115 printing jobs were carried out for 08 R&D organizations.

PASTIC is also in the process of strengthening its Reprographic Services (Printing Press) through a development project entitled "Strengthening and Enhancement of the Reprographic Services of PASTIC". Main objective of the project is enhancing the printing quality and capability of PASTIC press by introducing state of the art new machinery and equipment. In this regard supply order was issued for purchase of Heavy Duty Printing Machine after

completing all codal formalities. Renovation work of Reprographic Unit for installation of Heavy Duty Printing Machine was done. Air Conditioners were purchased and installed in the Reprographic Unit for creating suitable working and operating environment for this Heavy Duty Printing Machine. This state of the art new Heavy Duty Printing Machine will be helpful in enhancing the printing quality and capability of PASTIC press.

### **3.0 International Liaison**

PASTIC is the National Focal Point of some Regional/International Information Centres and Networks viz. SAARC Documentation Centre, WHO/CEHANET, IFAP and National distributor for UNESCO developed library management software WINISIS and IDAMS. The following collaborative activities were carried out during the year 2011-12.

#### **3.1 UNESCO**

PASTIC is responsible for the distribution of UNESCO developed software/package such as WINISIS and IDAMS as well as provides training on this package and ABCD (Automation of Libraries and Documentation Centres) which is a multilingual, open source, web application for the management of libraries. WINISIS Package was supplied to 103 librarians and information professionals during the year 2011-12. Besides, two workshops were organized for providing training on this WINISIS package and ABCD software.

#### **3.2 SAARC Documentation Centre (SDC)**

It is a regional centre of SAARC acting as an effective information system of Member States for exchange of information in various fields of S&T. SDC also develops human resource in the Member States in the area of information science, technology, management systems and services. In this regard following activities were undertaken during the year 2011-12.

- Activities of exchange of information with SAARC Documentation Centre were carried out for fulfilling the information requirements of Scientists and R&D workers.
- Different titles of research and abstracting journals of 2011 covering major disciplines of science and technology being published by National Institute of Science Communication and Information Resources (NISCAIR) were received free of cost.
- Efforts were made for availing the training opportunities offered by SDC under its Human Resource Development programme. Four employees from PASTIC and Mehran University of Engineering & Technology, Jamshoro were sent for training under SDC training opportunities. One I.T. Professional and one Library Professional of PASTIC availed five weeks training opportunity in Information Technology for



Information Management. Another officer of PASTIC availed one week training on Library Automation using KOHA. One officer of Mehran University of Engineering & Technology, Jamshoro participated in the three months Attachment Training Programme of SDC.

### **3.3 Bilateral Cooperation**

S&T Cooperation proposals were prepared for bilateral cooperation in the field of Information Exchange with Argentine, Brazil, Egypt, Italy, Korea, Norway, Russian Federation and UNESCO.

A concept proposal for financial assistance and cooperation under IDB Country Programming Mission to Pakistan was prepared for capacity building, improving infrastructure development and enhancing human development.

### **4.0 Human Resource Development**

Another important activity of PASTIC is to impart training to information professionals on computer applications for library automation and information management as well as organization of workshops and seminars on related diverse topics. In addition to the Seminars/Symposia mentioned under Technology Information Service the following seminars/workshops/trainings were also organized by PASTIC. Under Human Resource Development Programme 103 Librarians and other Information Professionals were trained for Automation of Library and other Modern Information Handling Techniques.

#### **4.1 Trainings/Workshops/Seminars Organized**

- A seminar on “Access to Global Information Resources through PASTIC S&T Information Services and Importance of Patents in Research and Development” at KPK Agricultural University, Peshawar on September 10, 2011
- A “2-Week Computer Training” for Officers/Staff of PASTIC, PSF and PMNH at PASTIC Islamabad from September 12 – 29, 2011.
- A training workshop on “Library & Information Management” at University of Azad Jammu & Kashmir, Muzaffarabad, from December 14-16, 2011.
- “PASTIC Services Awareness Seminar” at Shaheed Benazir Bhutto Medical University, Larkana on January 23, 2012.
- “PASTIC Services Awareness Seminar” at National Textile University, Faisalabad on January 26, 2012
- “PASTIC Services Awareness Seminar” at Psychology Department, University of Peshawar on January 27, 2012.



- “PASTIC Services Awareness Seminar” at Institute of Education & Research, University of Peshawar from January 30-31, 2012.
  - A one day workshop on “Patent Protections for R&D” at HEJ Research Institute of Chemistry, University of Karachi, Karachi on February 1, 2012.
  - “PASTIC Services Awareness Seminar” at Mirpur University of Science & Technology, Mirpur on February 8, 2012.
  - A training workshop on “Proposal Writing for Research Grants” at KPK University of Engineering and Technology, Peshawar on February 16, 2012.
  - National Training Workshop on Library Automation Package “KOHA” at Islamabad from February 20-24, 2012.
  - “PASTIC Services Awareness Seminar” at University of the Punjab, Gujranwala Campus, Gujranwala on February 23, 2012.
  - 3 Days training workshop on “Scientific Image Processing using Adobe Photoshop” at PASTIC, Islamabad from February 27-29, 2012.
  - “PASTIC Services Awareness Seminar” at International Islamic University, Islamabad on February 29, 2012.
  - A training workshop on “Library & Information Management” at Quaid-e-Awam University of Engineering, Science & Technology, Nawabshah, from March 5-7, 2012.
  - A two days “Introductory Training Workshop on KOHA and D-Space” at Quaid-e-Azam College of Commerce, University of Peshawar, Peshawar from March 29-30, 2012.
  - “PASTIC Services Awareness Seminar” at Agricultural College, Quetta on April 7, 2012.
  - “PASTIC Services Awareness Seminar” at Sardar Bahadur Khan Women University, Quetta on April 9, 2012.
  - “PASTIC Services Awareness Seminar” at Ayub Agricultural Research Institute, Faisalabad on May 10, 2012
  - PASTIC Sub Centre, Karachi collaborated with University of Karachi in organizing a Workshop on “Intellectual Property Rights” at Karachi on June 2, 2012.
  - A “Workshop on Leadership Skills” was organized at PASTIC Islamabad on June 8, 2012
  - “PASTIC Services Awareness Seminar” at Centre for Advance Studies in Vaccination and Biotechnology, University of Balochistan, Quetta on June 15, 2012.
  - PASTIC Sub Centre, Lahore collaborated with PSF in organizing National Level Summit “Invention to Innovation Summit -2012” at University of the Punjab Lahore on June 18, 2012.
  - PASTIC National Centre Islamabad and PASTIC Sub Centres Lahore, Peshawar and Faisalabad celebrated World Science Day for Peace and Development by organizing seminars and service stalls at various Universities and Institutions.
- Two Internees were provided the facility of internship and training in the area of Information Technology by the PASTIC for a period of three months.



*Dr. Masoom Yasinzai, Vice Chancellor, Quaid-i-Azam University in the inaugural ceremony of National Training workshop on Library Automation Package "KOHA"*



*A glimpse of Science & Technology (S&T) Pavilion organized by PASTIC during "Islamabad Expo 2012" at Jinnah Convention Centre*

## 5.0 Publications

Following Publication activities were carried out

- ⌘ Pakistan Science Abstracts (PSAs) 2010 volume 48 was printed in ten different disciplines (Agricultural Sciences, Animal Sciences, Biochemistry & Biotechnology, Chemical and Pharmaceutical Sciences, Earth & Environmental Sciences, Information Communication & Engineering Sciences, Mathematics & Statistics, Medical Sciences, Physics and Plant Sciences). These PSAs were distributed among S&T/R&D Organizations, Universities and PASTIC Sub Centres.
- ⌘ Compilation of Pakistan Science Abstracts (PSAs) 2011 Volume 49 of all ten scientific disciplines remained in progress.
- ⌘ Proceedings of four UIP Symposia on "Building Effective Coordination between R&D and Industry under University Industry Partnership Programme" of PASTIC and IRP held at Rawalpindi, Lahore, Faisalabad & Peshawar and Seminar on "Indigenous Commercialization Potential of Academic Research was compiled.
- ⌘ Proceedings of training workshop on "Library & Information Management" held at University of Karachi from 19-21 April 2011 was compiled
- ⌘ Proceedings of training workshop on "Library & Information Management" held at University of Baluchistan from 3-5 May, 2011 was compiled.
- ⌘ Proceedings of 16 PASTIC Awareness Seminars held during 2010-11 were compiled.
- ⌘ Directory of Scientific Periodicals of Pakistan was updated with addition of 200 new titles.
- ⌘ PASTIC Annual Report of 2010-11 was compiled.
- ⌘ Twelve issues of fresh arrivals of PASTIC Library were published.
- ⌘ Five issues of Trade and Technology news bulletin entitled "Technology Roundup" were published electronically/online.
- ⌘ Coordinated in bringing out PSF quarterly/monthly Newsletter.



## **6.0 Other Activities**

### **In-house Databases**

Under Database Development and Updating activity, following Databases were developed and updated.

- ⌘ An in-house database of S&T Research published in Pakistan was developed.
- ⌘ Database of Scientific Periodicals of Pakistan was developed.
- ⌘ Database of Serial Holdings of S&T Libraries was updated.

### **Delegations Visit to PASTIC**

Various delegates of students from Sindh Agriculture University, Tandojam; Islamia University, Bahawalpur; Government College University, Lahore; Quaid-i-Azam University, Islamabad and officers of various organizations of Federal Government visited PASTIC. Presentation was delivered to the visiting delegates and they were taken around the facilities of PASTIC. Such visits were arranged for projection of PASTIC and promotion of its services. A proposal on need of a consortium for resource sharing/inter library loan at national level was prepared. Renovation work of PASTIC building was carried out.

### **Annual Review and Planning Meeting**

PASTIC organized an annual review and planning meeting of all the sectional heads of PASTIC National Centre and Officer Incharges of PASTIC Sub Centres to review the activities undertaken during 2011-12 and plan the activities and setting targets for next financial year 2012-13. The major objective of the meeting was to deliberate on development and strengthening of the existing activities and initiating new programmes according to the current requirement. Two development projects for PASTIC namely “Establishment of PASTIC Kiosks in Universities for provision of S&T Information” and “Establishment of PASTIC Sub Centre at Karakoram International University, Gilgit-Baltistan” were prepared.



*Dr. Khalil Ahmed Ibupoto, Member Science, PSF/DG PASTIC addresses the Inaugural Session of 3<sup>rd</sup> Corrosion & Pipeline Integrity Management Conference 2012 at Marriot Karachi.*



*Dr. Khalil Ahmed Ibupoto, Director General, PASTIC and Raja Naseem Akhter, Dean, Faculty of Arts, at the closing ceremony of PASTIC workshop at University of AJK Muzaffarabad.*



*A view of the PASTIC Service stall arranged during Book Exhibition at PASTIC*



*Dr. Khalil Ahmad Ibupoto, D.G. PASTIC visiting Books Exhibition*



#### IV. ORGANIZATION AND ADMINISTRATION

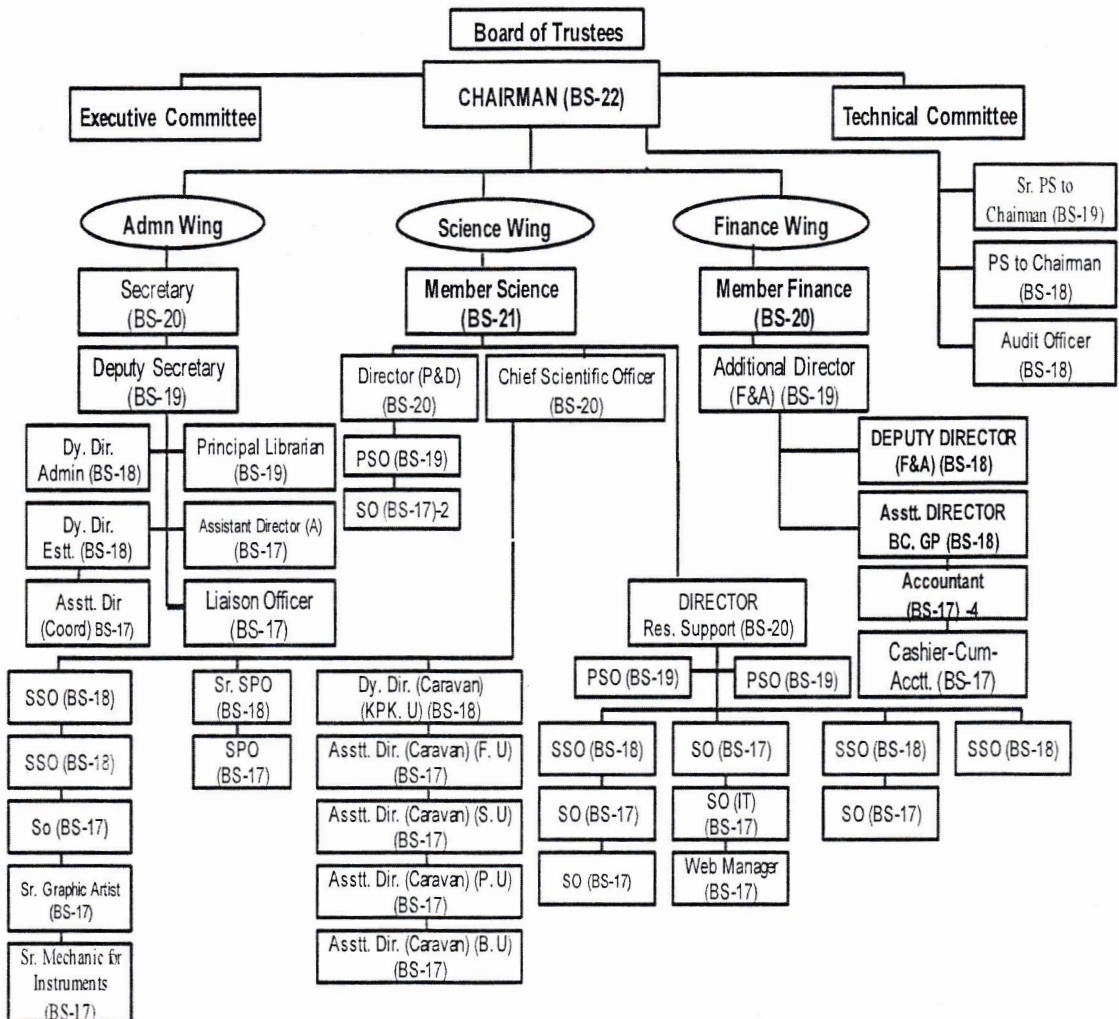
The organizational structure of Pakistan Science Foundation, Pakistan Museum of Natural History and Pakistan Scientific & Technological Information Centre is given in the forthcoming pages. The staff position in the Foundation, PMNH and PASTIC during the report period is as under:

##### 1.0) PSF Sanctioned Posts and Organizational Chart

Sr. No	Name of Post	BS	Sanctioned strength
1.	Chairman	22	1
2.	Member Science	21	1
3.	Member Finance	20	1
4.	Secretary	20	1
5.	Director (P&D)	20	1
6.	Chief Scientific Officer	20	1
7.	Director (RS)	20	1
8.	Additional Director (F&A )	19	1
9.	Principal Scientific Officer	19	2
10.	Deputy Secretary	19	1
11.	Pr. Librarian	19	1
12.	Sr. Scientific Officer	18	6
13.	Sr. Science Promotion Officer	18	1
14.	Dy. Director (F&A )	18	1
15.	Dy. Director (Admn & Estt.)	18	2
16.	PS to Chairman	18	1
17.	Dy. Director (Caravan)	18	1
18.	Scientific Officer	17	7
19.	Sr. Graphic Artist	17	1
20.	Asstt. Director (Admn)	17	1
21.	Assistant Director (BC+GP)	17	1
22.	PS to CSO	17	1
23.	PS to Chairman	17	1
24.	Liaison Officer	17	1
25.	Asstt. Director (Caravan)	17	4
26.	Internal Audit Officer	17	1
27.	Science Promotion Officer	17	1

28.	Mechanic for Instruments	17	1
29.	Asstt. Scientific Officer	16	1
30.	Superintendent (Store/Admn/Estt)	16	4
31.	Accountant	16	4
32.	PA to Director (P&D)	16	1
33.	Graphic Artist	16	1
34.	Asstt. Scientific Officer (Caravan)	7	7
35.	Sr. Diver-Cum-Mechanic	16	4
36.	Sr. Planetarium Assistant	16	3
37.	Sr. Calligrapher	16	1
38.	Sr. Photographer	16	1
	<b>Sub Total:-</b>		<b>71</b>
37.	Stenographer	15	6
38.	Science Assistant (Caravan)	12	12
39.	Science Assistant	14	5
40.	Technical Assistant (IT)	14	1
41.	Cashier	14	1
42.	Audit & Accounts Assistant	14	2
43.	Assistant	14	1
45.	Stenotypist	12	5
47.	Planetarium Assistant	11	6
48.	Driver-Cum-Mechanic	11	5
49.	Sr. Electrician	11	1
50.	Sr. Carpenter	11	1
51.	UDC	9	6
52.	LDC/Typist	7	10
53.	Telephone Operator	5	1
54.	Driver/D.R	4/5/6/7	18
55.	DMO	5	1
56.	Quasid/Naib Quasid	1/2/3/4	19
57.	Mali	3/ 4	2
58.	Caravan Attendant	1/2/3	9
69.	Security Guard	1/2/3/4	15
60.	Sanitary Worker	1/2/3	4
	<b>Sub Total:-</b>		<b>131</b>
	<b>G. Total:-</b>		<b>202</b>

**PAKISTAN SCIENCE FOUNDATION  
ORGANIZATIONAL CHART  
2011-12**



2.0) **PMNH Sanctioned Posts and Organizational Chart**

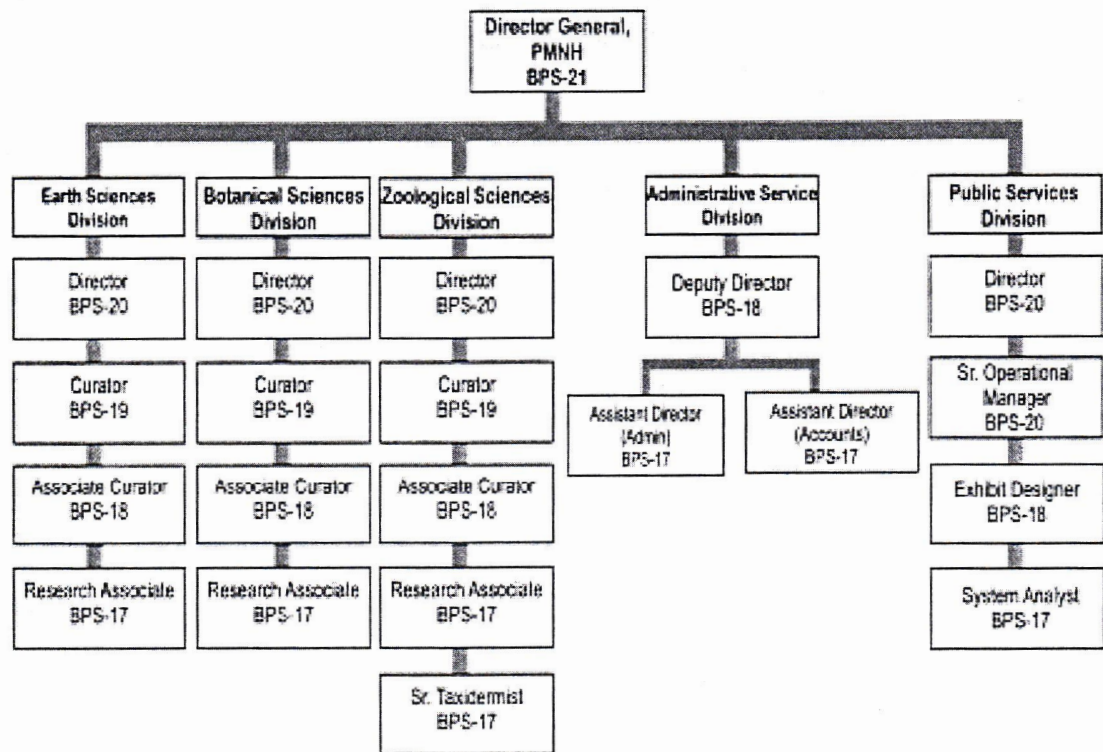
<u>Sr. No.</u>	<u>Name of Post</u>	<u>BS</u>	<u>No of Posts</u>
1.	Director General	21	1
2.	Director	20	4
3.	Sr. Operational Manager	20	1
4.	Curator	19	6
5.	Associate Curator	18	8
6.	Deputy Director (Admin)	18	1
7.	Exhibit Designer	18	1
8.	Research Associate	17	16
9.	Sr. Taxidermist	17	1
10.	Assistant Director (Admin)	17	1
11.	Assistant Director (Accounts)	17	1
12.	System Analyst	17	1
13.	P.A to D.G	16	1
14.	Assistant Research Associate	16	2
15.	Taxidermist	16	1
16.	Casting Staff	16	1
17.	Fossil Technician	16	1
18.	Associate Artist	16	2
19.	Teacher Guide	16	1
20.	Children Education Programmer	16	1
21.	Sr. Modeler	16	1
22.	Sr. Photographer	16	1
23.	Accountant	16	2
24.	Assistant Librarian	16	1
25.	Superintendent	16	1
26.	Supporting Staff (BS-01 to BS-15)		78
		<b>Total</b>	<b>136</b>



# PAKISTAN MUSEUM OF NATURAL HISTORY

## ORGANIZATIONAL CHART

2011-2012 1



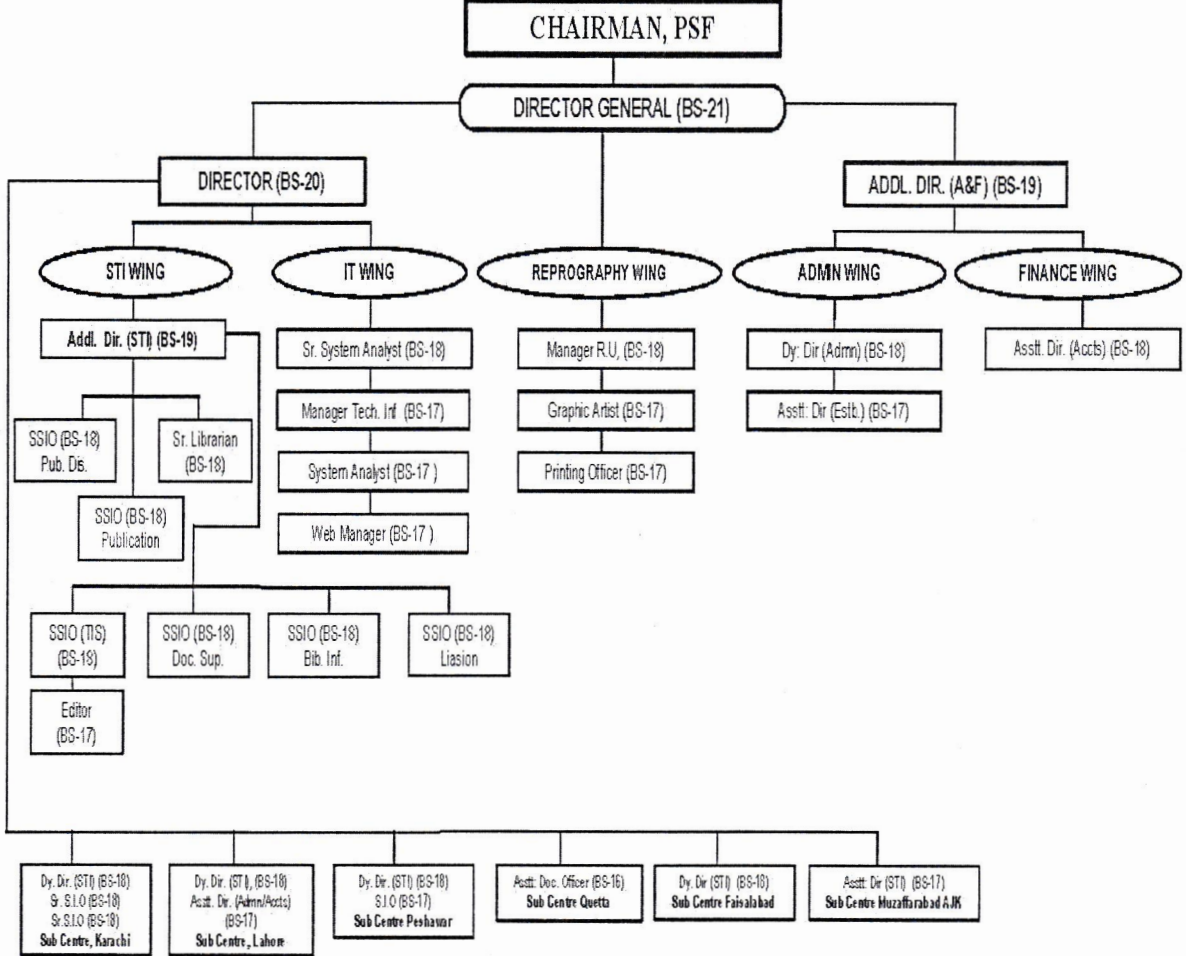
### 3.0) PASTIC Sanctioned Posts and Organizational Chart

BPS	Designation	Number of Posts		
		Total	Filled in	Vacant
21	Director General	1	1	0
20	Director	1	1	0
19	Additional Director (A&F)	1	1	0
19	Additional Director (Doc)	1	1	0
18	Deputy Director (STI)	2	2	0
18	Senior Bibliographic Officer	1	1	0
18	Manager Reprographic Unit	1	1	0
18	Senior System Analyst	1	1	0
18	Senior Librarian	1	1	0
18	Senior Scientific Information Officer	4	4	0
17	Assistant Director (Accounts)	1	1	0
17	Assistant Director (STI)	4	3	1
17	Scientific Information Officer	5	3	2
17	Bibliographic Officer	1	1	0
17	System Analyst	1	0	1
17	Web Manager	1	1	0
17	Manager Technology Information	1	0	1
17	<b>Printing Officer</b>	1	1	0
17	<b>Graphic Artist</b>	1	1	0
17	Assistant Director (Admn)	1	1	0
17	<b>Technology Information Officer (Marketing)</b>	1	0	1
17	<b>Editor</b>	1	1	0
16	<b>Asstt Accounts Officer</b>	1	1	0
16	PA to Director General	1	1	0
16	Superintendent (Reprographic Unit)	1	1	0
16	Superintendent (Admn)	1	1	0
16	Assistant Scientific Information Officer	4	3	1
16	Assistant Documentation Officer	1	0	1
16	Assistant Programmer	2	2	0
16	Assistant Web Manager	1	1	0
16	Assistant Manager Reprographic Unit	1	1	0
16	Assistant Printing Officer	3	3	0
16	Accountant	1	1	0
<b>Total</b>		<b>50</b>	<b>42</b>	<b>8</b>

**Detail of Sanctioned Strength in BS-1 to BS-15 as on 30-07-2010**

BPS	Designation	Number of Posts		
		Total	Filled in	Vacant
15	Senior Data Control Assistant	2	2	0
14	Data Control Assistant	5	4	1
14	Layout Artist	1	1	0
14	Marketing/Field Assistant	1	1	0
14	Graphic Assistant	1	0	1
14	Mechanical Supervisor	1	1	0
14	Senior Offset Printer	2	0	2
14	Assistant	8	8	0
12	Stenotypist	4	3	1
12	Library Assistant	1	1	0
11	Technician	1	1	0
11	Offset Printer	1	0	1
11	Technical Assistant	1	0	1
11	Photo Assistant	1	1	0
10	DEO	4	3	1
9	UDC	10	6	4
7	Assistant Offset Printer	1	1	0
7	Electrician	1	1	0
7	LDC	10	9	1
6	Carpenter	1	1	0
5	Telephone Operator	1	1	0
5	Bindery Assistant	2	2	0
5	Offset Machine Assistant	2	2	0
4	Drivers	8	7	1
4	DMO	1	1	0
3	Head Mali	1	1	0
2	Record Sorter	1	1	0
2	Photo Attendant	2	2	0
2	Patent Attendant	2	2	0
2	Qasid	1	1	0
2	Library Attendant	2	1	1
1	Sanitary Workers	3	2	1
1	Mali	2	2	0
1	Security Guard	8	8	0
1	Naib Qasid	17	17	0
1	Bindery Helper	3	3	0
<b>Total</b>		<b>113</b>	<b>97</b>	<b>16</b>
<b>GRAND TOTAL</b>		<b>163</b>	<b>139</b>	<b>24</b>

**PAKISTAN SCIENTIFIC & TECHNOLOGICAL INFORMATION CENTRE, (PASTIC)  
ORGANIZATIONAL CHART 2011-12**





**V. PHOTO GALLERY AND PRESS  
CLIPPING, 2011-12**

## **1.0 PSF Photo Gallery & Press Clipping**



*National Assembly Standing Committee on S&T Chairman Abdul Kadir Khanzada presides over a meeting of the committee at PSF on July 28, 2011.*



*PSF Chairman Prof. Dr. Manzoor H Soomro chairs a meeting of experts to conserve Balochistan Juniper Forests on September 11, 2011.*





*Federal S&T Minister Mir Changez Khan Jamali addresses a session of Conference on Flood Management in Tokyo on September 27 in Tokyo*



*Federal S&T Minister Mir Changez Khan Jamali and PSF Chairman Prof. Dr. Manzoor H Soomro being briefed about hydroponics project during their visit to PASONA Inc, Tokyo on September 28, 2011.*





*A group photo of ECOSF Board of Trustees and senior officials during 1<sup>st</sup> meeting of ECOSF Board of Trustees on December 20, 2011.*



*ECOSF President and PSF Chairman Dr. Soomro attends 1<sup>st</sup> BoT of ECOEI in Turkey*





*PSF Chairman Prof. Dr. Manzoor Soomro presents PSF Crest to Sri Lanka Science Foundation Chairperson Prof. Sirimali Fernando, while Sri Lankan Sr. Minister for Scientific Affairs and Sri Lankan High Commissioner are also present.*



*Prof. Dr. Masoom Yasinzai VC, QAU and PSF Chairman Prof. Dr. Manzoor H. Soomro with winners of poster and essay competitions during World Science Day function at PSF on November 20, 2011.*





*Group Photo of participants of training workshop on Inquiry Based learning (LAMAP) with PSF Chairman on November 21, 2011*



*Participants of the Training Session for the Learning Facilitators of Science Caravans on Expo "It's All about Chemistry" with Mr. Guy Antoine, Centre Sciences-Orleans, Chairman PSF, Member Science and Member Finance PSF*



*PSF Chairman Prof. Dr. Manzoor H. Soomro and AIOU VC Prof. Dr. Nazir Anmed Sangi visit the expo after its inauguration*



*Mr. Khalid Hussain briefing to Pir Mazhar ul Haq, Senior Minister of Education & Ali Mardan Shah Minister of Population during their visit of Science Exhibition at Umer Kot*





*Students visiting the Chemistry Expo in Mansehra.*



*Chairman PSF during the expo in Sawat*



*Jury Members busy evaluating models for top three positions during Inter Schools Model Competition on Chemistry.*



*Federal Minister for S&T Mir Changez Khan Jamali inaugurates National Science Exhibition at Dera-Allahyar*





*Prof. Dr. Manzoor H. Soomro, Chairman PSF, Dr. Frederic Basset, French Counselor for Development and Cooperation, Dr. Khalil Ahmed Ibopoto, Member Science, PSF, Michel Ouliac and Patrick Marcel, French Mater Trainers at the inaugural session of 3<sup>rd</sup> LAMAP Workshop held at PSF*



*PSF Chairman Prof. Dr. Manzoor H. Soomro addresses the workshop for young scientists at NUST*



*PSF Member Science Dr. Khalil Ahmad Ibupoto visits the exhibition arranged during the conference in Isfahan, Iran*



*Federal Secretary, Ministry of Science and Technology Mr. Akhlaq Ahmad Tarar, PSF Chairman Prof. Dr. Manzoor H. Soomro, Italian expert Dr. Giulia Costa and others participate in International Symposium on Solid Waste Management.*





*Federal Secretary, MoST, Mr. Akhlaq Ahmad Tarar, PSF Chairman Prof. Dr. Manzoor H. Soomro and Italian expert Dr. Giulia Costa address the International Symposium on Solid Waste Management at PSF*



*A group photo of PSF Board of Trustees after the meeting.*



*PSF Chairman along with two Pakistani delegates attends IPBES meeting in Tehran on March 10.*



*PSF Chairman Prof. Dr. Manzoor H. Soomro with some participants of SACAM meeting on March 12*





*ECO Science Foundation President Prof Dr. Manzoor H. Soomro, meets  
ECO Secretary-General H.E Mr. M. Yahya Maroofi on March 13*



*PCST Chairperson Dr. Muddasar Asrar gives away gift of books to a teacher of Mastung Degree College.*



*Minister Jamali and his delegation visiting research laboratories of University of Rome- Tor Vergata, Italy*



*Federal Minister for S&T Mir Changez Khan Jamali and Chairman PSF Prof. Dr. Manzoor Soomro meet Mr. Iftikhar Aziz, Ambassador of Pakistan in Kuwait.*





*Minister for S&T Mr. Changez Khan Jamali and Pakistan Science Foundation (PSF) Chairman Prof. Dr. Manzoor H. Soomro discuss collaboration between University of Rome- Tor Vergata and PSF, with Deputy Rector Prof. Pietro Masi and his team*



*PSF Chairman Dr. Soomro presides over Intel Science Fair Awards and LIYSF Orientation Ceremony.*



*Minister of State for S&T Ms Raheela Baloch attends a briefing on PSF performance at the Foundation offices.*



*PSF Chairman Prof. Dr. Manzoor H. Soomro along with his team holds meeting with Chinese delegation.*





*A group photo of Chinese Scientists delegation with PSF Chairman Prof. Dr. Manzoor Soomro and other Officials*



*PSF Chairman and Pakistan Society of Nematologists President Prof. Dr. Manzoor H. Soomro, Karachi University VC Prof. Dr. Mohammad Qaiser and Prof. Dr. Richou Han, Director, Guangdong Entomological Institute, Guangzhou, China, attend the 12<sup>th</sup> Nematological Event.*



*PSF Chairman and Pakistan Society of Nematologists President Prof. Dr. Manzoor H. Soomro awards shield to Prof. Dr. Shahina Fayyaz, Director, NNRC*



*PSF Chairman Prof. Dr. Manzoor H. Soomro presides over the inaugural session of the LAMAP Review Meeting, while Dr. Frederic Bessat from French Embassy, Dr. Khalil Ahmed Ibupoto, Member Science PSF, Mr. Riazul Islam, Member Finance, PSF and Mrs. Farhat Rajpar, CSO, PSF are also on the stage.*





*PSF Chairman Prof. Dr. Manzoor H. Soomro presides over Annual Review Meeting at PSF*



*Annual Review Meeting at PSF*

# The Nation

## Italy to help Pakistan manage over 20m annual solid waste

ISLAMABAD - Stronger linkages between academia and business communities coupled with government support of the two friendly countries - Pakistan and Italy - will lead to capacity building of Pakistan and sustainable management of solid waste in the country.

This was stated by Minister for Science and Technology Mir Changaiz Khan Jamaat while talking to experts and business community of the two countries at University of Rome, Tor Vergata, the other day. According to a message received here on Thursday, the minister along with Chairman Pakistan Science Foundation (PSF) Dr Manzoor Soomro and a team of Pakistan business persons is on a three-day visit to Rome. The delegation spent a busy day meeting management of the university followed by a day-long symposium on solid waste management (SWM) in Italy. The University of Rome showed its desire to enter into an agreement to work together with Ministry of Science and Technology, Government of Pakistan through Pakistan Science Foundation to undertake collaborative research studies on SWM, exchange of experts and students and business communities of the two nations. It was thus agreed in principle to work together and jointly resource a collaborative programme for European Union funding.

Meanwhile the University of Rome - Tor Vergata and Pakistan Science Foundation will enter into a broad memorandum of understanding (MoU), the university management also shared a draft MoU with Chairman PSF.



# Italy to help Pakistan manage its annual solid waste

## Staff Report

**ISLAMABAD:** Stronger linkages between academia and business communities coupled with government support of the two friendly countries will lead to capacity building of Pakistan and sustainable management of solid waste in the country, said Pakistan's Minister for Science and Technology Mir Chungez Khan Jamali while talking to experts and business community of the two countries at University of Rome, Tor Vergata the other day.

According to a message received here on Thursday, the minister along with Pakistan Science Foundation (PSF) Chairman Dr Manzoor Soomro and a team of Pakistan business persons, is on a three-day visit to Rome. The delega-

tion spent a busy day meeting management of the university followed by a day-long symposium on solid waste management (SWM) in Italy. The University of Rome showed its desire to enter into an agreement to work together with Ministry of Science and Technology, government of Pakistan through Pakistan Science Foundation to undertake collaborative research studies on SWM, exchange of experts and students and business communities of the two nations. It was thus agreed in principle to work together and jointly prepare a collaborative programme for European Union funding. Meanwhile the University of Rome-Tor Vergata and Pakistan Science Foundation will enter into a broad memorandum of understanding

(MoU), the university management also shared a draft MoU with PSF chairman.

The experts made presentations on various aspects of solid waste generation, its causes, categorisation, collection and management on scientific basis. It was demonstrated that all the research being done in the area in Italy was client-based and that the city governments were very much involved right from planning the research. Thus some of the research is being funded by the municipal governments as well as by the industry and private sector involved in manufacturing the needed machinery. Presentations by private sector were also made to the visiting delegation as to how they were benefiting from the S&T research findings of the experts.

Subsequently, Pakistani delegation was given a round of the state-of-art research laboratories doing research on SWM. A number of projects in the universities of Rome are being funded by the EU.

Minister Jamali shared the new vision of Science, Technology and Innovation (STI) policy of the government of Pakistan, which he said was emphasising on the problem-oriented research in collaboration with private sector by involving the chambers of commerce and industry across Pakistan. He also invited Italian business people to invest in Pakistan and work together with dedicated researchers of Pakistan. Minister Jamali also spoke to research students of the university and answered their questions with particular reference to Pakistan's softer image.



راولپنڈی / اسلام آباد

# پندرہ روزنامہ

ایڈیٹر  
زاہد فاروق ملک

مکمل 16 تعدادی سالہ 1433ھ 8 ص 2012 25 مبر 2067 ب 8 صفحات 8 قیمت 8 روپے

مستقل تعلقات تحت قیادت فوج و نیشنل سنی فاؤنڈیشن کی ایڈیٹر زاہد فاروق ملک نے پاکستان میں سنیوں کی ترقی کے لیے نیشنل سنی فاؤنڈیشن کی قیادت میں سنیوں کو متحد کرنے کے لیے ایک نیا راستہ تلاش کیا ہے۔

پاکستان کا روایتی و قیامی بہتر احتجاجی ہیرا کر کے کیلئے طلباء، ڈاکٹروں کے خلاف اور دیگر معاہدے کے جائزے ہیں۔

پاکستان میں سنیوں کی ترقی کے لیے نیشنل سنی فاؤنڈیشن کی قیادت میں سنیوں کو متحد کرنے کے لیے ایک نیا راستہ تلاش کیا ہے۔



خاندان خٹک کے تحت پاکستان میں سنیوں کی ترقی کے لیے ایک نیا راستہ تلاش کیا ہے۔

107  
مختصر درج

108  
مختصر درج

مختصر درج کے تحت سنیوں کی ترقی کے لیے ایک نیا راستہ تلاش کیا ہے۔

109  
مختصر درج

مختصر درج کے تحت سنیوں کی ترقی کے لیے ایک نیا راستہ تلاش کیا ہے۔

110  
مختصر درج

مختصر درج کے تحت سنیوں کی ترقی کے لیے ایک نیا راستہ تلاش کیا ہے۔

# Daily Times

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Wednesday, November 23, 2011

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### World Science Day

#### VC stresses on educating youth for economic prosperity

Times the media and other dept to give due importance to science

A Spd near industrial revolution will be of nanotechnology

#### Staff Report

ISLAMABAD: Pakistan has to wake up and decide everything for educating youth for economic prosperity, said Professor Dr Nasibullah Khan.

Vice Chancellor (VC), Quaid-e-Azam University (QAU), Islamabad and Member of Pakistan Science Foundation (PSF) Board of Trustees.

He was addressing a function organised by PSF to celebrate World Science Day (WSD) as the chief guest on Tuesday. Dr Khan urged the media and other departments to give due importance to science as no nation could make its position in the comity of nations without progress in this field. He called upon the students to excel in science if they wanted to see Pakistan as a developed country and compete the world.

"Our youth are our biggest treasure and we need to put them on right track so that they could use their role in socio-economic development of the country," the QAU VC said. "We don't need to put our hand as our youth having a great potential can perform miracles," he said. Out of 55 million youth of the country only one million get higher education as a necessity. He said there was a need to increase this number as 50 percent of youth should be in universities. He deplored lack of political will in this regard. He said conference of policies was a must to bring change of investments to achieve this objective.

Talking about scientific achievements, he said science has played a great role in changing our life by making possible a number of services for us. He said scientists performed miracles through their hard work, what many people termed their madness of that time. The VC also talked about real use of science. He said we first educate youth what is useful and what is dangerous. He said next industrial revolution will be of nano-technology and it will be the era of survival of the fittest.

Addressing on this occasion, the PSF Chairman Dr Manzoor H Siddiqui said the WSD is observed all over the world on November 10 to mark the birth taking achievements of man in science and technology and PSF observes this day every year in a befitting manner, but this year due to Eid-ul-Azha holidays in Pakistan the PSF celebrated this day on November 22 so that maximum number of people and students could actively participate in it.

Dr Siddiqui said PSF was actively engaged in popularisation of science in the country through different means including science lectures, exhibitions in schools and colleges across the country.

He said to achieve scientific development and use it for the betterment of mankind, Pakistan along with other countries of the world observe the "World Science Day for Peace and Development."

He said the purpose of World Science Day was to review the contribution to science for peace and development and to stress the reasonable use of science for the benefit of society as postulated by the World Conference on Science in 1998. He said the WSD during the General Conference at its 31st session (2002) had proclaimed November 10 each year as "World Science Day for Peace and Development." Initially, the proposal was given by Eminent Pakistan Scientist Dr Ishaq Ahmad, Advisor Planning Commission, he added.

Dr Siddiqui said since declaration of the day Pakistan Science Foundation

International receive funds for 2011-12 and the foundation has been established. The foundation has been established. The foundation has been established.

PSF received a grant of Rs 100 million from the Government of Punjab for the year 2011-12.

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Face of the Year



Face of the Year

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# The Nation

Rabi-ul-Awwal 21, 1433, Tuesday, February 14, 2012

French envoy opens Chemistry Travelling Expo at BZU

## Chemistry knowledge must to tackle challenges

**I Ambassador urges students to benefit from inter-linkage  
programmes, go to France for higher education**

OUR STAFF REPORTER

MULIAN French Ambassador to Pakistan Philippe Thebaud has said that Pakistan and France are faced with same challenges, adding that both the countries can launch joint ventures in areas like energy, food processing, water and environment.

Addressing the participants of a Chemistry Travelling Expo after inaugurating it here at Bahauddin Zakariya University on Monday, he said that Chemistry had a direct link with our lives and no one could undermine its role and importance. He added that we were part of a global village and we needed to boost our command on science. "For this purpose we have to further improve relations at the level of state institutions," he added. He said that Chemistry had a link with our lives one way or other and it could be used as a key to solve problems being faced by the humankind. He

hoped that the expo would help resolve problems faced by common man in routine life. He told the participants that France spent a big portion of its GDP on promotion of science and technology every year.

He asked the students to benefit from inter-linkage programmes and go to France for higher education. He said that France was an old trade partner of Pakistan and these ties should further be strengthened. He disclosed that France-Pakistan relations were passing through a new era of friendship as France imported and exported a large number of duty free items besides working with Science Foundation.

Answering a question, he said that Pakistan was a democratic country and democratic process should continue here. "It is Pakistanis who are to decide the fate of their country," he added.

Speaking on the occasion, Vice Chancellor Dr Ejaz

ma said that no one could undermine the importance of education and knowledge in our lives. "That's why we have to become a knowledge-based nation. We need to work for the promotion of knowledge," he asserted. He said that Pakistanis were a peaceful nation and we wanted to send out this message to the world. Chairman Pakistan Science Foundation Dr Manzoor Hussain Soomro said that more projects would be launched in collaboration with France in energy, water, environment and food processing sectors. He asked the students and teachers of BZU to play their role in promoting research culture. He said that the motive behind holding the expo was to promote science and technology in Pakistan with the cooperation of France.

**AFFECTEES THREATEN:** The affectees of Sanghar hill to erect project have warned the government that they will block Indus Highway if their grievances are not addressed forthwith. Talking to the journalists here, the representa-

tive of Sindh Raeshawn Tariq Fazal Hub said that the ill-advised project was launched in January 2009 at a cost of Rs2 billion and it was scheduled to be completed in June 2013. He lamented that the project inflicted destruction and loss on the residents of many villages like Mauza Mandrahi, Mauza Jut Gali and Mauza Baghlan.

"Just because of this project, at least 10,000 acres of land have fallen prey to the river erosion and this process continues till date," he lamented. He said that the three villages had become barren while about three lac people had lost their employment.

He lamented that the government and its officials did not share any details of the project with the residents of the area. "Even nothing is allocated for the compensation of losses incurred by this project," he maintained. He said that the affectees were staging protest demonstration for the last three years but no concerned officials contacted them.













# Promotion of innovation is need of the hour: Seminar

OUR STAFF REPORTER

LAHORE: Minister of State for Science and Technology Rahila Shahadat Baloch said that we should promote the culture of innovation to provide jobs to our youth and put the country on the path of economic prosperity.

She was addressing the one-day 'Invention to Innovation Summit 2012' organised by Punjab University in collaboration with Pakistan Science Foundation (PSF) and Institute for Research Promotion on Monday.

Addressing the participants, Rahila Baloch said that China

and India were on the path of progress by adopting new innovative technologies. She also said that China was the biggest user of solar technology. Universities should promote the culture of research, Baloch added.

Punjab University Vice Chancellor Dr Mujahid Kamran said that illiterate nations were bound to destroy and demoralised by literate nations, therefore the first word of the Holy Quran "Iqra" urges the mankind to read. He said the nations who ponder and think carefully before taking decisions and implementations re-

named successful. He highlighted the importance of education and emphasised that government should spend at least 4 to 5 per cent of GDP on education.

PSF Chief Dr Manzoor Soomro said that there should be consistency in the policies. He said that despite the financial constraints the PSF was working for the promotion of science and technology in the country and its doors were open for all the stakeholders. He said that an academic and industry linkage was most for success.

Dr Farid Malik in his key note suggested that there should be

a major restructuring in the ministry of science and technology. Pakistan Technology Board should be revived, he suggested. Energy, textile, agriculture and livestock, telecommunication and information technology sectors need special attention, he maintained.

Abid HK Sherwani said that summit had provided a platform to move forward on the path of innovation and invention. He said that steps should be taken for the commercialisation of innovative products. He said that technology should be transfer to industry so that people could benefit from innovation.

Daily Express Tribune

## Invention to Innovation Summit-2012 held at Punjab University

'Policies should be made in the national interest'

OUR CORRESPONDENT

LAHORE

"We should promote the culture of innovation and invention so that there are employment opportunities for our youth as well as putting the nation on the path of economic prosperity," said Minister of State for Science and Technology Rahila Shahadat Baloch on Monday.

Baloch was speaking at the one-day Invention to Innovation Summit 2012 organised by Punjab University (PU) with the Pakistan Science Foundation (PSF) and the Institute for Research Promotion (IRP). PU Vice Chancellor Mujahid Kamran presided over the ceremony. PSF Chairman Dr Manzoor Soomro, former PSF chairman Dr Farid Malik and IRP chief executive officer Abid HK Sherwani spoke during the workshop.

The minister said that China and India are on the path of progress on account of adopting new and innovative tech-

should promote a culture of research.

Prof Kamran said nations which think carefully before taking decisions succeed. He said no nation could progress without investing in education.

Dr Manzoor Soomro said that there should be consistency in policies and policies should be made in the national interest. He said that despite financial constraints, PSF was working for the promotion of science and technology and its doors were open for all the stakeholders, including the private sector. Dr Soomro said that PSF was planning to sign a Memorandum of Understanding (MOU) with Lahore Chamber of Commerce and Industry for developing a close liaison.

Dr Farid Malik, in his keynote address, recommended that there should be a major restructuring of the ministry of science and technology. He also suggested that the Pakistan Technology Board should be revived.

Sherwani said that the summit had provided a platform to move forward on the path of innovation and invention. He

## روزنامہ لاہور

### پاکستان کی نوجوان نسل باصلاحیت ہے: ڈاکٹر مجاہد کامران

پاکستان میں نوجوان نسل باصلاحیت ہے، ڈاکٹر مجاہد کامران نے کہا ہے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔

## روزنامہ اوصاف لاہور



پاکستان کی نوجوان نسل باصلاحیت ہے: ڈاکٹر مجاہد کامران

### پاکستان کی نوجوان نسل باصلاحیت ہے: ڈاکٹر مجاہد کامران

پاکستان کی نوجوان نسل باصلاحیت ہے، ڈاکٹر مجاہد کامران نے کہا ہے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔

## روزنامہ بیناچ لاہور

### پنجاب یونیورسٹی کے زیر اہتمام ورکشاپ کا انعقاد

پنجاب یونیورسٹی کے زیر اہتمام ورکشاپ کا انعقاد کیا گیا ہے۔ ورکشاپ میں نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔

## روزنامہ مشرق لاہور

### تعلیم و تحقیق کی ترقی یافتہ نسل کی کام کرنے کی ضرورت ہے: ڈاکٹر مجاہد کامران

تعلیم و تحقیق کی ترقی یافتہ نسل کی کام کرنے کی ضرورت ہے، ڈاکٹر مجاہد کامران نے کہا ہے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔

## روزنامہ دن لاہور

### پنجاب یونیورسٹی کے زیر اہتمام ورکشاپ

پنجاب یونیورسٹی کے زیر اہتمام ورکشاپ کا انعقاد کیا گیا ہے۔ ورکشاپ میں نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔

## روزنامہ مساوات لاہور



پاکستان کی نوجوان نسل باصلاحیت ہے: ڈاکٹر مجاہد کامران

پاکستان کی نوجوان نسل باصلاحیت ہے، ڈاکٹر مجاہد کامران نے کہا ہے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔ ان کا کہنا ہے کہ نوجوان نسل کی تعلیم اور ترقی کے لیے حکومت کو باصلاحیت نوجوانوں کی تلاش کرنی چاہیے۔







# BUSINESS RECORDER

Islamabad, Thursday 22 December 2011, 26 Maharram 1433

## MoU signed by MoST, Centre Sciences-CCSTI- France

**MEMORANDUM OF UNDERSTANDING (MoU) for promotion and cooperation in the field of science.**

Federal Minister for Science and Technology Mr. Chaudhry Khuram Jahangir, French Ambassador Philippe Thirestead and Secretary Ministry of Science and Technology Iftikhar Ahmad Tarar were also present at the occasion. PSF Chairman Dr. Manzoor H. Soomro and CCSTI France Deputy Director Guy Antoine Dufourd signed the agreement on behalf of their respective organisations.

Launch and promotion of science and technology was one of the basic for socio-economic development of the country, being the MoU will help the students and youth towards science and technology, the MoU emphasized the need for



Dr. Iftikhar Ahmad Tarar, Federal Minister for Science and Technology, Mr. Chaudhry Khuram Jahangir, the secretary of MoU, between the Government of Pakistan and Pakistan Science Foundation for the promotion of science and technology through mutual collaboration in science and technology.

promotion of education and science and technology for development of the country. French Ambassador Thirestead highlighted Pakistan-France collaborative programmes. He said that signing of the MoU was evidence of Pakistan and France strong bilateral relations which would be further strengthened in future.

Secretary Ministry of Science and Technology Iftikhar Ahmad Tarar thanked the French Embassy for accepting the proposal of collaboration in the field of science and technology. He said the MoU would open wide a remarkable science base of the country.

PSF Chairman Dr. Soomro said that MoU will develop cooperation and collaboration for promotion and production of science through mutual collaboration activities which can result in progress of the educational institutions of the country. Under the MoU, PSF and CCSTI would work together for sharing of expertise with each other, reproduction and improvement of existing technologies, seminars, courses, workshops, conferences and symposiums of events for promotion and popularisation of science, training for post-graduate students and development of study, exchange of information, feedback and cooperative projects and exchange and joint production of teaching materials like articles, reports, and other than the developing of common activities.

Islamabad | Thursday, December 22, 2011

# The Nation

## PSF signs MoU for science promotion

ISLAMABAD (APP) — Pakistan Science Foundation (PSF), Ministry of Science and Technology Government of Pakistan and Centre Sciences - CCSTI France on Wednesday signed a Memorandum of Understanding (MoU) for promotion of science at a ceremony at PSF.

Federal Minister for Science and Technology Mr. Chaudhry Khuram Jahangir was the chief guest at the MoU signing ceremony. French Ambassador Philippe Thirestead and Secretary Ministry of Science and Technology Iftikhar Ahmad Tarar were also present on this occasion, who witnessed the agreement signing. PSF Chairman Dr. Manzoor H. Soomro and CCSTI France Deputy Director Guy Antoine Dufourd signed the agreement on behalf of their respective organisations.

Addressing at the occasion, Jahangir said promotion of science and technology was need of the hour for socio-economic development of the country. He hoped that the MoU will help students and youth in arousing their interest in science and awareness on science and Technology.

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پاکستان کا سب سے بڑا اور گویا اخبار

ABC NEWS

جنگ نیوز مارٹ

پرائیویٹ

22 دسمبر 2011ء

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22 دسمبر 2011ء

350 روپے

پاکستان، فرانس میں سائنس کے فروغ، اساتذہ کی تربیت کا معاہدہ

اسٹریٹ نیوز

پاکستان کی صورت سے کیا بدلا

اسٹریٹ نیوز

INTERNATIONAL  
**THE NEWS**  
Wednesday  
February 29, 2012

## Pakistani students to attend science forum in London

**By International Desk**

Over 100 Pakistani students will attend the 12th International Science Forum in London, UK, from March 1 to 3, 2012. The forum is organized by the Pakistan Science Foundation (PSF) in collaboration with the British Science Association (BSA). The forum will provide a platform for Pakistani scientists and students to interact with their counterparts from other countries and discuss the latest developments in science and technology.

The forum will feature a series of workshops, seminars, and presentations. The participants will be divided into several groups based on their fields of study, including physics, chemistry, biology, and earth sciences. The forum will also include a field trip to the British Science Association's headquarters in London.

The PSF is an educational trust, created and operated by the Government of Sindh. It was established in 1974 to promote and support scientific research and education in Pakistan. The PSF has been instrumental in organizing several international science forums, including the 11th International Science Forum in London in 2010.

The 12th International Science Forum will be held at the British Science Association's headquarters in London, UK, from March 1 to 3, 2012. The forum will be held in the afternoon and will be held in English.

## PSE funded research project wins US industrial prize

**By International Desk**

A research project funded by the Pakistan Science Foundation (PSF) has won the US Industrial Prize for 2011. The prize is awarded to the best research project in the field of science and technology. The project, titled "Development of a novel method for the synthesis of poly(ethylene glycol) (PEG) using a novel catalyst," was developed by a team of scientists from the PSF. The project was funded by the PSF and the Government of Sindh. The prize is awarded by the US Industrial Prize Foundation, a non-profit organization that promotes and supports scientific research and innovation in the United States. The prize is awarded annually to the best research project in the field of science and technology. The project was selected from a pool of over 100 entries. The prize is worth \$10,000 and includes a certificate of appreciation. The project was presented at the US Industrial Prize Awards ceremony in Washington, DC, on February 29, 2012.



سندھ زرعی یونیورسٹی تانڈوجام جو وائیس چانسلر ڈاکٹر عبدالقادر مغل، پاکستان سائنس فائونڈیشن جی عملدار ڈاکٹر منظور سومرو سان یادداشتنامی تی صحیح کری رہیو آھی





# Nation

ISSUED WEEKLY (Sunday) September 10, 2012

## World help sought on flood management

International experts are to meet in Islamabad to discuss flood management in Pakistan.

The meeting will be held at the National Institute of Water Management (NIWM) in Islamabad. It will be held from September 10 to 12.

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# EXPLORER

## Low cost dryers date install set in Khairpur, Sukkur: PSF



PSF officials are working to install low cost dryers in Khairpur and Sukkur. The dryers are designed to reduce the loss of nutrients in agricultural products during the drying process. The project is being implemented by the Pakistan Science Foundation (PSF) in collaboration with the National Institute of Food and Nutrition (NIFD).

The dryers are designed to reduce the loss of nutrients in agricultural products during the drying process. The project is being implemented by the Pakistan Science Foundation (PSF) in collaboration with the National Institute of Food and Nutrition (NIFD). The dryers are being installed in Khairpur and Sukkur. The project is being implemented by the Pakistan Science Foundation (PSF) in collaboration with the National Institute of Food and Nutrition (NIFD).

The Nation, Islamabad

# NATIONAL

Friday, Aug 10, 2012

## PSF, France sign MoU to improve teaching, learning in Pakistan

ISLAMABAD (PTF) - Pakistan Science Foundation (PSF) Chairman, Prof. Dr. Mansoor H. Soomro has represented Pakistan in International Conference titled "Developing Inquiry-Based Science Education (IBSE): New Issues - The Roles of Assessment and the Relationship with Industry", held in Helsinki, Finland on May 30 to June 1.

The conference was organized by the Global Network of Science Academies (GNSA), ALLEA (All European Academies), Finnish Academy of Science and Letters,

and Finland's Research Education Centre, UPMU, 2012 a press release issued here on Thursday. The Chairman brought together different aspects of policy and practice that influence the development of the IBSE. The conference programme was based on two main themes related to the formative and summative assessment of students and the relationship between science, education and industry. Different countries shared their experiences to enhance their understanding about science education techniques.

In the conference, the PSF chairman gave a presentation on "IBSE in Pakistan: issues, implementation and student assessment". He said the IBSE programme was initiated in Pakistan with the support of French Embassy in 2003. Dr. Soomro told the conference that PSF and the Academic for Science, France signed a MoU of cooperation for the improvement of teaching and learning sciences at primary and secondary levels through an inquiry-based approach. Jean Salmere, the then Pres-

ident Académie des Sciences, France and Dr. Mansoor Soomro Chairman PSF had signed the MoU on behalf of their respective organisations in Paris on December 15, 2010. He said PSF has conducted three workshops for teachers to promote IBSE.

Dr. Soomro held a special meeting with Prof. Pierre Lema, former leader La traine in Paris, from Académie des sciences, France, to review progress of IBSE in Pakistan and discussed future collaborative programmes.



مسکلم نشاۃ ثانیہ کی آواز

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روزنامہ

ABC CONTINUED

اسلام آباد

ایڈیٹر فیض محمد اعجاز

لاہور پشور سے بھی شائع ہوتا ہے

قیمت 8 روپے

شعبان المعظم 1432ھ 20 جنوری 2011ء 5 مئی 2068ھ ب 256



اسلام آباد پبلک سروس کمیشن میں پبلک سروس کمیشن کے سربراہان کی تقریب کے بعد میڈیا سے بات چیت کرتے ہوئے

**سائنس دانوں کی مقابلہ مضمون نویسی میں غلامی کا شامہ ادا کر دی**

پبلک سروس کمیشن کی جانب سے منعقد کیے گئے مقابلے میں غلامی کا شامہ نے پہلی نمبر پر جیت لیا۔

اسلام آباد (پبلک سروس کمیشن)۔ پبلک سروس کمیشن کی جانب سے منعقد کیے گئے مقابلے میں غلامی کا شامہ نے پہلی نمبر پر جیت لیا۔

مقامی اخبارات کے مطابق، پبلک سروس کمیشن کی جانب سے منعقد کیے گئے مقابلے میں غلامی کا شامہ نے پہلی نمبر پر جیت لیا۔

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ABC

روزنامہ

لاہور پشور سے بھی شائع ہوتا ہے

ایڈیٹر فیض محمد اعجاز

اسلام آباد

ایڈیٹر فیض محمد اعجاز

لاہور پشور سے بھی شائع ہوتا ہے

قیمت 8 روپے

شعبان المعظم 1432ھ 20 جنوری 2011ء 5 مئی 2068ھ ب 256

**مقابلے**

پبلک سروس کمیشن کی جانب سے منعقد کیے گئے مقابلے میں غلامی کا شامہ نے پہلی نمبر پر جیت لیا۔

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**سائنس دانوں کی مقابلہ مضمون نویسی میں غلامی کا شامہ ادا کر دی**

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## **2.0 PMNH Photo Gallery & Press Clipping**



*MoU signing between PMNH and Snow Leopard Foundation on 4<sup>th</sup> January, 2012*



*Whale shark in Karachi, brought to PMNH on 17th February*



*Governor of the Punjab, Sardar Latif Khosa visiting PMNH stall at Spring Flower Festival*



*Lecture on GIS system at PMNH on 16<sup>th</sup> February, Inaugural ceremony of International Training workshop on Modern Research Techniques in Ecology*





*Inaugural ceremony of 3 Days Training Workshop on Gemstone Identification and Evaluation on 8<sup>th</sup> May, 2012*



*Inaugural ceremony of training workshop on Collection, Preservation and Identification of Plant Diversity on 21<sup>st</sup> May, 2012*



*Director General, PMNH during the meeting with delegation*



*Inauguration of Earth Day celebrations in PMNH on 24th April, 2012*





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INTERNATIONAL  
**THE NEWS**

**Saturday**

February 18, 2012

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**ISLAMABAD:** A crane being used to hoist the remains of a dead whale shark for preservation at the Pakistan Museum of Natural History. The forty-foot whale shark, weighing between six and seven tonnes, was found dead in Arabian Sea in the port city of Karachi earlier this month. -- Online

Baluchitherium returns

# World-largest land mammal to go on display in capital

A life-size model of the extinct animal will be put on display at PNHM from Friday

By Irfan Masood

The fossils of a land-based mammal known to have lived, was announced by the Pakistan National History Museum (PNHM) at Islamabad on Friday.

This was said by PNHM director General (DG) Chairman Dr. Irfan Masood on Friday. He said the foundation had prepared a long-term strategy to rehabilitate the fossil to make it go far beyond and go back into the history of the mammal in the world.

The world's largest extinct animal in the world is the Baluchitherium. The fossil was discovered in 1907 in the Baluchistan province. The world's largest extinct animal in the world is the Baluchitherium. The fossil was discovered in 1907 in the Baluchistan province. The world's largest extinct animal in the world is the Baluchitherium.

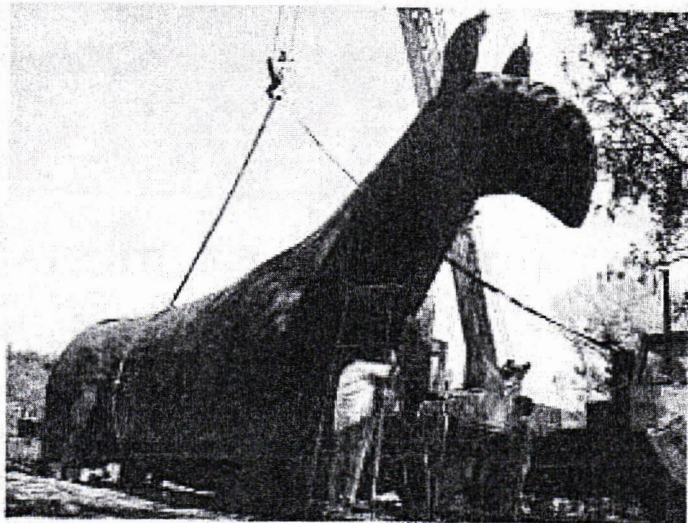
Manufacture of the model is now under way and it will be ready in a few days.

Masood said the model will be the largest of its kind in the world. He said that the model will be helpful in giving the history of modern mammals and its evolution.

Pakistan National History Museum Director General Dr. Irfan Masood said the model will be put on display in the form of a life-size model. He said that the model will be helpful in giving the history of modern mammals and its evolution.

He added that the model will be the largest of its kind in the world. He said that the model will be helpful in giving the history of modern mammals and its evolution.

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PAKISTAN: A part of the Baluchitherium model being moved in the museum premises. Irfan Masood

INTERNATIONAL

# THE NEWS

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Dera Murad Khan 10  
Dera Taqdeer 10  
Dera Aslam 10  
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Dera Taqdeer 10  
Dera Aslam 10  
Dera Ghazi Khan 10  
Dera Nisaran 10  
Dera Tarrin 10  
Dera Yousaf 10

## Illegal wildlife trade causing huge loss to Pakistan

By Irfan Masood

Inspector General Forests Syed Masood Nadeem said environmental crime has been an increasing concern of the international community and governments. "Customs play a vital role to control international trade in environmentally sensitive products regulated by the Multilateral Environmental Agreements, and help in eradicating their illegal trafficking", he added.

He said that the illegal trade of animals, birds and insects, reptiles, fish and other food products is a growing concern of the international community. He said that the illegal trade of animals, birds and insects, reptiles, fish and other food products is a growing concern of the international community.

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In Syed Masood Nadeem, director general of the PNHM, highlighted the expertise available with the PNHM regarding identification, conservation, and documentation of natural resources.

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### **3.0 PASTIC Photo Gallery & Press Clipping**





*Prof. Dr. Manzoor H. Soomro, Chairman, PSF and Mr. Javed Bhatti, President RCCI visiting the stalls at Science & Technology (S&T) Pavilion at Islamabad Expo 2012*



*Prof. Dr. Manzoor H. Soomro, Chairman, PSF, presides over the closing ceremony of S&T pavilion at Islamabad Expo 2012.*





*Inaugural session of the Seminar on "Veterinary Vaccines in Pakistan" on 25th October, 2011 at Islamabad. Dr. Amir Muhammad, Rector, FAST National University presides over.*



*Dr. Akhlaq Ahmad Tarar, Federal Secretary, Science & Technology preside over meeting with PASTIC Officers during his visit to PASTIC.*



*Dr. Manzoor H. Soomro, Chairman, PSF presiding over the Annual Review meeting of PASTIC*



*Mr. Tariq Shafi Chak, Federal Secretary/Executive Director, National Vocational and Technical Training Commission (NAVTTTC) inaugurating the exhibition on Technologies (R&D) for Rice Sector at GCCI, Gujranwala.*





*Inaugural session of Training Workshop on "Library & Information Management" on 5th March, 2012 at QUEST, Nawabshah, Sindh.*



*Ms. Shazia Marri Sindh Minister for Information & Electric Power visits the exhibition of Power Generation organized by PASTIC, IRP and Karachi Chamber of Commerce & Industry*



*A glimpse of PASTIC Service Stall at NIBGE Faisalabad*



*A group photo of the participants of training workshop on "Scientific Image Processing using Adobe Photoshop" organized by PASTIC*



By Sayyed Paras Ali at April 14, 2012 | 2:27 pm |

## **S&T Pavilion projects women entrepreneurs' work**



STAFF REPORT IBD: The Science & Technology (S&T) Pavilion has recently organized by PASTIC in collaboration with Islamabad Women Chamber of Commerce and Industry at Islamabad Expo 2012 in Jinnah Convention Centre Islamabad. Purpose of the pavilion was to provide a market place to the R&D organizations/universities for the promotion of their innovative technologies, products and services to women entrepreneurs. A number of

universities and other institutions across Pakistan fully participated in the event. Prominent were various food processing and preservation technologies, kitchen gardening techniques (NARC and Horticulture Department of Arid University), PCRWR's water testing and purification technologies, Mango Seed oil extraction technology developed by Islamia University having a potential to be used in cosmetic industry as a substitute for cocoa butter that is an expensive imported raw material. Dr. Manzoor Hussain Soomro, Chairman Pakistan Science Foundation, gave the brief overview of PASTIC & PSF. He assured that PASTIC and PSF would extend all cooperation to the women chamber in organizing the exhibitions as well as for skill development of the women entrepreneurs. Samina Fazal, Founder President Islamabad Women Chamber of Commerce and Industry, while addressing the audience at the closing ceremony said that innovations in business should be explored through research & development for the benefit of women entrepreneurs.



# PAKISTAN OBSERVER

EYES & EARS OF PAKISTAN WIDELY READ & TRUSTED DAILY  
Monday, September 10, 2012, Shawal 22, 1433

## PASTIC organizes S&T pavilion

Islamabad—Pakistan Scientific and Technological Information Center (PASTIC) organized Science and Technology (S&T) Pavilion here Monday to provide a market place to the Research and development (R&D) organizations for the promotion of innovative technologies.

The aim of this expo was provision of products and services to the women entrepreneurs and to create awareness amongst women entrepreneurs about R&D developments in different industrial sectors in the country.

Department of Food and Nutrition and Department of Horticulture and Biotechnology of Pir Mehr Ali Shah Arid Agriculture University (PMAS-UAAR), Rawalpindi; Pakistan Council of Renewable Energy Technology (PCRET), Islamabad; Academia Industry Linkage Forum (AILF), Lahore; National Institute of Food and Agriculture (NIFA), Peshawar; Institute of Food and Science Nutrition, University of Sargodha; Pakistan Council of Research in Water Resources (PCRWR), Islamabad; National Agriculture Research Council (NARC); Department of Micro Applied and Environmental Biology, Quaid-e-Azam University (QAU), Islamabad; The Islamia University of Bahawalpur (IUB) and Ek Hunnar Ek Nagar (AHAN), Multan participated in the Exhibition by displaying their products and technologies for women entrepreneurs.

Prominent among them were various food processing and preservation technologies (developed by Institute of Food and Science Nutrition, University of Sargodha, NIFA and Department of Food and nutrition Arid University, Rawalpindi), Kitchen gardening techniques (NARC and Horticulture Department of Arid university), PCRWR's water testing and purification technologies, Mango Seed oil extraction technology developed by Islamia University having a potential to be used in cosmetic industry as a substitute for cocoa butter that is an expensive imported raw material.—APP

INTERNATIONAL  
**THE NEWS**

Monday, April 09, 2012

## S&T pavilion concludes at Expo 2012

Islamabad: Science & Technology (S&T) Pavilion organized by PASTIC in collaboration with Islamabad Women Chamber of Commerce and Industry Expo 2012 at Jinnah Convention Centre Islamabad concludes here on Sunday, says a press release. The main objectives of organizing S&T/R&D Pavilion were to provide a market place to the R&D organizations and universities for the promotion of their innovative technologies, products and services to the women entrepreneurs and to create awareness amongst women entrepreneurs about R&D developments in different industrial sectors in the country. Department of Food & Nutrition and Department of Horticulture & Biotechnology of Pir Mehr Ali Shah Arid Agriculture University (PMAS-UAAR), Rawalpindi; Pakistan Council of Renewable Energy Technology (PCRET), Islamabad; Academia Industry Linkage Forum (AILF), Lahore; National Institute of Food & Agriculture (NIFA), Peshawar; Institute of Food & Science Nutrition, University of Sargodha; Pakistan Council of Research in Water Resources (PCRWR), Islamabad; National Agriculture Research Council (NARC); Department of Micro Applied & Environmental Biology, Quaid-e-Azam University (QAU), Islamabad; The Islamia University of Bahawalpur (IUB) and Ek Hunnar Ek Nagar (AHAN), Multan participated in the exhibition by displaying their products and technologies for women entrepreneurs. PASTIC under its UIP-Programme is involved in building linkages between R&D, university and industry for enhancing innovations, competitiveness and productivity of indigenous technologies. Mrs Samina Fazal, Founder President Islamabad Women Chamber of Commerce and Industry while addressing the audience at the closing ceremony said that innovations in business should be explored through research & development for the benefit of women entrepreneurs.

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## **5-days National Training Workshop on Library Automation Package KOHA concludes**

Posted on Feb 24, 2012 in Uncategorized

Islamabad: Pakistan Scientific and Technological Information Centre, (PASTIC), a subsidiary organization of Pakistan Science Foundation, PSF (Ministry of Science and Technology), specialized in handling and dissemination of scientific information organized a Training/Workshop on the KOHA open source Integrated Library Management System software from 20-24th February 2012.

The objective of the workshop was to acquaint the library and information personnel with information handling and management techniques for enabling the participants to automate their libraries using KOHA software.

KOHA is one of the premiere Integrated Library System software solutions in the world. During the interactive workshop speakers and experts delivered lectures on key modules i.e., Acquisition, Cataloguing, Circulation, Serials Control and OPAC. A total of 25 librarians representing different S and T libraries of Islamabad, Rawalpindi, Bahawalpur, Hyderabad and Lahore attended the training workshop. Distinguished Professor Dr. Aslam Baig, Chairman Department of Physics, Quaid-e-Azam University, Islamabad chaired concluding session of the workshop, held at PSF auditorium on Friday 24th February.

While addressing audience he appreciated services of PASTIC as information provider. He requested the librarians that they should discourage the act of plagiarism. He also distributed certificates to the participants who successfully completed the training.

Mr. Habib Jafferri, Sr Librarian at PASTIC and Chief Organizer of the workshop presented a brief report of the workshop. He hoped that this training will help librarians, to make better use of KOHA for building Integrated Library Management Systems in order to achieve data exchange and better management of their Libraries.

The Director General, PASTIC, Dr. Khalil Ahmad Ibupoto paid thanks to all the guests. He added that PASTIC is further planning to improve the capacity of library professionals by such trainings in near future.

PASTIC has been organizing such workshops from time to time to train the librarians on state-of-the art software's and technologies.

For more information, contact:

Pakistan Science Foundation

1-Constitution Avenue,

Sector G-5/2, Islamabad, Pakistan Tel: + 92 51 9202469-70

Fax: + 92 51 9202468



## **PSF offers institutional support for research in library services**

By Sayyed Paras Ali at February 25, 2012 | 2:51 pm



STAFF REPORT IBD: A 5-day National Training Workshop on Library Automation Package KOHA, organized by Pakistan Scientific and Technological Information Centre (PASTIC), a subsidiary organization of PSF, has been concluded a couple of days back with stressing the need for a consortium of libraries to work together for up-gradation of library services.

Quaid-e-Azam University Vice Chancellor (VC) Prof. Dr. Masoom Yasinzai, while addressing on the occasion as chief guest, said that there should be follow-up of training programmes to fully utilize them and people should not participate in them just to add it in their CVs. He appreciated PASTIC for bringing together library professionals to improve library services.

PSF Chairman Prof. Dr. Manzoor H. Soomro introduced the PSF and its subsidiary organizations – PMNH and PASTIC – and their activities for the promotion and popularization of science and technology.

He assured the participants of full institutional support from PSF for libraries automation in the country. He said that PSF will provide funding for research in the field of library services.

On the occasion, National Library DG Chaudhry Nazir Ahmad said that there is no shortage of funds for libraries at the federal government level, however, there is lack of commitment by the library managers.

### S&T Pavilion projects women entrepreneurs' work

**STAFF REPORT ISB:** The Science & Technology (S&T) Pavilion has recently organized by PASTIC in collaboration with Islamabad Women Chamber of Commerce and Industry at Islamabad Expo 2012 in Jinnah Convention Centre Islamabad. Purpose of the pavilion was to provide a market place for the R&D organizations/universities for the promotion of their innovative technologies, products and services to women entrepreneurs.

A number of universities and other institutions across Pakistan fully participated in the event.

Prominent were various food processing and preservation technologies, kitchen gardening

techniques (NARC and Horticulture Department of Agricultural University), water testing and purification technologies, Mango Seed oil extraction technology developed by Islamia University having a potential to be used in cosmetic industry as a substitute for cocoa butter that is an expensive imported raw material.

Dr. Manzoor Hussain Soomro, Chairman Pakistan Science Foundation, gave the brief overview of PASTIC & PSF. He assured that PASTIC and PSF would extend all cooperation to the women chamber in organizing the exhibitions as well as for skill development of the women entrepreneurs.

### The Daily Larkana Times

Dated: 26-01-2012

## One day awareness seminar held at CMC-SMBBMU

**LARKANA:** One day awareness seminar was held at Chandka Medical College (CMC) - SMBBMU at its Video Conference Hall on 23rd January 2012 with the collaboration of Pakistan Science Foundation and PASTIC. The Seminar was attended by about 55 members of teaching faculty of CMC in which presentations were used by Mr. Aftab

Shaikh, Deputy Director PASTIC, regarding various services provided by PASTIC, and by Dr. Khalid Ahmed Iqbal, DG PASTIC, Member Pakistan Science Foundation on services being offered by Science Foundation for faculty members and for strengthening institutions. Seminar was inaugurated by Dr. Amanullah Jochio, Registrar SMBBMU and

concluding remarks were given by Prof. Assadullah Mahar, Principal CMC. Prof. Khurshid Abbasi was the coordinator of the seminar. It was followed by meeting of the DG PASTIC with honourable Vice Chancellor SMBBMU Prof. Akbar Haider Soomro in which matters of mutual interest were discussed in particular strengthening of SMBBMU.

# DAWN

.com Vol. LXVI No. 99 Islamabad, Jumadi-ul-Awwal 16, 1433 Monday, April 9, 2012 26

## S&T pavilion

ISLAMABAD, April 8: A Science and Technology (S&T) Pavilion organised by Pastic in collaboration with Islamabad Women Chamber of Commerce and Industry during Islamabad Expo 2012 held at Jinnah Convention Centre was closed here.

The main objectives of organising the pavilion were to provide a marketplace to the organisations and universities for promotion of their innovative technologies, products and services for the women entrepreneurs and to create awareness among them about developments in different industrial sectors in the country, said a press release issued here.



# PAKISTAN OBSERVER

EYES & EARS OF PAKISTAN WIDELY READ & TRUSTED DAILY

Wednesday, February 22, 2012, Rabi-ul-Awal 29, 1433

Workshop on library automation

Staff Reporter

Islamabad—A 5-day National Training Workshop on Library Automation Package KOHA, organized by Pakistan Scientific and Technological Information Centre (PASTIC), a subsidiary organization of Pakistan Science Foundation (PSF), started on Monday at PSF.

Quaid-e-Azam University Vice Chancellor (VC) Prof. Dr. Masoom Yasinzai was the chief guest while PSF Chairman Prof. Dr. Manzoor H. Soomro presided over the inaugural ceremony of the workshop.

Addressing the inaugural session of the workshop, Dr. Yasinzai stressed the need for a consortium of libraries to work together for up-gradation of library services.

He also called for grading of libraries in order to strengthen them. Dr. Yasinzai said there should be follow-up of training programs to fully utilize them and people should not participate in them just to add it in their CVs. He congratulated PASTIC for bringing together library professionals to improve library services.

PSF Chairman Prof. Dr. Manzoor H. Soomro introduced the PSF and its subsidiary organizations PMNH and PASTIC activities for promotion and popularization of science and technology. He assured the participants full institutional support from PSF for libraries automation in the country. He said PSF will provide funding for research in the field of library services. He suggested signing of MoUs by the PASTIC, National Library and Department of Libraries in this regard.

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# Workshop on library automation

STAFF REPORTER

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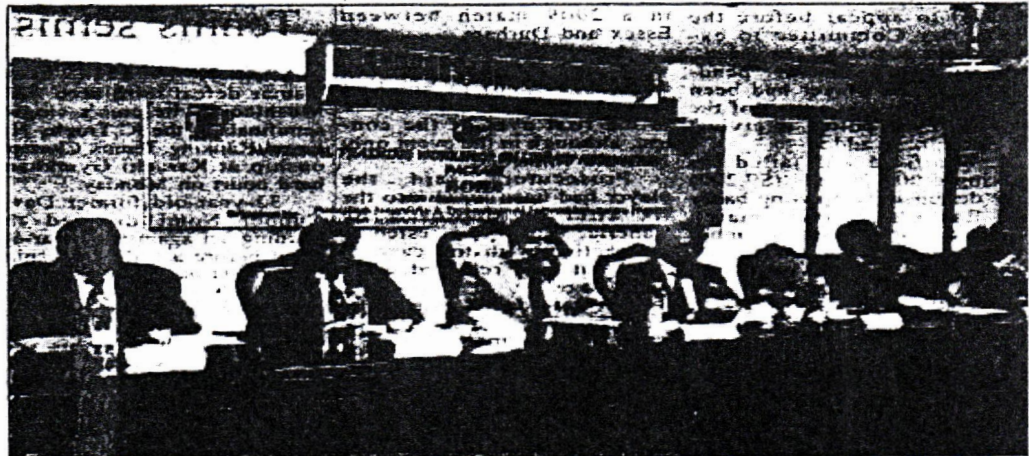
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ISLAMABAD: Participants sitting on a stage during 5-day National Training Workshop on Library Automation Package.



# The Nation Daily Times

Muharram 12, 1413 Tuesday, December 13, 1991

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## S&T books exhibition starts at PASTIC

ISLAMABAD (APP) A two-day exhibition of the latest books in science and technology (S&T) started at Pakistan Scientific and Technological Information Centre (PASTIC), Quaid-i-Azam University, Islamabad, on Monday.

A press release said the PASTIC Director General Dr. Khalil Ahmad Bhopoto inaugurated the exhibition. A large number of students, academicians, scientists and librarians from S&T organisations and educational institutions of the twin cities attended the inaugural ceremony.

PASTIC, a subsidiary organisation of Pakistan Science Foundation (PSF) working under the Ministry of Science and Technology, in collaboration with major book companies has organised the exhibition in order to provide an opportunity to scientists, researchers and students to get updated on the latest S&T publications at one place.

Different book companies including Pak Book Corporation, Saeed Book Bazar, Jinnah Book Company, Australian Book Company, Progressive

International Agencies (Pvt) Ltd, Academic Book Company, Rising Sun Educational Services and Star Books, have set up their stalls in the exhibition with a display of latest books on a variety of S&T subjects.

PASTIC has also set up its stall to provide information to visitors on PASTIC services and fast and easy access to S&T literature.

Talking to media, Dr Bhopoto said mostly S&T books were very expensive and it was difficult for individuals to purchase such publications. He said to overcome this problem they have invited scientists and researchers working in different organisations and students to visit the exhibition and recommend purchase of required books for their own as well as PASTIC library so that maximum people could benefit from this treasure of information and knowledge.

The PASTIC DG said such books' exhibitions were a regular feature of their department to disseminate scientific and technological information for socio-economic development of the country.

## Science books, exhibition attracts students

Staff Report

ISLAMABAD: The 2-day exhibition of latest books on Science and Technology concluded here on Tuesday in Pakistan Scientific and Technological Information Centre, Quaid-i-Azam University, Islamabad.

The exhibition, which was inaugurated by PASTIC Director General Dr. Khalil Ahmad Bhopoto, attracted a large number of students, academicians, scientists and librarians from S&T organisations and educational institutions of the twin cities of Islamabad and Lahore.

PASTIC, a subsidiary organisation of Pakistan Science Foundation (PSF) working under the Ministry of Science and Technology, in collaboration with major book companies arranged the exhibition to provide an opportunity to scientists, researchers and students to get updated on latest S&T publications at one place.

PASTIC had also set up its stall to provide information to visitors on PASTIC services and fast and easy access to S&T literature. Talking to media, Dr Bhopoto said mostly S&T books were very expensive and it was difficult for individuals to purchase such publications.



DAWN FRIDAY FEBRUARY 3, 2012

# Sindh eyes energy surplus by 2020

By Our Reporter

KARACHI, Feb 2: Sindh is framing new 'energy policy' to ensure provision of electricity to its cent per cent population by 2020. The policy aims at providing enabling environment for investors, would soon be unfolded with emphasis on harnessing traditional and renewable energy source to transform Sindh into an energy surplus province, said Provincial Minister for Electric Power Shazia Marri on Thursday.

Speaking at the 5th International Conference on Power Generation Conference the minister said it was envisaged that at least 10 per cent electricity generation should be done through use of wind, solar and biomass by 2015.

She said that the cap on generation capacity of provincial power plant had been removed under the new national power policy and provinces were now free to set up plants of any capacity to meet their needs.

She said that the government was considering the production of biogas from sugar mills distilleries. Marri pointed out that Chinese companies were preparing a paper for power generation through low-head hydel projects at main canals in Sindh as had been done in Germany and other European countries.

Marri said Sindh had cleared all its dues of Wapda and it was the episode of the past. She

emphasised the need for exploring clean, inexpensive, and environment-friendly, and renewable options for electricity generation including the wind and solar resources so that power generation needs of people could be met in the shortest possible time and best possible manner. She said the Sindh had been actively making progress towards exploiting the abundantly available renewable wind power resource in the province and under this initiative; the province would be able to generate 500-MW electricity through wind energy by March 2013.

Chairman Sindh Board of Investment (SBI) Zubair Motiwala said that 20 per cent return on coal projects was ensured and added that at least one coal-fired power plant would be commissioned by 2015-16. He pointed out that 19 companies have submitted a bank guarantee of \$300,000 with the government for setting up renewable energy project in Sindh.

Motiwala informed that the government has canceled more than 33,000 acres of land in wind corridor which was allotted to wind power projects that could not pursue their units.

Other speakers noted that half-hearted energy policies cannot enable Pakistan to sail out from current energy crisis. They also called for full utilisation of existing power generation capacity in the country with the help of effective overhauling and refurbishing of thermal units.



# Provinces now free to generate as much power as they can: minister

By Azeem Samar  
Karachi

At the fifth International Power Generation Conference held on Thursday, the power minister said the generation capacity cap of provincial power plants had been lifted in the light of a new policy.

Speaking as a chief guest, Shazia Marri said that previously there had been a cap of 50 Megawatt (MW) on the electricity generated by provincial power plants, but under the new policy, this cap was no more applicable. The provinces would be at ease to install power generation plants of a capacity that is in line with their energy needs, she added.

Meanwhile, Marri said that under the new restriction-free power generation regime, the Sindh government had prepared a power policy document to efficiently utilise different options and resources in the province.

She also narrated the salient features of the power policy being formulated by the Sindh government, according to which, the provincial government would turn Sindh from the present power deficit to an energy surplus province by ensuring competitive cost of electricity for all sectors.

She also emphasised the need for exploring clean, inex-



Shazia Marri addressing the participants of a seminar — Online photo

pensive, environment-friendly and renewable options of electricity generation, including the wind and solar resources, to meet the power generation needs.

She said that Sindh was making progress towards exploiting the abundantly available renewable wind power resource in the province and under this initiative it would be able to generate 500MW electricity through wind energy by March 2013.

She highlighted that the Musharraf regime only lingered

on the debate of controversial projects such as the Kalabagh Dam instead of taking any substantive actions to add to the power generation capacity of the country while the electricity needs of the nation kept increasing, much to the misery of the general populace.

Chairman Sindh Board of Investment Zubair Motiwala said the present government had offered unprecedented incentives for attracting private and foreign investment to explore the abundantly available Thar coal for electricity generation.

He stressed that meeting energy and electricity demands through expensive and conventional energy resources, including thermal power, was no longer a financially viable option. It was the need of the hour to explore economic resources like Thar coal, he added.

Motiwala also lamented that industries in Karachi recently suffered up to 12 hours of power loadshedding, crippling their industrial productivity, mainly due to the exacerbated power crisis faced by the Karachi Electric Supply Company.

The Consul General of Germany in Karachi, Dr Tilo Klinner, assured all possible support, including equipment and technologies, to explore the non-conventional and cheaper power generation resources.

The German diplomat said that he was fully cognizant of the persisting power crisis in Pakistan. He said that there was an urgent need to take practical steps to overcome the crisis, otherwise the economy would continue to deteriorate.

Dr Qazi Ahmed Kamal of the SITE Association of Industry, underlined the need for exploring the nuclear power generation option so that the ever-rising power needs of the country could be met in the most scientific, clean and economically viable fashion.

He said that Pakistan's nuclear scientists had all the required expertise and knowledge to expand and upgrade the nuclear power generation capacity, once the nuclear plants in Karachi and Chashma were successfully executed.

Chairman Pakistan Science Foundation Dr Manzoor H Soomro, in his speech, shed light on the role of research and development in exploring and testing new, viable and scientific options of power generation for overcoming the burgeoning power crisis of the country.



# Conference speakers concerned over energy crisis

By our correspondent

KARACHI: Speakers at the fifth international power generation conference held on Thursday expressed concerns over the ongoing energy crisis in the country, and said that the current policies and strategies would only worsen the situation.

Dr Tilo Klinner, Consul General of Germany in Karachi, said that electric power is the lifeblood of an economy and Pakistan is going through an unprecedented electricity shortage, disrupting the industrial production, as well as household life.

"These shortages are having an adverse impact on exports. Besides, high energy cost had increased inflation and slowing down economic growth, which had caused joblessness and social unrest," said Dr Klinner.

There has been no fundamental change in the scenario in the last couple of years and it is high time to dedicate all attention towards this issue, he said, adding that a mix of different strategies is needed in this situation.

He also offered all support

and technical solutions in the renewable energy sector to deal with the ongoing energy crisis in the country.

"German companies are keen to cooperate with their Pakistani counterparts. We had already ventured in some projects and there are more to come," he said, adding that Pakistani authorities should focus on materialising the vast potential in the solar, wind energy and coal-fired generation.

Mian Abrar Hussain, President, Karachi Chamber of Commerce and Industry (KCCI), was quite critical of the government as he held the current energy strategies responsible for the collapse of trade and industry in the country.

"The government has miserably failed to deal with the ongoing crisis and the inefficient policies only added to the miseries," said Hussain.

Higher energy cost is causing an annual loss of Rs288 billion that could have been utilised to generate employment for around 10 million youth, he said.

The energy conservation programmes are imprudent in-

fluenced by vested interests and failed to deliver any results," he said.

Dr Naseem Akhtar, Vice Chancellor, Hamdard University, said that Pakistan lacks competent human resource in the energy sector, which is the main reason of flawed policies and their implementation.

Pakistan has unlimited solar and wind energy resources and the same could not be materialised due to unavailability of competent human resource, he said.

Dr Naseem urged the government to take expertise from Germany in the field of renewable energy.

Sindh Minister for Electric Power Shazia Mari, who was the chief guest on the occasion, admitted that there had been mistakes in the past.

"However, it is time to make amendments and the focus of the government is now towards resolving power crisis," she said.

"We are moving in the right direction, but the progress is slow and lengthy as there is no infrastructure and energy security plan in place," said Mari.



## 'Crises can be overcome by generating energy through alternative means'

### RECORDER REPORT

KARACHI: Speakers at conference on power generation suggested that prevailing electricity crises in country could be overcome by generating energy through alternative means as many countries in the world have implemented these alternative energy programmes.

They laid emphasis on exploring and utilizing natural resources, as Pakistan is rich in resources.

The 5th International Power Generation Conference 2012 was organized by organised by Energy Update in collaboration of Pakistan science foundation, Hamdard University and Karachi Chamber of commerce & industries at a local hotel here on

Thursday.

Enlightening the participants about the various channels of generating alternative energy in country, Additional Secretary Ministry of Science and Technology Shaigan Shareef Malik said Karachi to Gwadar coastline has enormous potential for generating wind energy.

"Wind towers can generate between 7,000 to 10,000 mw of electricity. The main challenges are production and availability of wind turbines, safety and security of turbines, transmission lines to feed the national grid, capital cost of the project and long-term maintainability of the project", he underscored.

He said energy is a vital input for economic and social develop-

ment and is therefore, of paramount concern for all.

In fact, no country has been able to substantially reduce poverty without significantly increasing its use of energy, replacing human and animal labour with more efficient forms of energy, he added.

Unfortunately, Pakistan is also facing a major energy crisis in natural gas, power and oil. The high cost of the import of oil, construction of big dams, uncertain regional security environment coupled with lack of national consensus on various issues are likely to impede quick resolution of energy crisis. This energy deficit may lead to inflation thereby impacting the common man and the industry, the additional secretary noted.

He said to improve the situation we have to develop our scientific and technological base, which is the corner stone and prerequisite for development of a country and for globally competitive high quality products and services.

Sindh Minister for Electric Power and Information Ms Shazia Marri said Kalabagh dam was an option and it was not adopted due to lack of consensus.

She said this is not wise to opt one option as other options like wind hydro are there, adding the experts of Punjab also rejected Kala Bag Dam. However, Ghazi-Barotha Hydropower Project is people friendly and environmental friendly as well.

The government should not be blamed since it increased 3000 mw in last years, she noted.

She said there is need to analyze ourselves where we are wrong. We are accountable to people, Marri added.

Describing short-term plan, she said the government is working on gas-base power projects including biogas and low and

high hydal projects.

She, however, claimed that Sindh would have 100 power supply by the year of 2020.

Earlier, President KCCI Mian Abrar Ahmed said electricity or power energy is a lifeline for any country.

The industries owing to prolonged power and gas load shedding have been brought to the verge of closure. If this crisis situation is not addressed on war footing it might lead to closures and lay-off of workers which may also cause unrest.

During last more than one quarter, all the seven industrial zones are facing KESC's industrial load shedding. The production losses have been, estimated in billions of rupees.

He said since year 2006, the National Forefront is facing a disturbance in the demand and supply of power and we have not witnessed a breakthrough to handle the situation.

According to analysts, Pakistan is facing annually losses or damages in monetary terms of more than 288 billion rupees. If it is calculated on monthly basis the estimated loss is around 24 billion and daily 800 million rupees, he added.

Chairman Board of Investment Govt. of Pakistan Guest of Honour Zubair Motiwala said we have furnace oil capacity but they are not functioning due to circular debt. He said the Thar coal is energy solution of Pakistan if be utilised at optimum level.

Chairman Pakistan Science Foundation (PSF) Dr. Manzoor H. Soomro, Abdullah Yousuf Chairman IPP's Advisory council, Arfi Alauddin CEO Alternate energy development board and others also spoke.

University Industry Programme (UIP) Exhibition on Innovation Energy Solution was also organised on the occasion.

## Scientists imparted training on digital photography

**STAFF REPORT IBD:** The Pakistan Scientific and Technological Information Centre (PASTIC), Quaid-i-Azam University, Islamabad, has recently organized a three-day training course on the theme of "Art of Scientific Digital Photography with Advanced features".

The objective of the event was to train the scientists in the field of digital photography for better representation of their research work through professional techniques, an official of the training team said.

Maqsood Ahmed a senior photographer having 30 years of hands on experience in the field of scientific photography

was invited as a resource person.

Director General, PASTIC, Dr. Khalil Ahmad Iqbal inaugurated the training while a number of scientists and researchers from PASTIC, Pakistan Museum of Natural History (PMNH) and Pakistan Science Foundation (PSF) participated in the training course.

The participants learnt various facets of scientific photography in terms of fixed point and field photography. They practised their learning about the subject in the field through group work.

At the end of the training, certificates were awarded to the participants.

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**Wednesday**

October 26, 2011

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## Seminar on veterinary vaccines

Islamabad

Pakistan Science Foundation (PSF) and Pakistan Scientific & Technological Information Centre (PASTIC), in collaboration with the Institute of Research Promotion (IRP), organised a one-day seminar on 'Veterinary Vaccines in Pakistan' here on Tuesday, says a press release.

The PSF, PASTIC and IRP under their University Industry Partnership (UIP) Programme aimed to develop a cooperation between research objectives and the industry scientists and research administration research with industry needs/requirements.

The dignitaries taking part were Dr. Amir Mahmood Siddiqui, Director General, Pakistan Veterinary University, Islamabad; Dr. Masroor El Siddique, Chairman, PSF; Dr. Khalid Ahmed Imtiaz, Director General, PASTIC; Ghulam Qadir Qazi, Vice-Chancellor, Alama Iqbal Open University, Islamabad; Dr. Muhammad Atiq, Director, Project Consultant and SQA, Aariz Inbred Sperm Bank, Islamabad.

The main objectives of the seminar was to bring forward R&D issues in veterinary vaccines in Pakistan and highlight areas of priority and target areas to enable likelihood of collaboration between R&D and industry.



FOUNDED BY QUAID-I-AZAM MOHAMMAD ALI JINNAH

# DAWN

Vol. LXX No. 296, Islamabad, Pakistan, 27, 1433, Wednesday, October 26, 2011

## Importance of livestock vaccination highlighted

By Our Reporter

ISLAMABAD, Oct 25. The participants of a seminar emphasised the need to launch drive to vaccinate the livestock for effective control of diseases.

Pakistan Science Foundation and Pakistan Scientific and Technological Information Centre (PASTIC) organised the seminar on veterinary vaccines in Pakistan in collaboration with the Institute of Research Promotion here on Tuesday.

The speakers at the seminar urged that the vaccine producing institutions

must be strengthened and upgraded. They said that the public sector should improve quality and quantity of vaccine production in the country.

The seminar's main objective was to bring forward research and development issues in veterinary vaccines in Pakistan by highlighting areas of priority with the particular reference to the possible collaboration between research and development, and the industry.

Participants of the seminar drawn from Veterinary Research Institute, Lahore and Peshawar, National

Veterinary Laboratory and the researchers from NARC, NUST, ISRA and Quaid-e-Azam University.

Rector of FAST University Dr Amir Muhammad highlighted the importance of quality vaccines for better health of livestock in the country. Others who spoke on the occasion included PSF Chairman Dr Mansoor H Soomro, PASTIC Director-General Dr Khalil Ahmed Iqbal, Vice Chancellor of ISRA University, Ghulam Qadar Qari, Dr Muhammad Afzal of FAO and ROCI Vice President Raja Amir Iqbal.

# Dateline Islamabad

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## Call to resolve veterinary vaccines issues

### ■ DATELINE REPORT

ISLAMABAD → The Pakistan Science Foundation (PSF) and Pakistan Scientific and Technological Information Centre (PASTIC) in collaboration with the Institute of Research Promotion (IRP) organized a daylong seminar on Veterinary Vaccines in Pakistan Tuesday at the Pakistan Science Foundation.

The seminar was held under the University Industry Partnership (UIP) Programme.

The purpose of the seminar was to develop a correlation between research objectives and the industry priorities and match Research and Development/university research with industry needs/problems.

Dr. Amir Muhammad Rector FAST National University (Chief Guest), Dr. Manzoor H. Soomro Chairman PSF, Dr. Khalil Ahmed Ibupoto Director-General PASTIC, Ghulam Qadar Qazi Vice-Chancellor Isra University, Dr. Muhammad Afzal FAO-FMD Project Consultant and Raja Aamir Iqbal Senior Vice President ROCI attended the seminar.

The objectives were to bring forward R&D issues in veterinary vaccines in Pakistan and highlight areas of priority and urgent need to enable likelihood of collaboration between R&D and Industry.

The experts urged the need for taking concrete steps to bridge the gaps in research in Pakistan, saying it will pave way for promoting modern techniques among the farmer community.

The major issues discussed were vaccine production facilities of public and private sector and vaccines production technology quality assurance vaccination awareness.

They said that a series of such gatherings should be held in remote parts of the country.

The speakers said there was a dire need for educating farmers and a national and provincial disease control programme should be launched through mass vaccination.

## **VI. AUDITOR'S REPORT**



## 1.0) PSF Financial Statements

### PAKISTAN SCIENCE FOUNDATION FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2012

Amir Alam Khan & Co.  
Chartered Accountants  
507, Bank Road Rawalpindi  
Tel: 9923402, 9163294  
Fax: 9917359  
Email: aakc@streamline.pk

#### AUDITORS' REPORT TO THE TRUSTEES

We have audited the annexed balance sheet of PAKISTAN SCIENCE FOUNDATION as at June 30, 2012 and the related income and expenditure account and cash flow statement together with notes forming part thereof (hereinafter referred to as financial statements) for the year then ended, and we state that we have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit.


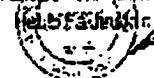
It is the responsibility of the management to establish and maintain a system of internal control, and prepare and present the financial statements in conformity with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting policies used and significant estimates made by management, as well as, evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion and after due verification, we report that:

In our opinion and to the best of our information and according to the explanation given to us, these financial statements give the information as required and present fairly in all material respects the financial position of the PAKISTAN SCIENCE FOUNDATION as at June 30, 2012 and of its deficit and cash flow for the year then ended in accordance with the approved accounting standards as applicable in Pakistan.

Rawalpindi

5/1/12

  
Amir Alam Khan & Co.  
Chartered Accountants  
(Firm Registered in  
)


**PAKISTAN SCIENCE FOUNDATION  
BALANCE SHEET AS AT JUNE 30, 2012**

	Note	2012 Rupees	2011 Rupees
<b>FUNDS</b>			
General fund	3	22,210,154	24,235,426
Development fund	4	9,883,097	11,742,634
Fair fund	5	-	4,829
ECO science foundation fund		1,550	1,494
Miscellaneous funds	6	2,423,745	556,124
		<b>34,518,556</b>	<b>36,543,507</b>
<b>NON-CURRENT LIABILITIES</b>			
Research support grant - Contra	9	156,417,975	141,348,375
Long term security deposits		27,300	59,500
		<b>156,445,275</b>	<b>141,407,876</b>
		<b>190,963,831</b>	<b>177,948,383</b>
<b>NON-CURRENT ASSETS</b>			
Property, plant and equipment	7	19,800,255	21,483,782
Long term security deposits	8	1,917,195	1,917,195
Research projects in progress - Contra	9	156,417,975	141,348,375
		<b>178,135,425</b>	<b>164,754,353</b>
<b>FUNDS INVESTMENTS</b>			
Development fund	4	9,883,097	11,742,634
ECO science foundation fund		1,550	1,494
Fair fund	5	-	4,829
Miscellaneous funds	6	2,423,745	556,124
		<b>12,306,392</b>	<b>12,305,081</b>
<b>CURRENT ASSETS</b>			
Advances - staff	10	485,599	795,034
Cash and bank balances	11	34,415	93,915
		<b>520,014</b>	<b>888,949</b>
		<b>190,963,831</b>	<b>177,948,383</b>

The annexed notes from 1 to 15 form an integral part of these financial statements

Islamabad

  
\_\_\_\_\_  
TRUSTEE

  
\_\_\_\_\_  
CHAIRMAN


**PAKISTAN SCIENCE FOUNDATION  
INCOME AND EXPENDITURE ACCOUNT  
FOR THE YEAR ENDED JUNE 30, 2012**

	Note	2012 Rupees	2011 Rupees
<b>INCOME</b>			
Grant from federal government		153,001,000	146,085,000
<b>EXPENDITURES</b>			
Statutory scientific functions	12	(55,075,480)	(69,514,367)
Administrative expenses	13	(95,846,891)	(73,208,726)
Written down value of disposed asset (vehicle)		(13,074)	-
Advances written off		(90,817)	-
		<u>(155,026,262)</u>	<u>(147,723,092)</u>
<b>DEFICIT FOR THE YEAR</b>		<u>(2,025,262)</u>	<u>(1,638,092)</u>

The annexed notes from 1 to 15 form an integral part of these financial statements

Islamabad,

  
TRUSTEE

  
CHAIRMAN



**PAKISTAN SCIENCE FOUNDATION  
CASH FLOW STATEMENT  
FOR THE YEAR ENDED JUNE 30, 2012**

	2012 Rupees	2011 Rupees
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>		
Deficit for the year	(2,025,252)	(1,552,067)
Adjustments for non cash charges:		
Depreciation	1,675,452	4,261,353
Written down value of disposed asset (vehicle)	13,074	-
Advances written off	20,817	-
Surplus before working capital changes	(245,919)	2,989,331
<b>Working capital changes</b>		
Increase/ (decrease) in current liabilities:		
(Increase)/ decrease in current assets:		
Advances - staff	218,619	(384,557)
Net working capital changes	218,619	(384,557)
Net cash generated from operating activities	(27,301)	2,314,774
<b>CASH FLOW FROM INVESTING ACTIVITIES</b>		
Property, plant and equipment	-	(128,084)
Intangible Assets	-	(750,000)
Capital work in progress	-	750,000
Net cash used in investing activities	-	(128,084)
<b>CASH FLOW FROM FINANCING ACTIVITIES</b>		
Long term security deposits	(32,206)	32,200
Net cash from financing activities	(32,206)	32,200
<b>NET DECREASE IN CASH AND CASH EQUIVALENTS</b>	(59,500)	2,219,890
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF THE YEAR</b>	93,915	(2,124,975)
<b>CASH AND CASH EQUIVALENTS AT END OF THE YEAR</b>	34,415	93,915

The annexed notes from 1 to 15 form an integral part of these financial statements

Islamabad.

  
TRUSTEE

  
CHAIRMAN

**PAKISTAN SCIENCE FOUNDATION**  
**NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2012**

**1. THE FOUNDATION AND ITS OPERATIONS**

Pakistan Science Foundation is a statutory organization established under Pakistan Science Foundation Act 1973 on February 02 1973. The main objects are to promote and finance scientific activities having a bearing on the socio-economic needs of the country.

**2. SIGNIFICANT ACCOUNTING POLICIES**

The principal accounting policies which have been adopted in the preparation of these financial statements are summarized as under:

**2.1 ACCOUNTING CONVENTION**

These financial statements have been prepared under the historical cost convention.

**2.2 BASIS OF PREPARATION**

These financial statements have been prepared in accordance with approved accounting standards, as applicable in Pakistan. Approved accounting standards comprise of Accounting and Financial Reporting Standard for Small-Sized Entities (SSE) issued by Institute of Chartered Accountants of Pakistan and provisions of and directives issued under the Companies Ordinance, 1984. In case requirements differ, the provisions or directives of the Companies Ordinance, 1984 shall prevail.

**2.3 PROPERTY, PLANT AND EQUIPMENT**

These are stated at cost less accumulated depreciation except leasehold land which is stated at cost. Depreciation is charged on reducing balance method of written down values depending upon the class of property, plant and equipment. Full year's depreciation is charged on additions while no depreciation is charged on deletions during the year.

Normal repairs and maintenance are charged to income as and when incurred. Major renewals and improvements are capitalized. Gain or loss, if any, on disposal of property, plant and equipment is taken to income and expenditure account.

**2.4 INTANGIBLE ASSETS**

These are stated at cost less accumulated amortization. Amortization is charged on reducing balance method from the year of commercial use at the annual rate of 10%. Gain or loss, if any, on disposal of intangibles are included in the current income.

	2012 Rupees	2011 Rupees
<b>3. GENERAL FUND</b>		
Opening balance	24,235,426	25,673,518
Deficit for the year	<u>(2,025,262)</u>	<u>(1,533,092)</u>
	<u>22,210,164</u>	<u>24,235,426</u>
<b>4. DEVELOPMENT FUND</b>		
Opening balance	11,742,634	14,156,366
Grants received during the year:		
Participation of scientists and technologists in conferences	3,000,000	1,120,000
	14,742,634	15,276,366
Expenditure incurred during the year	<u>(4,859,537)</u>	<u>(3,533,732)</u>
	<u>9,883,097</u>	<u>11,742,634</u>

		2012 Rupees	2011 Rupees
<b>4.1 EXPENDITURE INCURRED DURING THE YEAR</b>			
	TA/DA and evaluation fee	2,092,535	508,858
	Registration fee	417,426	80,179
	Postage and stationery	30,000	7,542
	Depreciation	1,792,037	2,186,843
4.2	Amortization	67,500	75,000
4.3	Miscellaneous	31,823	129,305
	Refund to Government	-	233,113
	Living expenses	516,216	308,294
		<u>4,859,537</u>	<u>3,533,732</u>
<b>REPRESENTED BY:</b>			
	Property, plant and equipment	9,225,477	11,017,514
	Intangibles	667,500	675,000
	Cash at banks	50,120	50,120
		<u>9,883,097</u>	<u>11,742,634</u>

**4.2 PROPERTY, PLANT AND EQUIPMENT**

PARTICULARS	COST			R A T E %	DEPRECIATION				W.D.V	
	AS AT JULY 01, 2011	REVALUED 31.03.2012	AS AT JUNE 30, 2012		AS AT JULY 01, 2011	REVALUED 31.03.2012	FOR THE YEAR 2012	AS AT JUNE 30, 2012		AS AT JUNE 30, 2012
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.		Rs.
Land/plot	6,44,353	-	6,44,353	20	5,40,075	-	104,444	5,39,631	201,774	
Other equipment	24,35,380	-	24,35,380	15	15,81,767	-	1,064,894	14,75,273	7,77,104	
Computer equipments	6,17,175	-	6,17,175	30	1,94,504	-	301,095	4,22,671	420,488	
Furniture and fixtures	24,187	-	24,187	5	12,108	-	13,079	12,029	244,539	
<b>2012 - Rupees</b>	<b>34,36,795</b>	<b>-</b>	<b>34,36,795</b>		<b>23,38,454</b>	<b>-</b>	<b>1,789,522</b>	<b>26,97,331</b>	<b>8,235,497</b>	
<b>2011 - Rupees</b>	<b>6,35,741</b>	<b>-</b>	<b>6,35,741</b>		<b>21,22,641</b>	<b>-</b>	<b>2,19,543</b>	<b>23,70,194</b>	<b>11,017,514</b>	

**4.3 INTANGIBLE ASSETS**

PARTICULARS	COST			R A T E %	AMORTIZATION				W.D.V
	As at July 01, 2011	Addition	As at June 30, 2012		As at July 01, 2011	Amortization	For the year 2012	As at June 30, 2012	
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.	
Software	75,000	-	75,000	10	75,000	-	67,500	7,500	67,500
<b>2012 - Rupees</b>	<b>75,000</b>	<b>-</b>	<b>75,000</b>		<b>75,000</b>	<b>-</b>	<b>67,500</b>	<b>7,500</b>	<b>67,500</b>
<b>2011 - Rupees</b>	<b>75,000</b>	<b>-</b>	<b>75,000</b>		<b>75,000</b>	<b>-</b>	<b>75,000</b>	<b>75,000</b>	<b>67,500</b>

**5. FAIR FUND**

Opening balance	4,829	258,763
Profit received during the year	-	9,857
Transfer to Miscellaneous funds	(4,829)	(263,821)
	<u>-</u>	<u>4,829</u>
<b>REPRESENTED BY:</b>		
Cash at bank	-	4,829



	2017 Rupees	2011 Rupees
<b>6. MISCELLANEOUS FUNDS</b>		
Opening balance:		
Endowment	552,332	275,167
UNESCO	3,792	455,044
	556,124	734,731
Grants received during the year:		
Endowment	133,044	274,476
PSF France mutual collaboration activities	1,431,981	-
UNESCO	1,553,000	160,000
	3,118,025	434,476
Expenditure incurred during the year:		
Endowment	(355,950)	(1,321)
PSF France mutual collaboration activities	(576,116)	-
UNESCO	(316,338)	(611,252)
	(1,250,404)	(612,583)
Closing balance:		
Endowment	329,426	552,332
PSF France mutual collaboration activities	853,865	-
UNESCO	1,240,454	3,792
	2,423,745	556,124
<b>REPRESENTED BY:</b>		
Cash at bank	2,426,745	556,124
Tender money payable	(3,000)	-
	2,423,745	556,124

**7. PROPERTY, PLANT AND EQUIPMENT**

PARTICULARS	C O S T				H A I R	D E P R E C I A T I O N				W O V
	AS AT	AS AT	AS AT	AS AT		AS AT	FOR THE	AS AT	AS AT	
	JULY 31, 2011	APRIL 30, 2012	JUNE 30, 2012	%		JULY 31, 2011	YEAR 2012	JUNE 30, 2012	JULY 31, 2012	
Land	3,712,470	-	3,712,416	-	-	-	-	3,712,416		
Buildings	19,462,562	-	19,468,546	0	10,878,274	-	42,243	19,326,272		
Machinery	11,713,452	146,400	9,701,902	20	6,493,157	(601,425)	624,907	6,891,732		
Plant and equipment	5,822,112	-	2,939,012	15	4,229,810	-	124,714	4,421,753		
Transportation	8,526,040	-	6,532,840	15	4,568,153	-	247,463	4,815,136		
Furniture and fixtures	3,571,314	-	3,026,314	6	1,929,442	-	85,322	1,746,425		
Other assets	154,874	-	154,874	20	152,945	-	17	154,822		
Less: Depreciation	1,784,170	-	1,784,170	5	571,528	44,144	140,244	647,427		
<b>2012 - Rupees</b>	<b>50,928,565</b>	<b>146,400</b>	<b>50,958,068</b>		<b>25,218,763</b>	<b>(151,425)</b>	<b>1,675,432</b>	<b>23,262,810</b>		
<b>2011 - Rupees</b>	<b>32,640,421</b>	<b>1,29,174</b>	<b>32,522,522</b>		<b>24,275,429</b>	<b>-</b>	<b>2,194,715</b>	<b>27,136,792</b>		

	2012 Rupees	2011 Rupees
<b>8. LONG TERM SECURITY DEPOSITS</b>		
Electricity	1,472,195	1,472,195
Gas	145,936	145,936
CWA Rawalpindi	300,000	300,000
	1,917,195	1,917,195

		2012 Rupees	2011 Rupees
<b>9 RESEARCH PROJECTS IN PROGRESS</b>			
Opening balance		141,346,376	119,494,272
Add: Disbursements during the year	9.1	26,110,239	50,339,873
		<u>167,456,615</u>	<u>169,834,145</u>
Less: Projects completed during the year	9.2	(7,245,767)	(17,208,485)
Expenses for projects	9.3	(3,794,873)	(11,777,254)
		<u>(11,040,640)</u>	<u>(28,985,739)</u>
		<u>156,417,975</u>	<u>141,348,375</u>
<b>9.1 DISBURSEMENTS DURING THE YEAR</b>			
Institutional support		2,306,740	9,496,135
Biotech sciences		3,117,350	2,523,750
Evaluation fee		593,060	439,500
Physical sciences		683,326	2,566,641
Chemical sciences		295,000	5,945,342
Biological sciences		7,235,188	9,383,088
Earth sciences		746,402	1,774,058
Environmental sciences		815,636	2,573,344
Engineering sciences		534,645	2,449,180
Agricultural sciences		3,740,000	4,550,244
Medical sciences		2,367,240	5,738,442
Math and Computer science		961,200	-
Board/Committee meetings		895,133	1,341,649
Utilization of results of research and transfer of technology and pilot plant study		1,819,379	2,138,500
		<u>26,110,239</u>	<u>50,339,873</u>
<b>9.2 PROJECTS COMPLETED DURING THE YEAR</b>			
Biotech sciences		-	5,430,765
Agricultural sciences		1,041,000	-
Chemical sciences		-	982,837
Engineering		-	1,473,968
Environmental sciences		2,970,000	-
Biological sciences		1,046,091	3,267,581
Medical sciences		2,188,676	-
Utilization of results of research and transfer of technology and pilot plant study		-	6,263,534
		<u>7,245,767</u>	<u>17,208,485</u>
<b>9.3 EXPENSES FOR PROJECTS</b>			
Institutional support		2,306,740	9,496,135
Board/committee meetings		895,133	1,341,649
Evaluation fee		593,000	439,500
		<u>3,794,873</u>	<u>11,277,284</u>
<b>10. ADVANCES - STAFF</b>			
For vehicles		485,599	794,802
For cycle		-	732
		<u>485,599</u>	<u>795,534</u>

	2017	2016
	Rupees	Rupees
<b>11. CASH AND BANK BALANCES</b>		
Cash in hand	34,415	31,415
Cash at bank - current account	-	22,900
	<u>34,415</u>	<u>54,315</u>
<b>12. STATUTORY SCIENTIFIC FUNCTIONS</b>		
Research support grant	25,110,230	10,029,970
Exchange of visits of scientists and technologists	925,490	1,430,155
Scientific societies and professional bodies	2,325,000	1,707,000
Scientific conferences, meetings and seminars	4,654,300	2,335,655
Operation of scientific museum	4,263,245	3,121,147
Science promotion activities	19,674,539	4,163,125
International fairs	210,441	1,19,233
Science fairs	2,023,092	1,619,774
Awards, prizes and fellowship	234,000	2,812,000
Inventions and innovations	325,000	1,125,000
Scope of scientific survey and collection of statistics	-	704,051
Subscription to international organization for UNESCO program	89,625	126,957
Services centre herbaria, plantaria	2,273,510	237,550
	<u>55,075,403</u>	<u>56,514,365</u>
<b>13. ADMINISTRATIVE EXPENSES</b>		
Salaries and other benefits	73,136,350	58,706,726
Traveling	499,720	349,775
House rent holiday	17,016,991	5,968,204
Ground rent to CDA	120,461	126,429
Electricity, gas and water	1,193,458	1,257,586
Communication	1,311,720	1,531,261
Printing and stationery	329,940	151,319
Vehicle running and maintenance	2,212,905	1,309,509
Newspapers and magazines	97,900	67,323
Leaves and uniforms	35,000	126,407
Entertainment	182,618	267,362
Repair and maintenance	1,019,443	1,143,204
Audit fee	51,000	47,000
Legal charges	175,000	34,000
Staff welfare fund	276,239	630,700
Advertisement and publicity	230,000	311,574
Miscellaneous	214,536	230,484
Spouse grant	-	1,000,000
Depreciation	1,675,452	2,054,765
	<u>99,846,651</u>	<u>78,209,725</u>



14. DATE OF AUTHORIZATION FOR ISSUE

These financial statements have been authorized for issue on 15-01-2012 by the Board of Trustees

15. FIGURES

In these financial statements figures have been rounded off to the nearest rupee and those of the previous year have been re-arranged and re-grouped wherever necessary to facilitate comparison.

Islamabad,

  
TRUSTEE

  
CHAIRMAN

Amir Ali Khan & Co.  
Chartered Accountants  
52/1 Bank Road, Rawalpindi  
Tele: 5503490, 5503258  
Fax: 5517338  
E-mail: aaeco@pubtrk.com

#### AUDITORS' REPORT TO THE MEMBERS


We have audited the annexed balance sheet of NATURAL SCIENCES LINKAGE PROGRAMME as at June 30, 2012 and the related income and expenditure account, cash flow statement and statement of changes in accumulated fund together with notes forming part thereof, hereinafter referred to as financial statements for the year then ended, and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit.

It is the responsibility of the management to establish and maintain a system of internal control and prepare and present the financial statements in conformity with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amount and disclosures in the financial statements. An audit also includes assessing the accounting policies used and significant estimates made by management, as well as, evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion and after due verification, we report that:

In our opinion and to the best of our information and according to the explanation given to us, these financial statements give the information as required and present fairly in all material respects the financial position of the NATURAL SCIENCES LINKAGES PROGRAMME as at June 30, 2012 and of its surplus for the year then ended in accordance with the approved accounting standards as applicable in Pakistan.

Rawalpindi,  
September 27, 2012

  
(Amir Ali Khan & Co.)  
Chartered Accountants  
Head Office: Rawalpindi

PAKISTAN SCIENCE FOUNDATION  
 NATIONAL SCIENCE FOUNDATION  
 BALANCE SHEET AS AT JUNE 30, 2012

	2011	2012	2011
		Rs.000	Rs.000
ACCUMULATED FUNDS		692,980,673	681,430,602
<b>NON-CURRENT ASSETS</b>			
Property, plant and equipment	3	528,166	193,155
Long term investment	4	500,000,000	500,000,000
		500,528,166	500,193,155
<b>CURRENT ASSETS</b>			
Advances to Staff		195,815	-
Cash at bank - deposit		192,258,692	151,197,247
		692,980,673	681,430,602

The annexed notes from 1 to 7 form an integral part of these financial statements.

Islamabad, Sept. 25, 2012.

MEMBER FINANCE  
 MEMBER F.M.C.

**HAZUL ISLAM**  
 Member Finance  
 Pakistan Science Foundation  
 Ministry of Science & Technology  
 Islamabad

CHAIRMAN / CHIEF EXECUTIVE  
 NSRF ENDOWMENT FUND





PAKISTAN SCIENCE FOUNDATION  
 INSTITUTE FOR SCIENCE AND TECHNOLOGY  
 INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED JUNE 30, 2012

	NOTE	2012 Rupees	2011 Rupees
Profit on investment		81,000,000	25,000,000
Profit on donation account		8,448,162	0,000,000
		89,448,162	25,000,000
Operating expenses	5	7,447,236	4,877,347
Project funding	6	30,956,755	27,000,000
		38,397,991	31,877,347
Surplus for the year		51,050,171	25,616,810

The annexed notes from 1 to 7 form an integral part of these financial statements.

Islamabad, Sept. 28, 2012

  
 MEMBER FINANCE  
 MEVSEER P.M.C.  
 MAZUL ISLAM  
 Member Firmec  
 Pakistan Science Foundation  
 Ministry of Science & Technology  
 Islamabad

  
 CHAIRMAN/CHIEF EXECUTIVE  
 NSIP ENDOWMENT FUND

PAKISTAN SCIENCE FOUNDATION  
 1990 ESTABLISHED BY GOVERNMENT OF PAKISTAN  
 CASH FLOW STATEMENT FOR THE YEAR ENDED JUNE 30, 2012

	2012 Rupees	2011 Rupees
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>		
Surplus for the year	31,650,171	31,596,219
Adjustments of non-cash:		
Depreciation	231,999	319,156
Operating surplus before working capital changes	<u>31,882,170</u>	<u>31,915,375</u>
<b>Working capital changes:</b>		
<b>(increase)/decrease in current assets:</b>		
Advances	(195,815)	-
<b>Increase/(decrease) in current liabilities:</b>		
Net working capital changes	(195,815)	-
Net cash generated from operating activities	<u>31,686,345</u>	<u>31,915,375</u>
<b>CASH FLOW FROM INVESTING ACTIVITIES</b>		
Property, plant and equipment	(25,000)	(1,18,969)
Net cash used in investing activities	<u>(25,000)</u>	<u>(1,18,969)</u>
<b>NET INCREASE IN CASH AND CASH EQUIVALENTS</b>	<b>31,661,345</b>	<b>31,796,406</b>
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF THE YEAR</b>	<b>161,197,347</b>	<b>129,390,941</b>
<b>CASH AND CASH EQUIVALENTS AT END OF THE YEAR</b>	<b><u>192,858,692</u></b>	<b><u>161,187,347</u></b>

The annexed notes from 1 to 7 form an integral part of these financial statements.

isamaad Sept 28, 2012 -

MEMBER FINANCE  
 MEMBER F.M.C.  
 AZUL ISLAM  
 Member Finance  
 Pakistan Science Foundation  
 Institute of Science & Technology  
 Islamabad


CHAIRMAN F.C.-EF EXECUTIVE  
 NRLF ENVIRONMENT FUND

PAKISTAN SCIENCE FOUNDATION  
 STATEMENT OF CHANGES IN ACCUMULATED FUND FOR THE YEAR ENDED JUNE 30, 2012

	Endowment fund	Generated	Total
	Rupees		
Balance as at June 30, 2010	500,000,000	125,334,631	625,334,631
Surplus for the year		35,865,819	35,865,819
Balance as at June 30, 2011	500,000,000	161,930,502	661,930,502
Surplus for the year		31,050,171	31,050,171
Balance as at June 30, 2012	500,000,000	192,980,673	692,980,673

The annexed notes from 1 to 7 form an integral part of these financial statements.

Islamabad, Sept 28, 2012

  
 MEMBER FINANCE  
 MEMBER F.M.C.  
 MAZUL ISLAM  
 Member Finance  
 Pakistan Science Foundation  
 Ministry of Science & Technology  
 Islamabad

  
 CHAIRMAN/CHIEF EXECUTIVE  
 NSLP ENDOWMENT FUND



PAKISTAN SCIENCE FOUNDATION  
NATURAL SCIENCES LINKAGE PROGRAMME  
NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2012

**1. STATUS AND OBJECTIVES**

Natural Sciences Linkage Programme (NSLP) was established in November 2009 for cooperation in the field of natural sciences as joint operating arrangement between The Ministry of Science and Technology (Government of Pakistan) and United States Department of Agriculture. NSLP is a subsidiary of Pakistan Science Foundation (PSF) which directly oversees the administration of NSLP.

**2. SIGNIFICANT ACCOUNTING POLICIES**

The principal accounting policies which have been adopted in the preparation of these financial statements are summarized as under:-

**2.1 ACCOUNTING CONVENTION**

These financial statements have been prepared under the historical cost convention.

**2.2 BASIS OF PREPARATION**

These financial statements have been prepared in accordance with approved accounting standards, as applicable in Pakistan. Approved accounting standards comprise of Accounting and Financial Reporting Standard for Small-Sized Entities (SSE) issued by Institute of Chartered Accountants of Pakistan and provisions of and directives issued under the Companies Ordinance, 1984. In case requirements differ, the provisions or directives of the Companies Ordinance, 1984 shall prevail.

**2.3 PROPERTY, PLANT AND EQUIPMENT**

These are stated at cost less accumulated depreciation except leasehold land, which is stated at cost. Depreciation is charged on reducing balance method on written down values depending upon the class of property, plant and equipment. Full year's depreciation is charged on additions while no depreciation is charged on deletions during the year.

Normal repairs and maintenance are charged to income and expenditure account as and when incurred. Major renewals and improvements are capitalized. Gain on disposal of property, plant and equipment is taken to income and expenditure account.

**2.4 REVENUE RECOGNITION**

Fees and grants are recognized on receipt basis. Other income is recognized on actual basis.

PROPERTY, PLANT AND EQUIPMENT

Particulars	2012			2011		
	Cost	Accumulated Depreciation	Net Book Value	Cost	Accumulated Depreciation	Net Book Value
Cost	1,138,344	27,741	1,166,085	26,457	27,741	29,116
Accumulated Depreciation		27,741		27,741	27,741	
Net Book Value			1,138,344			29,116
Cost	27,741		27,741	27,741		27,741

4. LONG TERM INVESTMENT

This represents investment in National Bank of Pakistan, PLS Term Deposit Record (TDR), bearing interest @12.25% p.a. and 48 months maturity in 2014

	2012 Rupees	2011 Rupees
<b>5. OPERATING EXPENSES</b>		
Salaries and benefits	3,110,107	2,074,046
House hold, medical & pension payments	2,275,373	1,156,046
Remuneration to PSF staff	740,960	315,655
Stationary	90,124	35,159
Advertisement	198,175	98,750
Repair and maintenance	-	743,171
T.A. & D.A	133,450	19,610
Miscellaneous	180,711	27,663
Telephone charges	78,851	85,675
Overhead charges paid to PSF	401,376	-
Depreciation	231,969	339,135
	<b>7,447,256</b>	<b>4,877,247</b>

≡ Overhead charges paid to PSF

These include the amounts paid by NGLP to its parent PSF for sharing the charges with it.

This is the amount given as an aid to support research undertaken in agricultural universities of Pakistan

	2012 Rupees	2011 Rupees
Project funding	30,798,765	28,947,473
Refunds from projects	(1,491,061)	-
	29,307,704	28,947,473
Evaluation Fee	316,000	480,000
Board Committee Meeting	557,781	299,884
Convention of scientists and farmers	775,273	294,000
	1,649,054	1,073,884
	30,956,758	29,021,357

3.1 Project funding

Sindh Agriculture University, Tandojam	1,353,973	456,746
KPK Agriculture University, Peshawar	791,800	159,670
Nuclear Institute for Food & Agriculture, Peshawar	3,785,540	5,433,120
University of Agriculture, Faisalabad	4,232,086	4,034,950
NIGGE Faisalabad	225,721	-
Comsats Institute of Information Technology, Islamabad	1,399,715	4,955,000
National Nematological Research Centre, Karachi	1,132,000	2,172,200
PMAS Arid Agriculture University, Rawalpindi	2,708,282	1,919,157
National Institute for Agriculture and Biology, Faisalabad	3,259,754	-
Sangosdin Ziaanya University, Multan	403,000	-
Livestock Production Research Institute Bahadurnagar, Okara	1,062,200	-
Pakistan Agriculture Research Centre, Karachi	-	58,900
Bareilly Agriculture Research Institute, Chakwal	27,629	205,829
FORMAN Christian University, Lahore	6,655,347	2,272,000
University of Veterinary and Animal Sciences, Lahore	115,536	7,370,931
PCS R Laboratories Complex, Lahore	1,643,700	-
University of the Punjab, Lahore	539,322	490,000
Dr. Muhammad Khaskhaski N. SP Project	100,000	-
PARC Islamabad Project	1,783,700	-
University of Karachi	179,200	1,978,000
	30,798,765	28,947,473




NOTES

In these financial statements figures have been rounded off to the nearest rupee and those of the previous year have been re-arranged and re-grouped wherever necessary to facilitate comparison.

Islamabad

Sept. 28, 2012

  
MEMBER F.M.C.  
MAZUL ISLAM  
Member Finance  
Pakistan Science Foundation  
Ministry of Science & Technology  
Islamabad

  
CHAIRMAN/CHIEF EXECUTIVE  
NSRF ENDOWMENT FUND

## 2.0) PMNH Financial Statements

### PAKISTAN MUSEUM OF NATURAL HISTORY FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2012

Amir Akmal Khan & Co.  
Chartered Accountants  
221 East Street, Islamabad  
Tel: 9983822 998388  
Fax: 9983888  
E-mail: akmal@amirakmal.com

#### AUDITORS REPORT TO THE BOARD OF TRUSTEES

We have examined the books and records of the **NON-DEVELOPMENT ACCOUNT OF PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH)** as at June 30, 2012, the related income statement, cost of sales, profit and cash flow statement together with the notes thereto, prepared in accordance with the approved accounting policies for the year presented and we certify that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit.


In the preparation of the statements, the management is responsible for maintaining a system of internal controls and ensuring that these financial statements comply with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require us to plan and perform the audit to obtain reasonable assurance about whether the accounts and statements are free of any material misstatements. Our audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the accounts and statements. We also evaluate, amongst the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above set financial statements. We believe that our audit provides a reasonable basis for our opinion on the above set financial statements.

The financial statements are prepared on a going concern basis, which is a convention with the accounting standards. We have not qualified our opinion.

In our opinion, based on the audit evidence obtained, the information given in the statement for above year is true and correct, except for the minor adjustments required and disclosed in our audit notes on the financial statements of **NON-DEVELOPMENT ACCOUNT OF PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH)** as at June 30, 2012 and for the year ended thereon, which have been made in accordance with the approved accounting standards as applicable in Pakistan.

Amir Akmal Khan & Co.  
Chartered Accountants

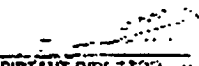
  
Amir Akmal Khan & Co.  
Chartered Accountants  
Islamabad

**PERKINSON MUSEUM OF NATURAL HISTORY**  
**NON DEVELOPMENT ACCOUNT**  
**STATEMENT OF FINANCIAL POSITION AS AT JUNE 30, 2012**

FUNDS	Note	2012 Rupees	2011 Rupees
General fund	1	<u>18,770,756</u>	<u>12,738,656</u>
<b>NON-CURRENT ASSETS</b>			
Property, plant and equipment	1	<u>18,520,756</u>	<u>12,489,358</u>
Long term deposits - PAFES		<u>250,000</u>	<u>250,000</u>
		<u>18,770,756</u>	<u>12,739,656</u>

The annexed notes form 1 to 7 form an integral part of these financial statements.

Estimated.

  
ASSISTANT DIRECTOR

  
DIRECTOR GENERAL





PAKISTAN MUSEUM OF NATURAL HISTORY  
 NON DEVELOPMENT ACCOUNT  
 STATEMENT OF COMPREHENSIVE INCOME  
 FOR THE YEAR ENDED JUNE 30, 2012

	Note	2012 Rupees	2011 Rupees
<b>INCOME</b>			
GRANT FROM FEDERAL GOVERNMENT		82,407,000	67,922,637
<b>EXPENDITURE</b>	5	(78,342,273)	(67,785,066)
<b>SURPLUS TRANSFERRED TO GENERAL FUND</b>		<u>6,064,727</u>	<u>138,578</u>

The annexed notes from 1 to 7 form an integral part of these financial statements.

Islamabad.

  
 ASSISTANT DIRECTOR

  
 DIRECTOR GENERAL



**PAKISTAN MUSEUM OF NATURAL HISTORY  
NON DEVELOPMENT ACCOUNT  
NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2012**

**1. BACKGROUND AND OBJECTIVE**

Pakistan Museum of Natural History (PMNH) is a science center of Pakistan Science Foundation (PSF) established under Pakistan Science Foundation Act 1973, with an objective of promoting and financing scientific activities having a bearing on socio-economic needs of country. Main objective of PMNH is to establish a Museum of Natural History.

**2. SIGNIFICANT ACCOUNTING POLICIES**

The principal accounting policies which have been adopted in the preparation of these financial statements are summarized as under:

**2.1 ACCOUNTING CONVENTION**

These financial statements have been prepared under the historical cost convention.

**2.2 BASIS OF PREPARATION**

These financial statements have been prepared under cash receipt and payment method of accounting.

**2.3 PROPERTY, PLANT AND EQUIPMENT:**

These are stated at cost less depreciation charged.

**2.4 REVENUE RECOGNITION**

Donations and grants are recognized as income when received.

**3. GENERAL FUND**

	2012 Rupees	2011 Rupees
Opening balance	12,738,658	13,030,128
Transfer to Government of Pakistan	(32,629)	(430,049)
Surplus for the year	<u>6,064,727</u>	<u>138,575</u>
	<u>18,770,756</u>	<u>13,738,658</u>



PROPERTY PLANT

PARTICULARS	2011			
	AS AT JULY 2011	ACQUISITION	DELETIONS	AS AT JUNE 2012
Land	1,250,000			1,250,000
Buildings	1,162,503	50,000	-	1,212,503
Infrastructure	3,981,505	-	(70,000)	3,911,505
Furniture and fixtures	1,486,826	150,000	-	1,636,826
Other laboratory equipments	4,370,249	171,147	-	4,541,396
Computer systems	152,000	1,390,000	-	1,542,000
Books	34,112	-	-	34,112
Grants		87,000	-	87,000
Buildings under construction		1,280,000	-	1,280,000
Other intangible assets	25,000			25,000
<b>2011 - Rupees</b>	<b>12,489,195</b>	<b>8,054,177</b>	<b>(12,000)</b>	<b>18,531,372</b>
<b>2011 - Rupees Restated</b>	<b>12,772,185</b>	<b>136,000</b>	<b>420,000</b>	<b>13,328,185</b>

	2012 Rupees	2011 Rupees
<b>5. EXPENDITURE</b>		
Pay and allowances	41,527,993	35,693,912
Overtime allowance	96,000	90,585
Rent of residential accommodation	10,672,000	7,931,092
Medical expenses	3,916,300	3,841,612
GPF & GIS contribution	229,000	150,755
Gratuity	148,000	91,173
Pension contribution	5,665,000	6,030,868
Leave encashment	56,000	314,669
Land repair	-	50,000
Ground rent	6,000	6,000
Traveling expenses	125,000	135,331
Repair and maintenance	520,000	2,331,850
Communication	521,000	720,426
Printing and stationery	76,000	145,300
Consumable stores	-	300,407
Electricity, gas and water	900,000	850,301
Entertainment	60,000	80,000
Assistance Package	300,000	-
Vehicle running (POU)	1,173,000	1,331,561
Uniform expenses	-	49,975
Audit fee	-	20,000
Advertisement	-	19,837
Newspapers and magazines	70,000	66,579
Other function / research activity	9,935,273	4,275,065
Display of state	-	2,724,552
Staff welfare fund	-	300,000
Miscellaneous expenses	350,000	106,613
	<b>76,342,273</b>	<b>67,785,754</b>

DATE OF AUTHORIZATION FOR ISSUE

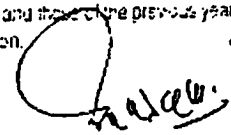
These financial statements have been authorized in issue on \_\_\_\_\_ by the Board of Trustees

7. FIGURES

In these financial statements figures have been rounded off to the nearest rupee and those of the previous year have been re-arranged and re-grouped wherever necessary to facilitate comparison.

13/3/2003,

  
\_\_\_\_\_  
ASSISTANT DIRECTOR

  
\_\_\_\_\_  
DIRECTOR GENERAL

Amir Alam Khan & Co.  
Chartered Accountants  
55-7, Bank Road, Rawalpindi  
Tel: 5561403, 5561256  
Fax: 5517348  
E-mail: [amirco@hotmail.com](mailto:amirco@hotmail.com)

**AUDITORS' REPORT TO THE BOARD OF TRUSTEES**

We have audited the annexed balance sheet of **DEVELOPMENT ACCOUNT OF PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH)** as at June 30, 2012, the related income and expenditure account and cash flow statements together with the related notes and schedules, hereinafter referred to as financial statements for the year then ended and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit.


It is the responsibility of the management to establish and maintain a system of internal control, and prepare and present the above said financial statements in conformity with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said statements are free of any material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the above said statements. An audit also includes assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said financial statements. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

The foundation has not charged depreciation on property plant and equipment which is a contravention with the criteria mentioned in 'AS-16' 'Property plant and equipment'.

In our opinion, and to the best of our information and according to the explanation given to us except for above, these financial statements give the information as required and present fairly in all material respects the financial position of the **DEVELOPMENT ACCOUNT OF PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH)** as at June 30, 2012 and surplus for the year and cash flow statements in accordance with the approved accounting standards as applicable in Pakistan.

Rawalpindi  
September 10, 2012

  
(Amir Alam Khan & Co.)  
Chartered Accountants  
Rawalpindi

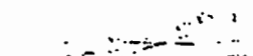


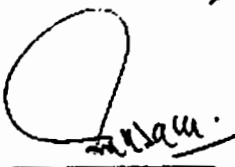
**PAKISTAN MUSEUM OF NATURAL HISTORY  
DEVELOPMENT ACCOUNT  
BALANCE SHEET AS AT JUNE 30, 2012**

	2012	2011
	Rupees	Rupees
<b>FUNDS AND GRANTS</b>		
General fund	3 132,747,139	132,747,138
Pakistan Science Foundation grant	4 200,000	200,000
Japanese Government grant	5 15,719,500	15,719,500
	<u>148,666,639</u>	<u>148,666,638</u>
<b>NON-CURRENT ASSETS</b>		
Property, plant and equipment	6 148,666,249	148,666,249
<b>CURRENT ASSETS</b>		
Cash and bank balances	7 389	389
	<u>148,666,638</u>	<u>148,666,638</u>

The annexed notes from 1 to 9 form an integral part of these financial statements.

Islamabad.

  
ASSISTANT DIRECTOR

  
DIRECTOR GENERAL

MUSEUM OF NATURAL HISTORY  
 DEVELOPMENT ACCOUNT  
 INCOME AND EXPENDITURE ACCOUNT  
 FOR THE YEAR ENDED JUNE 30, 2012

	2011	2012	2011
		Rupees	Rupees
<b>INCOME</b>			
GRANT FROM FEDERAL GOVERNMENT		-	-
		-----	-----
<b>EXPENDITURE</b>			
SURPLUS TRANSFERRED TO GENERAL FUND		-	-
		-----	-----

The annexed notes from 1 to 8 form an integral part of these financial statements.

Information

  
 ASSISTANT DIRECTOR


  
 DIRECTOR GENERAL

**RAK STATE MUSEUM OF NATURAL HISTORY**  
**DEVELOPMENT ACCOUNT**  
**CASH FLOW STATEMENT**  
**FOR THE YEAR ENDED JUNE 30, 2012**

	2012 Rupees	2011 Rupees
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Surplus before working capital charges	-	-
Net cash generated from operating activities	-	-
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Property, plant and equipment	-	-
Net cash used in investing activities	-	-
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
General fund	-	-
Net cash used in financing activities	-	-
<b>NET INCREASE IN CASH AND CASH EQUIVALENTS</b>	-	-
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF THE YEAR</b>	369	358
<b>CASH AND CASH EQUIVALENTS AT END OF THE YEAR</b>	389	382

The annexed notes from 1 to 5 form an integral part of these financial statements.

instated.

  
 ASSISTANT DIRECTOR

  
 DIRECTOR GENERAL



PAKISTAN MUSEUM OF NATURAL HISTORY  
DEVELOPMENT ACCOUNT  
NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30 2012

**1. BACKGROUND AND OBJECTIVE**

Pakistan Museum of Natural History (PMNH) is a scientific center of Pakistan Science Foundation (PSF) established under Pakistan Science Foundation Act 1973, with an objective of promoting and financing scientific activities having a bearing on socio-economic needs of country. Main objective of PMNH is to establish a Museum of Natural History.

**2. SIGNIFICANT ACCOUNTING POLICIES**

The principal accounting policies which have been adopted in the preparation of these financial statements are summarized as under:

**2.1 ACCOUNTING CONVENTION**

These financial statements have been prepared under the historical cost convention.

**2.2 BASIS OF PREPARATION**

These financial statements have been prepared under cash receipt and payment method of accounting.

**2.3 PROPERTY, PLANT AND EQUIPMENT**

These are stated at cost less depreciation as charged.

	2012 Rupees	2011 Rupees
<b>3. GENERAL FUND</b>		
Opening balance	132,747,138	132,747,138
Transfer to government of Pakistan	-	-
Surplus for the year	<u>132,747,138</u>	<u>132,747,138</u>

**4. PAKISTAN SCIENCE FOUNDATION GRANT**

This represents the grant from Pakistan Science Foundation for the establishment of display centre received during 1992-1999.

**5. JAPANESE GOVERNMENT GRANT**

This represents the cultural grant assistance from Government of Japan received during financial year 1999-2000.

**PROPERTY, PLANT AND EQUIPMENT**

PARTICULARS	2011			AS AT JUNE 30 2012
	PER AT JULY 01 2011	PROVISION	DELETIONS	
Land	21,76,800	-	-	21,76,800
Building	97,152,202	-	-	97,152,202
Motor vehicles	1,731,447	-	-	1,731,447
Leasing assets	16,173,251	-	-	16,173,251
Software	2,100	-	-	2,100
Other assets equipment	13,751,240	-	-	13,751,240
Intangible intangible	11,774,260	-	-	11,774,260
Construction materials	10,825,274	-	-	10,825,274
Books	4,242,764	-	-	4,242,764
Furniture and fixtures	1,261,917	-	-	1,261,917
Air conditioners	911,823	-	-	911,823
<b>2011 - Rupees</b>	<b>148,666,249</b>	<b>-</b>	<b>-</b>	<b>148,666,249</b>
<b>2011 - Rupees</b>	<b>148,666,249</b>	<b>-</b>	<b>-</b>	<b>148,666,249</b>

**7. CASH AND BANK BALANCES**

This represents unutilised portion of advance retained by the construction consultant deposited in UD, OD 70 account.


**8. DATE OF AUTHORIZATION FOR ISSUE**

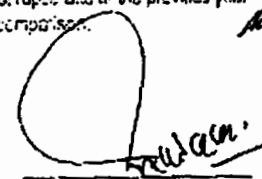
These financial statements have been authorized for issue on \_\_\_\_\_ by the Board of Trustees.

**9. FIGURES**

In these financial statements figures have been rounded off to the nearest rupee and of the previous year have been re-arranged and re-grouped wherever necessary to facilitate comparison.

18/07/2012

  
ASSISTANT DIRECTOR

  
DIRECTOR GENERAL

Amin Ali Khan & Co.  
Chartered Accountants  
501, Bank Road, Rawalpindi  
Tel: 5573483, 5563256  
Fax: 5577058  
E-mail: aaaco@telex.com

**AUDITORS' REPORT TO THE BOARD OF TRUSTEES**

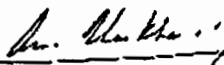
We have audited the annexed receipt and payment account of the MISCELLANEOUS FUNDS (JBL ACCOUNT # CD - 701) PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH) for the year ended as at June 30, 2012, and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief were necessary for the purposes of our audit.

It is the responsibility of the management to establish and maintain a system of internal control, to increase and prevent the receipt and payment account in conformity with the approved accounting standards or applications in Pakistan. Our responsibility is to express an opinion on this receipt and payment account based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said receipt and payment account is free of any material misstatement. An audit involves examining, on a test basis, evidence supporting the amounts and disclosures in the above said receipt and payment account. An audit also includes assessing the accounting policies and significant estimates made by management, as well as evaluating the overall presentation of the above said receipt and payment account. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we record that:

In our opinion, and to the best of our information and according to the explanation given to us, the receipt and payment account give the information as required and present fairly in all material respect the receipts and payments of the MISCELLANEOUS FUNDS (JBL ACCOUNT # CD - 701) PAKISTAN MUSEUM OF NATURAL HISTORY (PMNH) during the year ended as at June 30, 2012, in accordance with the approved accounting standards as applicable in Pakistan.

Rawalpindi  
September 10, 2012

  
Amin Ali Khan & Co.  
Chartered Accountants  
Rawalpindi



PAKISTAN MUSEUM OF NATURAL HISTORY  
 MISCELLANEOUS FUND (P.L.A) ACCOUNT (CONT.)  
 RECEIPT AND PAYMENT ACCOUNT FOR THE YEAR ENDED JUNE 30, 2012

	2012 Rupees	2011 Rupees
OPENING BALANCE - CASH AT BANK	659,618	428,369
RECEIPTS		
Miscellaneous	313,554	1,074,669
	973,172	1,503,037
PAYMENTS		
Transfers during the year:	708,668	-
Miscellaneous	190,293	1,291,359
	898,961	1,291,359
 CLOSING BALANCE - CASH AT BANK	76,211	659,618

Islamabad.

\_\_\_\_\_  
 ASSISTANT DIRECTOR

  
 \_\_\_\_\_  
 DIRECTOR GENERAL

PAKISTAN MUSEUM OF NATURAL HISTORY  
 STATEMENT OF FINANCIAL POSITION AND EXPENDITURE STATEMENT  
 FOR THE YEAR ENDED JUNE 30, 2017

PMNH MISCELLANEOUS FUND	OPENING BALANCE	FUNDS RECEIVED	EXPENDITURES INCURRED	TRANSFERS MADE DURING	CLOSING BALANCE
FC	382	-	-	-	382
ZOOLOGICAL SYMPOSIUM	1,507	-	-	-	6,507
LINEWORK SHOP	24	-	-	250	-
MISCELLANEOUS	2,726	14,536	(1962)	-	37,292
SECURITY DEPARTMENT	3,000	-	-	-	3,000
PMNH COLLECTION	127,027	288	(39,000)	-	167,315
POP BIO 3M	145,627	-	(5,000)	-	137,627
BIODIVERSITY SYMPOSIUM	205,711	1,240	(51,215)	-	126,126
MEDICAL ADVANCE	-	275,200	-	(275,000)	-
REFUNDS OF VEHICLES	20,028	-	-	(209,751)	(368,752)
CONTRACT DEVELOPMENT DEPARTMENT	-	-	-	-	-
<b>TOTAL</b>	<b>659,672</b>	<b>313,554</b>	<b>(190,293)</b>	<b>(706,655)</b>	<b>76,211</b>

Islamabad

ASSISTANT DIRECTOR

DIRECTOR GENERAL





### 3.0) PASTIC Financial Statements

PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
FINANCIAL STATEMENTS  
FOR THE YEAR ENDED  
JUNE 30, 2012

Amir Alam Khan & Co  
Chartered Accountants  
55A, Park Road, Kowloon  
Tel: 281433, 656279  
Fax: 337723  
E-mail: amkes@normal.com

#### AUDITORS' REPORT TO THE BOARD OF TRUSTEES

We have audited the annual consolidated balance sheet of the PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE as at June 30, 2012 and the related consolidated statement of income and expenditure together with the notes forming part thereof hereinafter referred to as the financial statements for the year then ended which are incorporated audited results of the projects of foundation for the year then ended.

It is the responsibility of the foundation to establish and maintain a system of internal control and prepare and present the financial statements in conformity with the approved accounting standard as applicable in Pakistan. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting policies used and significant estimates made by management, as well as evaluating the overall presentation of the statements. We believe that our audit provides a reasonable basis for our opinion.

In our opinion the financial statements presented fairly, in all material respects, the financial position of the PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE for the year ended June 30, 2012 and of its surplus for the year then ended in accordance with the approved accounting standards as applicable in Pakistan.

Amir Alam Khan & Co  
Chartered Accountants


*Amir Alam Khan*  
AMIR ALAM KHAN & CO  
Chartered accountants  
Habit: Faisalabad

**PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
CONSOLIDATED BALANCE SHEET AS AT JUNE 30, 2012**

	Notes	2012 Rupees	2011 Rupees
<b>FUNDS</b>			
General fund	3	49,371,035	18,135,584
<b>NON-CURRENT ASSETS</b>			
Property, plant and equipment	4	11,154,662	12,321,850
Advances for printing machine		32,552,050	
		43,706,912	12,321,850
<b>CURRENT ASSETS</b>			
Cash at bank - Reprographic and documentation		5,664,123	5,913,734
		<u>49,371,035</u>	<u>18,135,584</u>

The annexed notes from 1 to 6 form an integral part of these financial statements.

Islamabad

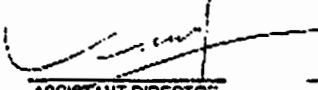
  
 ASSISTANT DIRECTOR  
 (ACCOUNTS)

  
 DIRECTOR GENERAL  
**Dr. Muhammad Akram Shaikh**  
 Director General, PASTIC  
 Quaid-e-Azam University Campus,  
 Islamabad

**PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT AS AT JUNE 30, 2012**

	2012 Rupees	2011 Rupees
<b>INCOME</b>		
Non-development account	82,762,000	71,682,000
Reprographic and documentation	7,496,321	6,032,299
Strengthening & Enhancement of Reprographic services of PASTIC	32,977,000	2,518,000
	<b>123,235,321</b>	<b>80,332,299</b>
<b>EXPENDITURE</b>		
Non-development account	81,691,442	71,682,000
Reprographic and documentation	7,645,932	4,902,337
Strengthening & enhancements of reprographic services of PASTIC	424,950	2,616,000
Depreciation	2,237,546	2,497,208
	<b>91,999,870</b>	<b>81,697,545</b>
<b>SURPLUS / (DEFICIT) FOR THE YEAR</b>	<b>31,235,451</b>	<b>(1,277,246)</b>

Islamabad,

  
**ASSISTANT DIRECTOR  
(ACCOUNTS)**

  
**DIRECTOR GENERAL  
Dr. Muhammad Akram Shaikh  
Director General, PASTIC  
Quaid-i-Azam University Campus,  
Islamabad**



**PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE**  
**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2012**

**1. BACKGROUND AND OBJECTIVES**

Pakistan Scientific and Technological Center (PASTIC) is the premier organization established under the Pakistan Science Foundation Act 1973 for dissemination of Scientific and Technological Information to the Scientists, Researchers, Engineers, Entrepreneurs, Industry and Citizens of Pakistan.

**2. SIGNIFICANT ACCOUNTING POLICIES**

The principal accounting policies which have been adopted in the preparation of these financial statements are summarized as under:

**2.1 ACCOUNTING CONVENTION**

These financial statements have been prepared under the historical cost convention without any adjustments for the effects of inflation or current values.

**2.2 BASIS OF PREPARATION**

These financial statements have been prepared in accordance with approved accounting standards, as applicable in Pakistan. Approved accounting standards comprise of Accounting and Financial Reporting Standard for Small Sized Entities (SSE) issued by Institute of Chartered Accountants of Pakistan and provisions of and directives issued under the Companies Ordinance, 1984. In case requirements differ, the provisions or directives of the Companies Ordinance, 1984 shall prevail.

**2.3 PROPERTY, PLANT AND EQUIPMENT**

These are stated at cost less accumulated depreciation. Depreciation is charged on reducing balance method of written down values depending upon the class of property, plant and equipment. Full year's depreciation is charged on additions while no depreciation is charged on deletions during the year.

Normal repairs and maintenance are charged to income as and when incurred. Major renewals and improvements are capitalized. Gain on disposal of property, plant and equipment is taken to income and expenditure account.

**2.4 REVENUE RECOGNITION**

All grants are accounted for on cash basis.

	2012 Rupees	2011 Rupees
<b>3. General fund</b>		
Opening balance	18,135,584	19,412,630
Surplus / (deficit) for the year	<u>31,235,451</u>	<u>11,277,243</u>
	<u><u>49,371,035</u></u>	<u><u>30,689,873</u></u>

4. PROPERTY, PLANT AND EQUIPMENT

2012									
Rupees									
PARTICULARS	C O S T			N O T E	D E P R E C I A T I O N			A M T	
	AS AT JULY 01, 2011	ADDITON	AS AT JUNE 30, 2012		AS AT JULY 01, 2011	W A I V E R	FOR THE YEAR	AS AT JUNE 30, 2012	AS AT JUNE 30, 2011
Building	1,582,257	-	1,582,257	11	1,182,296	-	399,961	3,227,883	6,717
Machinery	1,142,070	-	1,142,070	12	2,145,192	-	2,525,289	2,167,579	2,264,493
Motor vehicles	1,172,475	-	1,172,475	13	1,111,125	-	874,526	2,892,428	1,119,122
Computers	6,388,852	40,166	7,397,716	14	4,879,758	-	789,706	1,632,574	1,736,128
Furniture and fixtures	791,168	21,231	812,399	15	493,640	-	35,271	545,511	327,377
Office equipment	572,812	-	572,812	16	247,198	-	27,762	214,720	218,292
Electric equipment	1,644,222	-	1,644,222	17	1,127,073	-	15,373	1,726,389	1,726,389
UPS	-	24,532	24,532	18	-	-	2,450	2,450	27,058
Books	1,048,764	-	1,048,764	19	1,202,936	-	174,118	1,479,724	1,527,064
	<b>27,947,700</b>	<b>1,678,989</b>	<b>34,018,337</b>		<b>20,825,948</b>	<b>-</b>	<b>2,227,548</b>	<b>22,892,183</b>	<b>21,164,267</b>

2011									
Rupees									
PARTICULARS	C O S T			N O T E	D E P R E C I A T I O N			A M T	
	AS AT JULY 01, 2010	ADDITON	AS AT JUNE 30, 2011		AS AT JULY 01, 2010	W A I V E R	FOR THE YEAR	AS AT JUNE 30, 2011	AS AT JUNE 30, 2010
Building	7,585,267	-	7,585,267	11	7,144,139	-	44,728	7,188,867	395,975
Machinery	2,117,170	2,473,333	4,590,503	12	1,862,203	-	245,567	2,246,770	2,262,865
Motor vehicles	2,132,475	-	2,132,475	13	2,106,247	-	1,025,179	3,131,426	4,222,549
Computers	4,817,742	1,526,748	6,344,490	14	4,211,573	-	647,223	4,858,796	1,519,158
Furniture and fixtures	750,188	-	750,188	15	628,732	-	75,745	654,487	287,336
Office equipment	570,812	1,620	572,432	16	250,174	-	24,214	200,188	283,024
Electric equipment	1,807,722	2,300	1,810,022	17	1,232,945	-	86,128	1,319,073	751,749
Books	2,575,767	427,217	3,002,984	18	1,112,142	-	175,664	1,287,806	1,741,718
	<b>29,499,803</b>	<b>4,992,766</b>	<b>34,847,788</b>		<b>18,218,791</b>	<b>-</b>	<b>2,067,228</b>	<b>23,825,948</b>	<b>17,221,251</b>

5. DATE OF AUTHORIZATION FOR ISSUE

These financial statements have been authorized for issue on \_\_\_\_\_ by the Board of Trustees.

6. FIGURES

In this receipt and payment account figures have been rounded off to the nearest rupee and of the previous year have been re-arranged and re-grouped wherever necessary to facilitate comparison.

Islamabad,

ASSISTANT DIRECTOR  
(ACCOUNTS)

DIRECTOR GENERAL  
Dr. Mohammed Akram Shaikh  
Director General PASTIC  
Al-Azhar University Campus  
Islamabad

AMIR ALAM KHAN & Co.  
**Chartered Accountants**  
557, Bank Road, Rawalpindi  
Telo: 5583483, 5583256  
Fax: 5517358  
E-mail: sakcc@hotmail.com

**AUDITORS' REPORT TO THE BOARD OF TRUSTEES**


We have audited the annexed consolidated receipt and payment account of **NON-DEVELOPMENT ACCOUNT OF PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE (PASTIC)** for the year ended as at June 30, 2012, and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit.

It is the responsibility of the management to establish and maintain a system of internal control and prepare and present the above said receipt and payment account in conformity with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on this receipt and payment account based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said receipt and payment account is free of any material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the above said receipt and payment account. An audit also includes assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said receipt and payment account. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

In our opinion, and to the best of our information and according to the explanation given to us, this receipt and payment account gives the information as required and presents fairly in all material respect the receipts and payments of the **NON-DEVELOPMENT ACCOUNT OF PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE (PASTIC)** during the year ended as at June 30, 2012, in accordance with the approved accounting standards as applicable in Pakistan.

Rawalpindi,  
October 4, 2012

  
**AMIR ALAM KHAN & CO.**  
(Chartered accountants)  
Habib Fakhruddin

PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
 CONSOLIDATED RECEIPTS AND PAYMENTS ACCOUNT (NON-DEVELOPMENT)  
 FOR THE YEAR ENDED JUNE 30, 2012

	2012 Rupees	2011 Rupees
<b>RECEIPTS</b>		
Government grants	<u>82,762,000</u>	<u>71,692,000</u>
	82,762,000	71,692,000
<b>PAYMENTS</b>		
Salaries and allowances	45,229,915	36,500,134
House rent (Residential)	11,396,000	8,156,620
Printing, stationery and consumable stores	679,776	1,028,037
Newspaper / book / journals	373,655	665,354
Entertainment	60,000	83,934
Postage, telegrams, internet and telephone	1,112,879	1,346,171
Electricity, water and gas	1,205,025	971,213
Vehicle running / P.O. charges	900,000	904,879
Traveling allowance (TA/DA)	194,000	253,354
Medical facility	690,000	1,316,299
Advertisement	25,000	55,670
Repair and maintenance-office equipment	194,000	338,261
Repair and maintenance-transport	250,000	381,219
Repair and maintenance-furniture & fixtures	28,000	78,612
Repair and maintenance-building	350,000	2,245,512
Computer expenses (Hardware, software IT Equipment & Computer Station)	1,828,907	1,789,475
Staff welfare funds & uniforms	318,000	610,005
Conferences, seminar & workshops	2,415,140	1,876,255
Audit fee	-	20,000
Rent Office building	102,000	342,000
Purchase of transport	-	-
Purchase of plant and machinery	-	-
Purchase of furniture & fixtures	-	42,054
Advances (motor cycle)	-	610,000
Data bases, journals and annual subscriptions	2,982,380	1,979,004
National bureau (TISD)	560,383	493,838
Pension contribution	11,081,000	7,629,054
Foreign expert assistance	600,000	-
Miscellaneous & unforeseen	186,000	272,176
	<u>82,762,000</u>	<u>71,692,000</u>
<b>EXCESS OF RECEIPTS OVER PAYMENTS</b>		

Islamabad.

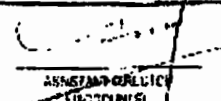
ASSISTANT DIRECTOR  
(ACCOUNTS)

DIRECTOR GENERAL  
Muhammad Anwar Shaikh  
Director General, PASTIC  
Quaid-e-Azam University Campus,  
Islamabad



PART II - ACCOUNTS OF THE GOVERNMENT OF PUNJAB  
**CONSOLIDATED RECEIPTS AND PAYMENTS ACCOUNT (NON-DEVELOPMENT)**  
 FOR THE YEAR ENDED JUNE 30, 2012

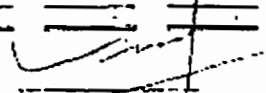
PARTICULARS	ISLAMABAD Rupees	KARACHI Rupees	LAHORE Rupees	PFISMAHAR Rupees	QUETTA Rupees	FAISALABAD Rupees	MUZAFFARABAD Rupees	2012 Rupees	2011 Rupees
<b>RECEIPTS</b>									
Government grants	12,752,560	-	-	-	-	-	-	62,762,700	1,142,250
Transfers to sub-centres	(15,431,594)	6,658,324	1,720,404	2,076,879	1,165,277	1,710,181	975,376	87,732,050	71,562,160
	67,320,907	6,658,324	2,720,494	2,076,879	1,165,277	1,710,181	975,376		
<b>PAYMENTS</b>									
Salaries and allowances	34,520,036	8,675,334	1,711,274	2,113,908	825,227	872,729	192,707	48,770,515	39,550,134
Household expenditure	9,015,184	149,120	487,667	461,548	220,935	155,116	159,371	11,106,800	8,154,932
Travel and conveyance	612,012	2,489	7,776	3,687	8,500	7,382	6,767	179,376	1,024,017
Contingent contributions	302,274	3,873	1,716	2,850	3,617	3,865	2,370	373,653	661,324
Entertainment	54,250	1,611	-	-	691	3,810	-	60,000	11,334
Communicable diseases	810,561	87,673	39,527	58,436	46,097	19,664	49,676	1,112,878	1,465,171
Publicity, welfare and	1,320,510	62,918	41,809	72,705	-	-	-	1,201,005	1,212,111
Medical services to citizens	111,200	28,911	29,515	30,375	-	-	-	931,365	1,048,879
Travel and transport (VAT)	172,621	-	-	17,765	-	3,614	-	134,360	253,320
Motor vehicle	561,783	87,950	-	9,297	15,665	281	-	626,869	1,106,744
Mobile telephone	1,001,002	-	-	-	-	-	-	11,261,000	2,629,894
Amusement	21,788	-	-	2,211	-	-	-	25,000	53,670
Motor and maintenance	-	-	-	-	-	-	-	-	-
Other payments	147,116	23,503	7,864	2,020	6,620	5,600	-	164,071	117,251
Contingent	225,186	8,675	9,429	8,780	-	-	-	276,916	191,171
Contingent expenses	24,140	1,010	-	-	-	2,951	-	28,020	75,512
Building	350,789	1,760	1,578	-	-	3,241	-	356,268	2,242,512
Equipment expenses	1,645,612	8,532	67,202	14,102	11,832	82,282	6,219	1,876,867	1,109,675
Statutory and other fees	313,875	4,173	-	-	-	-	-	318,049	651,025
Interest, interest and exchange	1,479,226	373,850	327,136	261,356	46,000	47,714	5,360	2,415,143	1,678,225
Audit charges	-	-	-	-	-	-	-	-	26,200
Rent and building	-	102,003	-	-	-	-	-	102,000	347,500
Purchase of other transport	-	-	-	-	-	-	-	-	-
Purchase of plant and machinery	-	-	-	-	-	-	-	-	-
Purchase of books and papers	-	-	-	-	-	-	-	-	47,634
Gifts, presents and other expenses	2,162,291	-	-	-	-	-	-	2,162,290	1,979,094
Subsidies (miscellaneous)	-	-	-	-	-	-	-	-	113,000
Welfare Bureau (SD) for the Service Dept	159,067	116,641	1,715	-	-	-	-	260,793	481,426
Transport and assistance	601,976	-	-	-	-	-	-	600,000	-
Medical services to sub-centres	102,015	25,582	9,954	9,244	17,763	17,279	12,072	189,898	272,170
	67,721,201	8,666,304	2,720,494	2,076,879	1,165,277	1,710,181	820,276	82,742,026	71,827,660

  
 ASSISTANT DIRECTOR  
 ACCOUNTS  
 PUNJAB  
 LAHORE

DIRECTOR GENERAL  
**Dr. Muhammad Akram Shaikh**  
 Director General of Accounts  
 Punjab  
 Lahore

PAKISTAN BUREAU OF TECHNICAL EDUCATION  
 CONSOLIDATED RECEIPTS AND PAYMENTS ACCOUNT (NON-DEVELOPMENT)  
 FOR THE YEAR ENDED JUNE 30, 2012

PARTICULARS	ISLAMABAD Rupees	RAWHAL Rupees	FARKH Rupees	FESHANER Rupees	LAFIYA Rupees	FACD, ASD Rupees	MUJAJARHND Rupees	2011 Rupees	2012 Rupees
Excess of receipts over payments	.	.	.	.	.	.	.	.	.
Add Opening balance	.	.	.	.	.	.	.	.	.
Cash in hand	.	.	.	.	.	.	.	.	.
Cash at bank	.	.	.	.	.	.	.	.	.
Represented by									
Costing balance of									
Cash in hand	.	.	.	.	.	.	.	.	.
Cash at bank	.	.	.	.	.	.	.	.	.
Minor total									

  
 ASSISTANT DIRECTOR  
 ISLAMABAD

  
 DIRECTOR GENERAL  
**Mr. Muhammad Ahran Shaikh**  
 Director General, PASTIC  
 Haidi Azam University Campus  
 Islamabad

**AMIR ALAM KHAN & CO**  
**Chartered Accountants**  
55/1, Bark Road, Rawalpindi  
Tele. 5563483, 5563254  
Fax 5517254  
E-mail aakco@hotmail.com

**AUDITORS' REPORT TO THE BOARD OF TRUSTEES**

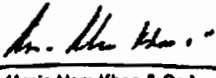
We have audited the annexed consolidated receipt and payment account of **REPROGRAPHIC AND DOCUMENTATION ACCOUNT OF PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE (PASTIC)** for the year ended as at June 30, 2012, and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit.

It is the responsibility of the management to establish and maintain a system of internal control, and prepare and present the above said receipt and payment account in conformity with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on this receipt and payment account based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said receipt and payment account is free of any material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the above said receipt and payment account. An audit also includes assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said receipt and payment account. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

In our opinion, and to the best of our information and according to the explanation given to us, this receipt and payment account gives the information as required and presents fairly in all material respect the receipts and payments of the **REPROGRAPHIC AND DOCUMENTATION ACCOUNT OF PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE (PASTIC)** during the year ended as at June 30, 2012, in accordance with the approved accounting standards as applicable in Pakistan.


Rawalpindi,  
October 4, 2012


  
(Amir Alam Khan & Co.)  
Chartered Accountants  
Habib Fakruddin

PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
 CONSOLIDATED RECEIPTS AND PAYMENTS ACCOUNT (REPROGRAPHIC AND DOCUMENTATION)  
 FOR THE YEAR ENDED JUNE 30, 2012

	2012 Rupees	2011 Rupees
<b>OPENING BALANCES</b>		
Cash at bank:		
Reprography	4,506,152	3,577,305
Documentation	1,307,582	1,108,467
	5,813,734	4,685,772
<b>RECEIPTS</b>		
Reprography	7,168,965	5,481,155
Documentation	88,467	231,730
Profit on bank account	154,932	149,836
Transferred from sub-centres	83,957	170,575
	7,496,321	6,032,296
<b>PAYMENTS</b>		
Reprography	7,486,783	4,701,147
Documentation expenses	74,750	30,000
Bank charges	442	615
Transferred to head office	83,957	170,575
	7,645,932	4,902,337
<b>CLOSING BALANCES</b>		
Cash at bank:		
Reprography	4,343,266	4,508,152
Documentation	1,320,857	1,307,582
	5,664,123	5,815,734

Islamabad.

  
 ASSISTANT DIRECTOR  
 (ACCOUNTS)

  
 DIRECTOR GENERAL  
**Dr. Muhammad Akram Shaikh**  
 Director General, PASTIC  
 Quaid-i-Azam University Campus,  
 Islamabad



PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
 CONSOLIDATED RECEIPTS AND PAYMENTS ACCOUNT (REPROGRAPHY & DOCUMENTATION)  
 FOR THE YEAR ENDED JUNE 30, 2012

DESCRIPTION	ISLAMABAD Rupees	KARACHI Rupees	LAHORE Rupees	PESHAWAR Rupees	QUETTA Rupees	FATAH JAMU Rupees	MIRAFATAHAD Rupees	2012 Rupees	2011 Rupees
<b>OPENING BALANCE</b>									
<b>CASH AT BANK</b>									
Reprography	4,506,152	-	-	-	-	-	-	4,506,152	3,577,325
Documentation	1,291,203	10,155	5,056	1,127	-	-	-	1,307,541	1,104,461
	<u>5,797,355</u>	<u>10,155</u>	<u>5,056</u>	<u>1,127</u>				<u>5,813,734</u>	<u>4,681,787</u>
<b>RECEIPTS</b>									
Reprography	1,160,965	-	-	-	-	-	-	1,160,965	5,491,156
Transfers from	13,125	51,513	1,200	1,204	-	2,440	1,560	69,842	211,771
Profits bank account	151,932	-	-	-	-	-	-	151,932	146,638
Transferred from sub-offices	87,957	-	-	-	-	-	-	87,957	179,275
	<u>1,403,979</u>	<u>51,513</u>	<u>1,200</u>	<u>1,204</u>		<u>2,440</u>	<u>1,560</u>	<u>1,495,321</u>	<u>5,928,239</u>
<b>PAYMENTS</b>									
Reprography	7,435,783	-	-	-	-	-	-	7,435,783	6,711,147
Documentation expenses	74,750	-	-	-	-	-	-	74,750	16,200
Bank charges	-	416	324	-	-	-	-	742	614
Transferred to sub-offices	-	17,051	17,557	-	-	2,440	1,613	38,661	170,674
	<u>7,510,533</u>	<u>18,467</u>	<u>17,881</u>			<u>2,440</u>	<u>1,613</u>	<u>7,550,534</u>	<u>6,998,635</u>
<b>CLOSING BALANCES</b>									
<b>CASH AT BANK</b>									
Reprography	4,345,286	-	-	-	-	-	-	4,345,286	4,506,152
Documentation	1,312,150	1,682	2,273	4,421	-	-	-	1,318,526	1,307,541
	<u>5,657,436</u>	<u>1,682</u>	<u>2,273</u>	<u>4,421</u>				<u>5,663,311</u>	<u>5,813,734</u>

Number:

ASSISTANT DIRECTOR (ACCOUNTS)

DIRECTOR GENERAL  
**Dr. Muhammad Akram Shaikh**  
 Director General, PASTIC  
 Quaid-i-Azam University Campus,  
 Islamabad

Amir Alam Khan & Co  
Chartered Accountants  
15/1, Bana Road, Rawalpindi  
Tele: 5563483, 5543258  
Fax : 5517358  
E-mail: aakco@hotmail.com

**AUDITORS' REPORT TO THE BOARD OF TRUSTEES**


We have audited the annexed receipt and payment account of DEVELOPMENT PROJECT-STRENGTHENING & ENHANCEMENT OF REPOGRAPHIC SERVICES OF PASTIC for the year ended as at June 30, 2012, and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief were necessary for the purposes of our audit.

It is the responsibility of the management to establish and maintain a system of internal control, and prepare and present the above said receipt and payment account in conformity with the approved accounting standards as applicable in Pakistan. Our responsibility is to express an opinion on this receipt and payment account based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said receipt and payment account is free of any material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the above said receipt and payment account. An audit also includes assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said receipt and payment account. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

In our opinion, and to the best of our information and according to the explanation given to us, this receipt and payment account gives the information as required and presents fairly in all material respect the receipts and payments of the DEVELOPMENT PROJECT-STRENGTHENING & ENHANCEMENT OF REPOGRAPHIC SERVICES OF PASTIC during the year ended as at June 30, 2012, in accordance with the approved accounting standards as applicable in Pakistan.

Rawalpindi,  
October 4, 2012

  
(Amir Alam Khan & Co.)  
Chartered Accountants  
Habib Fakhruddin

PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE  
STRENGTHENING & ENHANCEMENT OF REPROGRAPHIC SERVICES OF PASTIC  
RECEIPTS AND PAYMENTS ACCOUNT  
FOR THE YEAR ENDED JUNE 30, 2012

	2012 Rupees	2011 Rupees
<b>RECEIPTS</b>		
Government grants	32,977,000	2,619,000
<b>PAYMENTS</b>		
Establishment Expenditure	224,000	.
Honorarium	140,000	.
Acquisition of Machinery	31,872,000	2,558,000
Renovation of Reprographic Section	403,000	.
Acquisition of Air-conditioning system	277,000	.
Miscellaneous	61,000	60,000
	32,977,000	2,619,300
<b>EXCESS OF RECEIPTS OVER PAYMENTS</b>	.	.

Islamabad,

  
\_\_\_\_\_  
ASSISTANT DIRECTOR  
(ACCOUNTS)

  
\_\_\_\_\_  
DIRECTOR GENERAL  
Dr. Muhammad Akram Shaikh  
Director General, PASTIC  
Quaid-i-Azam University Campus  
Islamabad

QUANT ASIAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTER  
NOTES TO THE RECEIPTS AND PAYMENTS ACCOUNT  
FOR THE YEAR ENDED JUNE 30 2012

1. BACKGROUND AND OBJECTIVES

Quant Scientific and Technology Center (PASTIC) is the premier organization established under the Patrician Science Foundation Act, 1963 for dissemination of Scientific and Technological Information to the Scientists, Researchers, Engineers, Entrepreneurs, Industry and Citizens of Pakistan.

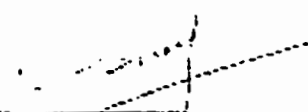
2. DATE OF AUTHORIZATION FOR ISSUE

These financial statements have been authorized for issue on \_\_\_\_\_ by the Board of Trustees.

3. FIGURES

In this receipt and payment account figures have been rounded off to the nearest rupee and those of the previous year have been re-arranged and re-grouped wherever necessary to facilitate comparison.

Islamabad

  
\_\_\_\_\_  
ASSISTANT DIRECTOR  
(ACCOUNTS)

  
\_\_\_\_\_  
DIRECTOR GENERAL  
Dr. Muhammad Akram Shaikh  
Director General, PASTIC  
Quaid-i-Azam University Campus,  
Islamabad



# **ANNEXURES**

**Pakistan Science Foundation Act 1973**

**National Assembly of Pakistan**

Islamabad, the 2<sup>nd</sup> February, 1973

The following Acts of the National Assembly received the assent of the President on the 31<sup>st</sup> January, 1973, and are hereby published for general information:-

**ACT NO. III OF 1973**

An Act to provide for the establishment of the Pakistan Science Foundation

WHEREAS it is expedient to provide for the establishment of the Pakistan Science Foundation and for matters ancillary thereto;

It is hereby enacted as follows:-

1. Short title, extent and commencement.-(1) This Act may be called the Pakistan Science Foundation Act, 1973.

(2) It extends to the whole of Pakistan.

(3) It shall come into force at once.

2. **Definitions** – In this Act, unless there is anything repugnant in the subject or context,-

a). “Board” means the Board of Trustees of the Foundation;

(b). “Chairman” means the Chairman of the Foundation; and

(c) “Foundation” means the Pakistan Science Foundation established under this Act.

3. **Establishment of the Foundation.**-- (1) As soon as may be after the commencement of this Act, the Federal Government may, by notification in the official Gazette, establish a Pakistan Science Foundation to promote and finance scientific activities having a bearing on the socio-economic needs of the country.

(2) The Foundation shall be a body corporate by the name of the Pakistan Science Foundation, having perpetual succession and a common seal, with power, subject to the provisions of this Act, to acquire, hold and dispose of property, both movable and immovable, and shall by the said name sue and be sued.

(3) The head office of the Foundation shall be at Islamabad.

4. **Functions of the Foundation.**--(1) The Foundation shall function as a financing agency for --

- (i) the establishment of comprehensive scientific and technological information and dissemination centres;
- (ii) the promotion of basic and fundamental research in the universities and other institutions on scientific problems relevant to the socio-economic development of the country;
- (iii) the utilization of the results of scientific and technological research including pilot plant studies to prove the technical and economic feasibility of processes found to be promising on a laboratory scale;
- (iv) the establishment of science centres, clubs, museums, herbaria and planetaria;
- (v) the promotion of scientific societies, associations and academies engaged in spreading the cause of scientific knowledge in general or in the pursuit of a specific scientific discipline or technology in particular;
- (vi) the organization of periodical science conferences, symposia and seminars;
- (vii) the exchange of visits of scientists and technologists with other countries;
- (viii) the grant of awards, prizes and fellowships to individuals engaged in developing processes, products and inventions of consequence to the economy of the country ; and
- (ix) special scientific surveys not undertaken by any other organization and collection of scientific statistics related to the scientific effort of the country.

(2) The Foundation shall also—

- (i) review the progress of scientific research sponsored by it and evaluate the results of such research;
- (ii) maintain a National Register of highly qualified and talented scientists of Pakistan, including engineers and doctors, in or outside the country and to assist them, in collaboration with the concerned agencies in finding appropriate employment; and
- (iii) establish liaison with similar bodies in other countries.

(3) In the performance of its functions, the Foundation shall be guided on questions of policy by the instructions, if any, given to it by the Federal Government which shall be the sole judge as to whether a question is a question of policy.

5. Board of Trustees.- (1) The general direction, conduct and management of the affairs of the Foundation, including administration of its funds, shall vest in a Board of Trustees consisting of the following members, namely:-

**Whole-time members**

- (i) the Chairman ;
- (ii) one eminent scientist;
- (iii) the Director of Finance;

to be appointed by the President;

**Part-time members**

- (iv) the Chairman of the National Science Council;
- (v) four scientists to be nominated by the National Science Council; and
- (vi) eleven eminent scientists to be nominated the President.

(2) The remuneration and other terms and conditions of service of Chairman and the two other whole-time members of the Board shall be such as may be determined by the President.

6. Chairman of the Foundation.- (1) The Chairman of the Board shall be the Chairman of the Foundation and shall be appointed from amongst eminent scientists of the country having experience of research and scientific administration

(2) The Chairman shall, subject to sub-section (3), hold office for a term not exceeding three years and shall be eligible for re-appointment.

(3) The President may at any time terminate the appointment of the Chairman without notice and without assigning any reason.

7. Members of the Board.- (1) The members of the Board, other than the ex-officio member shall, subject to sub-section (3), hold office for a term not exceeding three years and shall be eligible for re-appointment or re-nomination, as the case may be.

(2) A member, other than an ex-officio member, may at any time resign his office by writing under his hand addressed to the President but shall continue to perform his functions until his resignation has been accepted.

(3) The President may at any time terminate the appointment or, as the case may be, nomination of any member of the Board without notice and with out assigning any reason

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(As amended vide Ordinance No XIII of 1979, published in the Gazette of Pakistan, Extra, Feb, 24, 1979) Part I,



**8. Meetings of the Board.**—(1) The meetings of the Board shall be held at least twice a year and shall be presided over by the Chairman or, in his absence by its whole-time scientist member.

(2) All decisions at a meeting of the Board shall be taken by a majority of the votes of the members present and voting.

**9. Quorum at the meeting of the Board.**—To constitute a quorum at a meeting of the Board not less than nine members shall be present.

**10. Executive Committee.**— There shall be an Executive Committee consisting of the Chairman and the two other whole-time members of the Board.

**11. Delegation of powers.**—The Board may, from time to time, delegates to the Chairman or the Executive Committee such of its powers and functions as it may consider necessary.

**12. Adhoc Committees.**—The Foundation may set up ad hoc committees consisting of university professors and other leading scientists and experts to scrutinize applications for financial assistance for carrying out scientific research submitted to the Foundation by the universities or other institutions or by individual scientific workers or groups of scientific workers and to review ;and evaluate the results of research sponsored by the Foundation.

**13. Funds.**—The funds of the Foundation shall consist of—

- (a) grants made by the Federal Government and the Provincial Government donations and endowments ; and
- © income from other sources.

**14. Budget.**—The Foundation shall cause to be prepared and approve a statement of its receipt and expenditure for each financial year.

**15. Accounts and audit.**—(1) The funds of the Foundation shall be kept in a personal ledger account of the Foundation with the State Bank of Pakistan or with any Branch of the National Bank of Pakistan acting as an agent of the State Bank.

(2). The accounts of the Foundation shall be maintained in such form and manner as the Auditor-General of Pakistan may determine in consultation with the Federal Government.

(3) The accounts of the Foundation shall be audited by one or more auditors who are chartered accountants within the meaning of the Chartered Accountants Ordinance, 1961 (X of 1961), and are appointed by the Foundation in consultation with the Auditor-General of Pakistan.

**16. Appointment of officers and servants.—**(1) The Foundation may appoint such officers and servants, and engage such consultants or experts, as it may consider necessary for the efficient performance of its functions, on such terms and conditions as it may deem fit.

(2) In fixing the terms and conditions of service of its officers and servants, the Foundation shall as nearly as may be conform to the scales of pay, allowances and conditions of service applicable to the corresponding class of employees of the Federal Government.

**17. Annual report.—**(1) The annual report of the Foundation, which shall, among other things, clearly bring out the benefits accruing to the nation as a result of the activities sponsored by the Foundation, shall be prepared by the Chairman and submitted, through the Board, to the Federal Government alongwith the audited accounts of the Foundation.

(2) The annual report alongwith the audited accounts of the Foundation shall be laid before the National Assembly.

**18. Regulations.—**The Foundation may make Regulations for the efficient conduct of its affairs.

**19. Repeal.—**The Pakistan Science Foundation Ordinance, 1972 (LII of 1972), is hereby repealed.

**ANNEXURE-II****List of Projects Approved During 2011-12**

S. No.	Project Title & No.	P.I. Name, Designation & Address	Total Cost in Pak. Rs.
1.	Biological Effects of 5-Aminolevulinic Acid and Thiamine on Sunflower ( <i>Helianthus annuus</i> L.) under Saline Conditions PSF/Res/P-AU/Agr (393)	Prof. Dr. Muhammad Ashraf, Dean, Faculty of Sciences University of Agriculture Faisalabad	1,644,240/-
2.	Genetic Diversity of Some Ocypodoid Crabs with Special Reference to Genera <i>Uca</i> and <i>Macrophthalmus</i> along the Coast of Pakistan PSF/Res/S-KU/Bio (456)	Dr. Noor Us Saher Assistant Professor Centre of Excellence in Marine Biology, University of Karachi, Karachi	2,241,756/-
3.	Parasites of Foxes and Jackals in Eastern Balochistan. with Special Emphasis on Disease of Veterinary and Zoonotic Importance. PSF/Res/B-FGDC/Bio (458)	Mr. Sher Ahmed Lecturer Biology F.G Degree College Quetta Cantt.	673.220/-
4.	Reproductive Biology and Induced Spawning of Murrel, <i>Channa marulius</i> PSF/Res/P-UVAS/Bio (461)	Dr. Muhammad Ashraf Associate Professor Department of Fisheries and Aquaculture University of Veterinary and Animal Sciences, Lahore	2,261,544/-
5.	Mass Raring of Efficient Honeybee Queens PSF/Res/P-PRS/Bio (452)	Dr. Khawar Jawad Ahmed Entomologist Beekeeping & Hill Fruit Pests Research station, Rawalpindi	1,997,160/-
6.	Discovery of new anticancer drug from daphne oleaside PSF/Res/C-NUST/Chem (450)	Dr. Muhammad Riaz NUST, Centre of Virology and Immunology, H-12, Islamabad	2,700,449/-
7.	The anti-malaria potential of the active constituents and derivitized natural products of the aerial plants of <i>Alostonia</i> PSF/Res/S-PCSIR/Chem (455)	Dr. Nighat Sultana Pharmaceutical Complex PCSIR Karachi	2,462,994/-

8.	The efficient and facile synthesis of asymmetric Aldol adducts catalyzed by bifunctional diamine organo-catalysts PSF/Res/KPK-MU/Chem (461)	Dr. Muhammad Naveed Umer Department of Chemistry University of Malakand Dsitt. Dir	1,848,240/-
9.	Evaluation of metal tolerant non-edible crops for public health and economic viability of small farmers PSF/Res/P-AU/Envr (100)	Dr. Muhammad Sabir, Assistant Professor Institute of Soil and Environmental Sciences University of Agriculture Faisalabad	1,953,000/-
10.	Removal of toxic metals and textile dyes from wastewater using low cost adsorbents PSF/Res/P-PU/Envr (103)	Dr. Nadia Jamil Assistant Professor College of Earth & Environmental Sciences University of the Punjab Lahore	775,200/-
11.	Enhancing the Scope of Pakistan Science Abstracts (PSA) to Improve Research Infrastructure in Pakistan PSF/Res/C-NUST/Comp (37)	Dr. Sharifullah Khan Associate Professor School of Electrical Engineering & Computer Sciences National University of Science and Technology, Islamabad	1,664,436/-
12.	Indigenous Development of Multi-Biometric Authentication System PSF/Res/P-NUST/Comp (38)	Prof. Dr. Muhammad Javed Associate Dean College of Electrical and Mechanical Engineering NUST Rawalpindi	1,824,780/-
13.	CD4+ CD25+ T Regulatory Cells Level and Their Correlation with Duration of Type 2 <i>Diabetes mellitus</i> PSF/Res/P-UHS/Med(294)	Dr. Muhammad Nadeem Assistant Professor Department of Immunology University of Health Sciences Lahore	352,920/-
14.	VDR (Vitamin D Receptor) Polymorphism ( <i>FokI</i> and <i>BsmI</i> ) and Breast Cancer Risk in Pakistani Population PSF/Res/P-SKMCH/Med (306)	Dr. Muhammad Usman Rashid Research Scientist Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore	927,476/-
15.	Prevalence of <i>Acanthamoeba</i> in Natural Environment of Pakistan PSF/Res/C-IBGE/Med (307)	Dr. Abdul Matin Senior Scientific Officer Institute of Biomedical and Genetic Engineering (KRL) Islamabad	2,012,664/-



16.	Identification of Mutations in ATP7B Gene of Wilson disease (Hepatolenticular degenerations) in Pakistan Families PSF/Res/P-AMC/NUST/Med (279)	Maj. Gen. Abdul Khaliq Naveed Dean, Faculty of Medicine Head of Department of Microbiology Army Medical College National University of Science and Technology, Rawalpindi	1,314,240/-
17.	Molecular Characterization, Mass Production and Formulation of Entomopathogenic Nematodes PSF/ILP/S-KU/Bio (047)	Prof. Dr. Shahina Fayyaz Director National Nematological Research Center University of Karachi Karachi	8,671,224/-
18.	Pilot Scale Studies and Commercialization of Indigenous Deflouridation Technology for Drinking Water ILP/039/10	Dr. Tanzil Haider Usmani Director General PCSIR Laboratory Complex Karachi	3,792,080/-
19.	To Speed-Up the R&D Work and Production of Humic Acid Fertilizer from Lab. Scale to Pilot Plant/Commercial Scale ILG/044/11	Gulzar Husain Jhatial Director Fuel Research Center Pakistan council of Scientific & Industrial Research. Karachi	3,545,178/-
<b>Total</b>			<b>42,662,801/-</b>

**ANNEXURE-III****Details of Monitoring and Evaluation of On-Going Projects in 2011-12****A. Non Development Budget****a. Semi Annual Technical Reports**

<b>S #</b>	<b>Project No.</b>	<b>Project Title</b>	<b>Reports</b>
1.	PSF/Res/P-AU/Agr (381)	Entomopathogenic Fungi and Diatomaceous Earths for the Control of <i>Triboliumcastaneum</i> (Herbst.) (Coleoptera: Tenebrionidae) on Stored Wheat	1 <sup>st</sup>
2.	PSF/Res/P-AU/Agr (405)	Parasitoid wasps as source of novel insecticides molecules	1 <sup>st</sup>
3.	PSF/Res/S-SAU/Agr (383)	Management of Pests of Chilies in Sindh	1 <sup>st</sup>
4.	PSF/RES/P-AU/Bio (412)	Evaluation of Sugarcane Polysaccharides and Glycoprotein as Biological Response Modifiers and their Therapeutic Effects on <i>Eimeria</i> Infection in Chickens	2 <sup>nd</sup>
5.	PSF/RES/P-PU/Bio (410)	Effects of Pesticides Application and Refugia on Pest Control Potential of Spider Residing Rice Fields of Punjab, Pakistan	2 <sup>nd</sup>
6.	PSF/RES/S-KU/Bio (404)	Isolation and Characterization of Bio-active Protein from Thermotolerant Bacteria of Sub-optimal Habitat.	3 <sup>rd</sup>
7.	PSF/RES/S-KU/Bio (422)	Marine Gastropods: Species Identification, Chemotaxonomy and Biochemical Characterization of Medicinally Important Proteins- Hemocyanins.	1 <sup>st</sup>
8.	PSF/RES/P-PMAS/Bio (446)	Biodiversity and Ecology of Bats and Rodents in the Thorn Forests and Croplands of the Potohar Plateau	1 <sup>st</sup>
9.	PSF/RES/S-SU/Bio (423)	Taxonomy of Tettigoniidae (Ensifera) of Pakistan	1 <sup>st</sup>
10.	PSF/RES/P-AU/Bio (412)	Evaluation of Sugarcane Polysaccharides and Glycoprotein as Biological Response Modifiers and their Therapeutic Effects on <i>Eimeria</i> Infection in Chickens	3 <sup>rd</sup>
11.	PSF/RES/P-PMAS.AAU /Bio (418)	Ethnobotanical Survey of Thal Desert, Punjab, Pakistan	2 <sup>nd</sup>
12.	PSF/RES/B-PARC/Bio (439)	Epidemiological, serological, haematological and therapeutic studies on ovine nematodiasis in three ecological zones of Balochistan.	1 <sup>st</sup>

13.	PSF/RES/S-KU/Biotech (92)	Preconditioning of the stem and progenitor cells to increase their cardiomyogenic potential	1 <sup>st</sup>
14.	PSF/Res/C-QU/Biotech (100)	Role of endocytic adaptor proteins (APPL1/APPL2) in carcinogenesis	1 <sup>st</sup>
15.	PSF/Res/S-LUMH/Biotech (101)	Study of Genetic and Molecular Basis of Primary Congenital Glaucoma in Patients of Sindh	1 <sup>st</sup>
16.	PSF/Res/S-SU/Chem (441)	Analytical Application of FT-IR Spectroscopy in the Pharmaceutical Formulations	1 <sup>st</sup>
17.	PSF/Res/S-HEJ/Chem (426)	Metabolomics Profiling of Pakistani Healthy Persons, Smokers and Lung Cancer Patients by Modern Mass Spectrometric Tools for the Identification of Biomarker Compounds	1 <sup>st</sup>
18.	PSF/Res/S-KU/Med (278)	Transcription Factor as Potential Molecular Target for Cancer Chemotherapy in Human Pancreatic & Hepatic Cancer Cell Line	1 <sup>st</sup>
19.	PSF/Res/S-DUHS/Med (290)	Toxic Metals lead (Pb) & Cadmium (Cd) & trace elements (Zinc, (Zn), Copper(Cu), Iron (Fe) & Aluminum (Al) in Mothers Blood, cord blood & me conium of new born from industrial areas of Karachi	1 <sup>st</sup>
20.	PSF/Res/C-IBGE/Med (318)	House Dust Mite Species and Allergen levels in Pakistan population : Molecular Characterization and a Phylogenetic Analysis	1 <sup>st</sup>
21.	PSF/Res/P-AU/Phys (151)	Synthesis of Soft and Hard Ferrites and their Characterization Using Laser Induced Breakdown Spectroscopy	1 <sup>st</sup>
22.	PSF/Res/C-QU/Phys (152)	Gas Mixture Optimization study of pulsed De-plasma for Surface Hardening of Metals	1 <sup>st</sup>
23.	PSF/Res/P-AU/Phys (153)	Analysis of High Frequency Field in Focal or Caustic Region of an Inhomogeneous Slab of Chiral Medium	1 <sup>st</sup>
24.	PSF/Res/P-PU/Earth (82)	Sedimentological Studies of the Lower Eocene Sakesar Limestone Salt Range, Pakistan	1 <sup>st</sup>
25.	PSF/Res/C-PINSTECH/Earth (84)	Value Addition to Topaz by Neutron Irradiation	1 <sup>st</sup>
26.	PSF/Res/C-PINSTECH/Earth (84)	Value Addition to Topaz by Neutron Irradiation	2 <sup>nd</sup>
27.	PSF/Res/P-PU/Earth (242)	Sedimentology Petroleum Bearing Carbonate Rocks of Paleocene Age Kohat Potwar Area of Upper Indus Basin	2 <sup>nd</sup>

28.	PSF/Res/C-NUST/Engg (105)	Tribological Performance of Cam/Tappet Interaction in a Direct Acting Overhead Value –Train engine	1 <sup>st</sup>
29.	PSF/ILG/040/10	Investigation and Optimization of Combustion and Emissions Characteristics of Fatty Acid Methyl Esters of Different Origin	1 <sup>st</sup>

**b. First Annual Technical Reports**

S.#	Project No.	Project Title
1.	PSF/Res/P-AU/Agr (381)	Entomopathogenic Fungi and Diatomaceous Earths for the Control of <i>Tribolium castaneum</i> (Herbst.) (Coleoptera: Tenebrionidae) on Stored Wheat
2.	PSF/Res/P-PMASAAU/Bio (418)	Ethnobotanical Survey of Thal Desert, Punjab, Pakistan
3.	PSF/Res/P-AU/Bio (367)	Preparation of In-vitro Passaged live Attenuated Hydro-Pericardium Syndrome Virus (Local Isolate) Vaccine
4.	PSF/Res/P-UAAR/Bio (397)	Detection of multiple anthelmintic resistances of nematodes in small ruminants grazing Barani region
5.	PSF/Res/S-KU/Biotech (92)	Preconditioning of the stem and progenitor cells to increase their cardiomyogenic potential"
6.	PSF/Res/C-QU/Biotech (100)	Role of endocytic adaptor proteins (APPL1/APPL2) in carcinogenesis
7.	PSF/Res/S-HEJ/Chem (417)	Studies on Hepatoprotive effects of Bioactive Secondary Metabolites of Plants by using Antioxidant and relevant Bioassays
8.	PSF/Res/C-QU/Chem (419)	Computer Aided Identification and Synthesis of a Glucosidase inhibitors
9.	PSF/Res/S-HEJ/Chem (425)	Synthesis of Novel Piperidine like Compounds for Anticancer Activity
10.	PSF/Res/S-HEJ/Chem (426)	Metabolomics Profiling of Pakistani Healthy Persons, Smokers and Lung Cancer Patients by Modern Mass Spectrometric Tools for the Identification of Biomarker Compounds.
11.	PSF/Res/P-US/Chem (427)	Asymmetric Induction through Wittig reaction of Phosphonium Salts carrying Chiral Auxiliaries.
12	PSF/Res/P-UAAR/Med (259)	Prevalence of Non-Alcoholic Liver Disease (NAFLD) in Local Population of Pakistani Origin



13.	PSF/Res/S-KU/Med (261)	Computer Aided Identification of Cholinesterase Inhibitors for the Treatment of Alzheimer's Disease and Related Dementias
14.	PSF/Res/C-IBGE/Med (271)	Genetic screening of Pakistani population for CYP2D6 genotypes
15.	PSF/Res/C-COMSATS/ Med (280)	Assessment of Genetic Risk Factors of Glaucoma
16.	PSF/Res/C-QU/Med (255)	Effect of Peripheral Administration of Puberty onset Protein Kisspeptin on Male Sex Hormones and Spermatogenesis in Prepubertal Stages: an <i>in vivo</i> and <i>in vitro</i>
17.	PSF/Res/C-PINSTECH/Phys (145)	Fabrication of Nanowires by Electrochemical deposition in porous Membranes
18.	PSF/Res/C-PINSTECH/Earth (84)	"Value Addition to Topaz by Neutron Irradiation"
19.	PSF/Res/B-BU/Earth (86)	Basement Shear and Transpression near a Restraining Bend on the Chaman Fault an Investigation of the Structural Kinematics and Seismic Hazard in Northern Baluchistan
20.	PSF/Res/F-GIK/Engg (101)	Development of a GPS & Sensor based Mobile Robot; a Test bed for Research in Autonomous Navigation & GPS Applications

**c. Second Annual Technical Reports**

S.#	Project No.	Project Title
1.	PSF/Res/P-MAS.AAU/Agr (374)	Microbial Conversion of Agricultural Wastes Into Value Added Biofertilizer For Sustainable Legumes-Wheat Cropping System in Pothwar Region
2.	PSF/Res/C-QU/Bio (419)	Functional Analysis of a Proteinase Inhibitor Gene Construct for Insect Resistance
3.	PSF/Res/P-AU/Bio (412)	Evaluation of Sugarcane Polysaccharides and Glycoprotein as Biological Response Modifiers and their Therapeutic Effects on <i>Eimeria</i> Infection in Chickens
4.	PSF/Res/P-AU/Bio (405)	A Contribution to the Rust Flora of AJK (Azad Jammu & Kashmir) and Adjacent Northern Area of Pakistan

**d. Final Technical Reports**

S.#	Project No.	Project Title
1.	PSF/Res/F-NIFA/Agr (310)	Effect of mineral and organic nitrogen yield nitrogen deciduous palm fruit orchards

2.	PSF/Res/S-AU/Agr (382)	Documentation of Predatory Spiders and Their Role in Suppression of Pests of Major Crops in Sindh
3.	PSF/Res/P-AU/Bio (350)	Development, Standardization and Evaluation of Probiotics in Poultry
4.	PSF/Res/F-NIFA/Bio (141)	Mushroom cultivation and popularization as cottage industry in KPK, Pakistan
5.	PSF/Res/P-UAAR/Bio (264)	Selection of probiotic cultures for yogurt making
6.	PSF/Res/P-PMASAAU/Bio (420)	Ecology, Status and Management of Fisheries in Mangla Dam.
7.	PSF/Res/P-NIAB/Bio (353)	Studying the Role of Anti-Oxidant Enzymes in Controlling Programmed Cell Death (PCD) triggered in plants in response of Exogenous Stresses
8.	PSF/Res/C-PMNH/Bio (380)	Taxonomic and Ethnobotanical studies of economically important plants of Galiat with special reference to their trade
9.	PSF/Res/P-AU/Bio (375)	Prospects of breeding and culturing of <i>Channa marulius</i> by using different techniques.
10.	PSF/Res/S-AKU/Bio (244)	The effect of Ursodeoxycholic acid (UDCA) therapy on in- vitro gallbladder smooth muscle contractility
11.	PSF/Res/S-KU/Bio (342)	Biology of edible crabs ( <i>Portunus pelagicus</i> and <i>P. sanguinolentus</i> ) occurring in the coastal waters of Karachi
12.	PSF/Res/S-AKU/Bio (377)	Studies on effects of indigenous medicinal plants on hypercholesterolemia, hypertension and endothelial dysfunction
13.	PSF/Res/S-KU/Envr(78)	Biodiversity Systematics and Ecology of Free Living Marine Nematodes of Arabian Sea from Pakistan
14.	PSF/Res/P-AU/Envr(85)	Studies on Toxic Effects of Metal Mixtures on Fish
15.	PSF/Res/C-NUST/Envr (95)	Development of Rapid and Robust Analytical Methodologies for Detection of Elemental Containments in Environmental Samples using Laser Induced Breakdown Spectroscopy (LIBS)
16.	PSF/Res/C-QAU/Envr (93)	Removal of Inorganic and Organic Pollutants from water/ industrial wastes by Micellar Enhanced Ultra filtration (MEUF)
17.	PSF/Res/S-AKU/Med (210)	Deficiency Of Vitamins B <sub>6</sub> , B <sub>12</sub> And Folic Acid and Its Relationship To Hyperhomocysteinemia In A Pakistani

		Population: Is There Any Role Of Methylenetetrahy Drofolate Reductase Gene In Causing Hyperhomocysteinemia In This Population
18.	PSF/Res/P-UHS/Med (292)	Anti Inflammatory Effect of <i>zingiber officinale</i> (Ginger) and Methylprednisolone on the Rat Model of Allergic Inflammation
19.	PSF/Res/C-PINSTECH/Med (207)	Helicobacter Pylori in Children: Diagnostic Method Prevalence, Strain Identification and effect on Growth in Pakistanis
20.	PSF/Res/P-SKMCH/Med (240)	Metaplastic Breast Carcinoma: Histopathological Characteristics and EGFR/HER2-NEU Genes Expression
21.	PSF/Res/S-AKU/Med (263)	To Assess the Effect of Dietary Calcium intake and Vitamin D Status on Bone Turnover Markers in Pakistan Adult Females
22.	PSF/Res/F-PMRC/Med (204)	Treatment of HCV in Traditional Medicine: A scientific Evaluation through Blood Chemistry, Viral Load and level of patient Satisfaction in Pre and Post Treatment state
23.	PSF/Res/C-NUST/Phys (147)	Measurement of Dielectric Properties of Ceramics (Nano-Ferrites, R <sub>2</sub> Si <sub>2</sub> O <sub>7</sub> , R= Er, Ho, Dy)
24.	PSF/Res/S-KU/Earth (76)	Geological, Mineralogical and Geochemical studies of China Clay Deposits of Nagar Parkar for their Diversified and Value Added Industrial Applications
25.	PSF/Res/P-AU/Engg (53)	Decision Support System for Better Crop Productivity and Environmental Quality
26.	PSF/ILG/038/09	Indigenous Development of Formulation of Radiation Compatible Polypropylene for Industrial Manufacture of Medical Disposable Syringes

**e. Technical Reports Adopted by Technical Committees**

S. #	Project No.	Project title	Reports
1.	PSF/Res/P-MAS.AAU/Agr (374)	Microbial Conversion of Agricultural Wastes Into Value Added Biofertilizer For Sustainable Legumes-Wheat Cropping System in Pothwar Region	Final technical report
2.	PSF/Res/S-AU/Agr (382)	Documentation of Predatory Spiders and Their Role in Suppression	Final technical report

		of Pests of Major Crops in Sindh	
3.	PSF/Res/P-AU/Bio (350)	Development, Standardization and Evaluation of Probiotics in Poultry	Final technical report
4.	PSF/Res/P-AU/Bio (356)	Pigeon Newcastle Disease Virus: Surveillance, Pathogenicity for Chickens and Development of Vaccine for Control	2 <sup>nd</sup> annual technical report
5.	PSF/Res/P-AU/Bio (367)	Preparation of In-vitro Passaged live Attenuated Hydro-Pericardium Syndrome Virus (Local Isolate) Vaccine	1 <sup>st</sup> annual technical report
6.	PSF/Res/P-PU/Bio (410)	Effects of Pesticides Application and Refugia on Pest Control Potential of Spider Residing Rice Fields of Punjab, Pakistan	1 <sup>st</sup> annual technical report
7.	PSF/Res/P-AU/Bio (412)	Evaluation of Sugarcane Polysaccharides and Glycoprotein as Biological Response Modifiers and their Therapeutic Effects on <i>Eimeria</i> Infection in Chickens	2 <sup>nd</sup> annual technical report
8.	PSF/Res/P-PMASAAU/Bio (418)	Ethnobotanical Survey of Thal Desert, Punjab, Pakistan	1 <sup>st</sup> annual technical report
9.	PSF/Res/C-QU/Chem (419)	Computer Aided Identification and Synthesis of a Glucosidase inhibitors	1 <sup>st</sup> annual technical report
10.	PSF/Res/S-KU/Envr (78)	Biodiversity Systematic and Ecology of Free Living Marine Nematodes of Arabian Sea from Pakistan	Final technical report
11.	PSF/Res/P-AU/Envr (85)	Studies on Toxic Effects of Metal Mixtures on Fish	Final technical report



12.	PSF/Res/S-AKU/Med (263)	To Assess the Effect of Dietary Calcium intake and Vitamin D Status on Bone Turnover Markers in Pakistan Adult Females	Final technical report
13.	PSF/Res/P-UHS/Med (292)	Anti Inflammatory Effect of <i>Zingiber officinale</i> (Ginger) and Methylprednisolone on the Rat Model of Allergic Inflammation	Final technical report
14.	PSF/Res/P-UAAR/Med (259)	Prevalence Of Non-Alcoholic Liver Disease (NAFLD) in Local Population Of Pakistani Origin	1 <sup>st</sup> annual technical report
15.	PSF/Res/C-QU/Med (255)	Effect of Peripheral Administration of Puberty onset Protein Kisspeptin on Male Sex Hormones and Spermatogenesis in Prepubertal Stages: an <i>in vivo</i> and <i>in vitro</i>	1 <sup>st</sup> annual technical report
16.	PSF/Res/S-KU/Med (261)	Computer Aided Identification of Cholinesterase Inhibitors for the Treatment of Alzheimer's Disease and Related Dementias	1 <sup>st</sup> annual technical report
17.	PSF/Res/P-PU/Phys (131)	Nonlinear Electromagnetic Wave Propagation in Plasma Like Media	Final technical report
18.	PSF/Res/C-QU/Phys (134)	Measurements of Photo-Ionization Cross Section of Atoms	Final technical report
19.	PSF/Res/C-QU/Phys (138)	Developing a Proto-type Processing Reactor for Plasma Ionitriding of Steels	Final technical report
20.	PSF/Res/C-PINSTECH/Phys (145)	Fabrication of Nanowires by Electrochemical deposition in porous Membranes	1 <sup>st</sup> Annual technical report

**ANNEXURE-IV**

**Scientific Publications through PSF Funded Completed Projects in 2011-12**

S.No.	Project No.	Publications
1.	P-AU/Envr (85)	<ol style="list-style-type: none"> <li>1. Javed, M. 2012. Effects of metals mixture on the growth and their bio-accumulation in juvenile major carps. <i>Int. J. Agric. Biol.</i>, 14(3): 477-480. (I.F. 125).</li> <li>2. Javed, M. 2012 effects of zinc and lead toxicity on the growth and their bioaccumulation in fish. <i>Pak. Vet. J.</i>, 32(3): 357-362. (I.F. 1.25)</li> <li>3. Naz. S and M. Javed. Impact of metal mixture on the growth performance of fish under chronic stress conditions. <i>Int. J. Agric. Biol.</i> (in press)</li> <li>4. Naz. S and M. Javed. Studies on the toxic effects of lead and manganese mixture to the fish, <i>Ctenopharyngodon idella</i> and <i>Hypophthalmichthys molitrix</i> <i>int. J. Agric. BioI.</i> (Submitted)</li> <li>5. Naz. S and M. Javed. Growth responses of fish during chronic exposure of metal mixture under laboratory conditions. <i>Pak. Vet. J.</i> (Submitted)</li> <li>6. Naz. S and M. Javed. Acute toxicity of metals mixtures to fish, <i>Catla catla</i>, <i>Labeo rohita</i> and <i>Cirrhina mrigala</i>. <i>Pak. J. Agri. Sci.</i> (Submitted)</li> </ol>
2.	S-KU/Envr (78)	<ol style="list-style-type: none"> <li>1. Kamran, M., K. Nasira and F. Shahina (2009). Two new species of marine nematodes <i>Microlaimus amphidius</i> sp. N. and <i>M. karachiensis</i> sp. N, (Chromadorida) from Arabian Sea of Pakistan. <i>Int. J. Nematol.</i>, 19(2): 167-172</li> <li>2. Kamran, M., K. Nasira and F. Shahina (2009). Three new species of the genus <i>synonchium</i> Cobb, 1920 (<i>Chromadorida: Selachinematidae</i>) from mangrove areas of Pakistan. <i>Pak. J. Nematol.</i>, 27(2): 129-144</li> <li>3. Nasira, K., F. Shahina and M. Kamran (2009). Marine nematodes at port Bin Qasim of Arabian Sea and their role in the ecosystem. <i>Pak.J. Nematol.</i>, 27(2):187-191.</li> <li>4. Kamran, M., K. Nasira and F. Shahina (2010). <i>Halaphanolaimus marinus</i> sp. n. (nematode: <i>Chromadorida</i>) from Arabian Sea of Pakistan. <i>Int. J. Nematol.</i>, 20(1): 69-74</li> </ol>

		<p>5. Nasira, K., F. Shahina, M. Kamran and R. Ali (2010). Free living marine nematodes of <i>Sandspit</i> backwater mangrove area, Karachi. Pak. J. Nematol., 28(1): 149-151.</p> <p>6. Nasira, K., F. Shahina and M. Kamran (2010). Response of free-living marine nematode community to heavy metal contamination along the coastal areas of Sindh and Balochistan, Pakistan. Pak. J. Nematol., 28(2): 263-278.</p> <p>7. Nasira, K., B. Rehmat and F. Shahina (2010). <i>Diplolaimella dievengatensis</i>, <i>Theristus longisetifer</i> and <i>Trichotheristus floridanus</i> (Nematoda: Monhysteridae: Xyalidae) reported from Arabian Sea of Pakistan. Int. J. Nematol., 20(2): 179-184</p> <p>8. Nasira, K., B. Rehmat and F. Shahina (2010). Description of <i>Onyx bolochiensis</i> n. sp. (Nematoda: Chromadorida) wotj a cp,[emdoi, pf the gemis pmux cpnn. 1891 from of Pakistan. Pak. J. Nematol., 29(1):1-13</p> <p>9. Nasira, K., F. Shahina and M. Kamran (2010). Trophic composition of free-living marine nematodes in Sandspit backwater mangrove area, Karachi. In: Proc. <i>Transboundary</i> coastal and marine protected areas with special priorities for spawning ground (Pakistan). May 27-28, 2009. Zoological Survey Dept., Karachi, Pakistan (Submitted)</p> <p>10. Kamran, M., K. Nasira, and F. Shahina (2011). Three new records of free-living marine nematodes form coastal areas of Karachi, Pakistan. Pak. J. Marine Sci., (Accepted).</p>
3.	S-AKU/Med (263)	<p>1. Award: Part of this research was presented at 1<sup>st</sup> Middle-East and Africa Osteoporosis Meeting, 19<sup>th</sup>-22<sup>nd</sup> October, 2011 at Dubai and received Younger Investigator Award by international Osteoporosis Foundation.</p> <p>2. Abstract: AH. Khan, G.Naureen, R.Iqbal. 2011. Title: ‘Determination of bone health status in community dwelling females in Karachi, Pakistan’. Osteoporosis International. 22(5 Sppl): S694. IOF-Regional 1<sup>st</sup> Middle-East and Africa Osteoporosis Meeting; held at Dubai from 19<sup>th</sup>-22<sup>nd</sup> Oct.2011.</p> <p>3. Posters: AH. Khan, G.Naureen, F. Ahmed, F.Dar R.Iqbal. 2011. Title: ‘Determination of bone health status in community dwelling females in Karachi, Pakistan’. Health</p>

		<p>Sciences Research Assembly; December 14 and 15, 2011. Aga Khan University.</p> <p>4. R, Iqbal, G. Naureen, AH. Khan. 2011. Title: Housing Structure and Vitamin D3 Deficiency in Premenopausal Females Residing in Karachi-Pakistan. Health Sciences Research Assembly; December 14 and 15, 2011. Aga Khan University.</p>
4.	P-PU/Phys (131)	<p>1. The magnetostatic surface waves in a layered (dielectric/magnetic/conducting) waveguide structure has been published in the journal of Natural Sciences &amp; Mathematics, Vol. 47, No.1&amp;2, P.11-23 (2007), (Authors: Burhan Zamir and Rashid Ali)</p> <p>2. Wave propagation in parallel-plate waveguides filled with nonlinear left-handed material has been published in the Chinese Physics B, Vol. 20, No.1, (2011), in press, (Authors: Burhan Zamir and Rashid Ali)</p> <p>3. In the International Scientific Spring-2010 (March 01-06), NCP, Islamabad, (Authors: Burhan Zamir and Rashid Ali)</p>
5.	C-QU/Phys (134)	<p>1. Measurements of Photoionization Cross Section from 4p, 5d and 7s Excited States of Atomic Potassium. Nasir Amin, Shaukat Mahmood, M. Saleem and M.A. Baig, J. Quant. Spectrosc. Radiat. Transfer (USA), <u>109</u>, 863-872, 2008.</p> <p>2. Laser-optogalvanic studies of the 4p<sup>5</sup> ns and nd autoionizing resonances in krypton. M.A. Baig, M. Hanfi and M. Aslam, J. Phys. B: Atom Mol Opt Phys. (UK) , <u>41</u>, 035004, 2008</p> <p>3. High Resolution Measurements and MQDT Analysis of the 5d<sup>9</sup> 6s<sup>2</sup> np, nf (J=1) Auto-Resonances in Hg. M.A. Baig, E. Phys. J. D: Atom Mol Opt Phys (France) <u>46</u>, 437 – 442, 2008</p> <p>4. Spectroscopic studies of Ca plasma generated by the fundamental, second and third harmonics of a Nd:YAG laser. S Hafeez, Nek M. Shaikh and M. A. Baig, Laser Beam Interaction, (USA) <u>26</u>, 41-50, 2008</p> <p>5. Photo-excitation study of the 4s<sup>2</sup> S<sub>1/2</sub> state of atomic sodium. M. Rafiq, M. A. Kalyar and M. A. Baig J. Phys. B: Atom Mol Opt Phys. <u>41</u>, 115701-7, 2008</p>



		<p>6. Plasma Properties of Laser-ablated Strontium Target. S. Hafeez, N.M Shaikh, Baber Rashid, and M. A. Baig. J. Appl. Phys. (USA) <u>103</u> , 083117 – 15, 2008</p> <p>7. Angular momentum dependence of photoionization cross section from the excited states of lithium Isotopes. M. Saleem, Shahdi Hussain and M. A. Baig Phys. Rev. A. (USA) <u>77</u> , 062506 , 2008.</p> <p>8. Oscillator strength measurements of the <math>4s4p \ ^1,^3P_1 \rightarrow 4s \ nd \ ^1,^3D_2</math> transitions of Ca. S.U. Haq, R. Ali, M.A. Kalyar, M. Rafiq, Ali Nadeem, and M. A. Baig. E. Phys. J. D: Atom Mol Opt Phys. (France) <u>50</u> , 1 – 8, 2008</p> <p>9. Spectroscopic characterization of Laser ablation brass plasma. Nek. M. Shaikh, S. Hafeez, M. A. Kalyar, R. Ali and M. A. Baig. J. Appl. Phys. (USA) <u>104</u> , 103108 – 7, 2008</p> <p>10. Oscillator strength measurements of the <math>3p^5 \ (^2P_{1/2}) \ nd' \ [3/2]_2, [5/2]_{2,3}</math> autoionizing resonances in argon. M A Baig, S. Mahmood, Rafia Mumtaz, M. Rafiq, M. A. Kalyar, S. Hussain, R. Ali, Phys. Rev. A. (USA) <u>78</u> , 032524 – 12, 2008</p> <p>11. Plasma properties of stainless steel using laser induced breakdown spectroscopy. N. M. Shaikh, M. S. Kalhoro and M. A. Baig, Metallurgical Analysis (China) <u>28</u> , 127 – 134, 2008</p> <p>12. Measurement of Atomic Oscillator strength Distribution from the excited states. Shahid Hussain, M. Saleem and M. A. Baig Spectral Line Shapes (USA) <u>15</u> , 116 – 118, 2008</p> <p>13. Comparative Study of Electric Field Measurement in Glow Discharges using Laser Optogalvanic Spectroscopy. Shahid Hussain, M. Saleem and M. A. Baig, Spectral Line Shape, <u>15</u> , 169 – 171, 2008</p> <p>14. Photoabsorption Studies of the 4d subshell excitation spectra of silver. M. A. Baig, Phys. Rev. A. (USA) <u>79</u> , 012509, 2009</p>
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		<p>15. Oscillator strength measurements of the <math>5s6s\ ^1S_0 \rightarrow 5snp\ ^1P_2</math> Rydberg transitions of Sr. S.U. Haq, M.A. Kalyar, M. Rafiq, R. Ali, N. K. Piracha and M. A. Baig, Phys. Rev. A. (USA) 79 , 042502, 2009</p> <p>16. The study of the <math>1s_4-2p_j</math> optogalvanic transients in a neon discharge plasma , N K Piracha, R Feaver, T H Gillani, Rizwan Ahmed, R Ali and M A Baig Optics Communications 282 , 2532 – 2538, 2009</p> <p>17. Measurements of electron density, temperature and photoionization cross sections of the excited states of neon in a discharge plasma S. Mahmood, Nek M. Shaikh, M.A. Kalyar, M. Rafiq, M. A. Baig and N.K. Piracha J. Quant. Spectrosc. Radiat. Transfer (USA) 110 , 1840 – 50, 2009</p> <p>18. Two-step laser excitation of the highly excited even-parity states of atomic mercury Ali Nadeem, M Nawaz, S.U. Haq and M. A. Baig E. Phys. J. D: Atom Mol Opt Phys. (France) 53 , 147 – 151, 2009</p> <p>19. A comparative study of single and double pulse laser LIBS (A1), Rizwan Ahmed and M. A. Baig J. Appl. Phys. (USA) 106 , 033307, 2009</p> <p>20. Characterization of the laser ablated plume by Time of Flight mass spectrometer. M. Saleem, Asif Hameed, M. J. Iqbal and M. A. Baig. E. Phys. J. D: Atom Mol Opt Phys. (France) 55 , 121 – 126, 2009</p> <p>21. Study on plasma properties of stainless steel using laser induced breakdown spectroscopy. Shaikh N.M, Kalahoro M.S and Baig M. A. Metallurgical Analysis (China) 29 (7) , 7 – 13, 2009</p> <p>22. Interaction of the <math>6p^2\ ^1S_0</math> broad resonance with the <math>5dnd\ J=0</math> autoionizing resonances in barium. M. A. Kalyar, M. Rafiq and M. A. Baig Phys. Rev. A (USA) 80 , 052505, 2009</p> <p>23. Oscillator strength measurements of the highly excited <math>4s4p\ ^3P_1 \rightarrow 4snd\ ^3D_2</math> transitions of zinc.</p>
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		<p>S.U. Haq, A. Nadeem, M. Nawaz and M. A. Baig J. Opt. Soc. Am B: (USA) 27 , 402 – 07 , 2010</p> <p>24. Laser Induced Breakdown Spectroscopic studies of marbles and measurements of the plasma parameters. S Mahmood, S.A. Abbassi, S. Jabeen and M. A. Baig J. Quant. Spectrosc. Radiat. Transfer (USA) 111 , 689 – 695, 2010</p> <p>25. Measurements of the relative oscillator strengths of the Principal Series of Copper. I. Ahmed, A. Rashid and M. A. Baig Int. J. Mod. Phys. B: 24, 2189 – 2197, 2010</p> <p>26. On the optimization for enhanced dual pulse laser induced breakdown spectroscopy Rizwan Ahmed and M. A. Baig, IEEE. Transactions on plasma science (USA) 38 , 2052 – 2055 , 2010</p> <p>27. Two-color three-photon Excitation studies of thallium Rydberg States M Riaz, M. Anwar-ul-Haq, Raheel Ali and M. A. Baig, Optics Communications (Holland) 283 , 5046 – 5050 , 2010</p> <p>28. Laser excited population redistribution in the <math>2p^53p</math> multiplet in neon . N.K. Piracha, KV Duncan, R. Ali, M. A. Kalyar, R. Ahmed and M. A. Baig, Optics Communications (Holland), (in press), 2011</p>
6.	C-QU/Phys (138)	<p>1. Characterization of non-thermal Ne- N<sub>2</sub> mixture radio frequency discharge. N. U. Rehman, M. Zakauallah, F. U. Khan, S. Naseer, Journal of Applied Physics, 104, 123304 (2008).</p> <p>2. Diagnostic of 13.56Hz RF sustained Ar- N<sub>2</sub> plasma by optical emission spectroscopy. F. U. Khan, N. U. Rehman, S. Naseer, M. A. Naveed, A. Qayyu, N. A. D. Khattak, M. Zakauallah, European Physical Journal. Applied Physics, 45, 11002 (2009)</p> <p>3. Plasma nitrating of aluminum in a pulsed dc glow discharge of nitrogen, S. Naseer, F. U. Khan, N. U. Rehman, A. Qayyum, F. Rehmand, M. Zakauallah, European Physical Journal. Applied Physics, 49, 21001 (2010)</p> <p>4. Carburizing of zirconium using a Mather type plasma Ghulam Murtaza, S. S. Hussain, N. U. Rehman. S. Naseer, M. Shafiq and M. Zakauallah, focus, Surface &amp; Coating Technology, 205, 3012-3019 (2011).</p>

		<p>5. Effect of Excitation and vibrational temperature on the dissociation of nitrogen molecular in Ar- N<sub>2</sub> radio frequency discharge, F. U. Khan, N. U. Rehman. S. Naseer, M. Y. Naz, N. A. D. Khattak, M. Zakaullah, Spectroscopy Letters, 44, 194-202, (2011)</p> <p>6. S. Naseer M. Hassan, N. U. Rehman, N. A. D. Khattak, Z. Iqbal, M. Zakaullah, Surface nitriding of aluminium in Ar- N<sub>2</sub> RF discharge, Material Research Bulletin, (2011) (Submitted).</p> <p>7. N. U. Rehman, F. U. Khan, S. Naseer, G. Murtaza, S. S. Hussain, M. Shafiq, M. Zakaullah, Role of neon in the reactivity of nitrogen plasma generated with 13.56 MHz RF generator, plasma science technology, (2011) (In press).</p> <p>8. N. U. Rehman, F. U. Khan, S. Naseer, G. Murtaza, S. S. Hussain, M. Zakaullah, Trace-rare-gas optical emission spectroscopy of nitrogen-neon mixture plasma generated at 13.56 MHz Radiation Effects and Defects in Solids (2010) (In press).</p>



ANNEXURE-V

List of Scientists availed Travel Grants under Development Budget in 2011-12

Sr. #	Name and Address of Applicant	Title of the Conference / Date Duration & Venue/ T. Course	Amount Approved (Rs.)
01.	Prof. Dr. S. Sakhawat Shah Vice Chancellor Hazara University, Mansehra, KPK.  TG-II (406)/11	4 <sup>th</sup> Asian Conference on "Colloid and Interface Science (ACCIS2011)" to be held from 23 – 26, November 2011 at National Cheng Kung University, Taiwan, Republic of China  <i>"PVA Silica Hybrid Xerogels and Nanofibers through Sol-gel Processing and Electrospinning"</i>	125,221/-
02.	Ms. Fakhra Aziz Ph.D Scholar, FES, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi  TG-II (411)/11	ICCESSE 2011: International Conference on "Computer, Electrical and Systems Sciences and Engineering" to be held from 26 – 28 October, 2011 at Bali, Indonesia  <i>"The Influence of doping of fullerene derivatives (PCBM) on the optical properties of Vandyil phthalocyanine (VOPc)"</i>	115,000/-
03.	Dr. Abdul Samad Khan, Associate Professor (BS-20), Interdisciplinary Research Centre in Biomedical Materials (IRCBM), COMSATS Institute of Information Technology, Lahore.  TG-II (429)/11	25 <sup>th</sup> IADR-SEA Annual Scientific Meeting Conference to be held from 28 – 30 October, 2011 at NKF Centre, Singapore.  1. <i>"Synthesis and in-vitro analysis of Bioactive dental filler particle"</i> 2. <i>"In-situ structural and thermal analysis of dental restorative materials"</i>	151,800/-

04.	Dr. Shehzada Arshad Saleen Food Technologist, Food Technology Section, Agricultural Research Institute, Dera Ismail Khan, Khyber Pakhtun Khawa. 29020  TG-II (432)/11	International Symposium for Date Palm "Sympada 2011" to be held from 13 – 16 November, 2011 at Science & Technology University Houari Boumediene (USTHB), Algiers.  <i>"Optimization of Ripening in Dhakki Dated Stimulated by Brine and Vinegar Acid"</i>	133,208/-
05.	Col. Dr. Azad Ali Azad (BS-19), Army Medical College, Rawalpindi, NUST  TG-II (440)/11	25 <sup>th</sup> International Association of Dental Research (IADR) SEA Division Meeting and 22 <sup>nd</sup> Annual Scientific Meeting of South East Asia Association for Dental Education (SEAADE) at Singapore to be held from 28-30 October, 2011 at The Grand Copthorne Waterfront, Singapore.  <i>"Detection of Helicobacter Pylori on Denture Plaque of Dyspeptic Patients wearing complete Denture"</i>	173,466/-
06.	Syed Ghulam Musharraf, Assistant Professor Dr. Panjwani Centre for Molecular Medicine and Drug Research, University of Karachi, Karachi.  TG- II (463)/2011	The 1 <sup>st</sup> MEACR Meeting on CANCER Research to be held from 27-29 December, 2011 at Tanta, Gharbia, Egypt.  <i>"Plasma analysis of Non-Smokers, Smokers and Lung Cancer patients for pattern based Differentiation profiling of proteins and peptides by magnetic Bead Technology with MALDI-TOF MS"</i> .	118,286/-
07.	Muhammad Bilal, Assistant Professor Department of Statistics and Computer Science, University of Veterinary and Animal Sciences, Lahore.  TG- II (469)/2011	2 <sup>nd</sup> Global Islamic Marketing Conference to be held from 17-18 January, 2012 at Abu Dhabi, UAE.  <i>"Modeling Sugar-cane Production in Pakistan"</i> .	98,593/-

08.	Dr. Rana Iqtidar Shakoor, Senior Engineer (SPS-9/BPS-18), National Institute of Lasers & Optronics (NILOP), Islamabad TG- II (472)/2011	<i>“Winter college on Optics: Advances in Nano-Optics and Plasmonics”</i> to be held from 6-17 February, 2012 at The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.	206,274/-
09.	Dr. Ikhtiar Khan, Professor (BPS-21), Institute of Chemical Sciences, University of Peshawar, Peshawar. TG- II (471)/2011	5 <sup>th</sup> Saudi Science Conference “A new vision of the role of basic sciences in development” to be held from 16-18 April, 2012 at Umm Al-Qura University Makkah, Saudi Arabia. <i>“Climate change and food security- the impact of enhanced atmospheric Carbon dioxide on nutritional balance of Tomato (Lycopersicon esculentum)”</i> .	113,324/-
10.	Dr. Farooq Latif Principal Scientist Industrial Biotechnology Division, NIBGE, Faisalabad TG- II (474)/2011	1 <sup>st</sup> Biotechnology World Congress to be held from 14-15 February, 2012 at Dubai, UAE. <i>“A thermophilic <math>\beta</math>-glucosidase from Thermotoga maritima extends the upper limit of thermo tolerance; solution to global challenges in bioethanol production”</i>	109,048/-
11.	Dr. Nighat Sultana, Principal Scientific officer Pharmaceutical Research Center, PCSIR Laboratories Complex, Karachi. TG- II (481)/11	International Conference of Young Chemists (ICYC) from April 08-10, 2012 to be held at Amman, Jordan. <i>“Isolation and structure characterization of Iridoids from the aerial parts of Alstonia Scholaris”</i> .	101,144/-
12.	Dr. Liaqat Ali Qureshi, Professor (BS-21), Department of Civil Engineering, UET, Taxila. TG- II (485)/11	The 2 <sup>nd</sup> International Conference on Rehabilitation and Maintenance (ICRMCE) in Civil Engineering from March 8-10, 2012 to be held at Solo, Indonesia. <i>“Effect of mixing Fiber Cocktail on Flexural strength of Concrete”</i> .	132,357/-

13.	Muhammad Rais, Lecturer (BS-18), Department of Wildlife Management, Pir Mehr Ali Shah Arid Agriculture University. Rawalpindi. TG- II (487)/11	5 <sup>th</sup> School in Herpetology from 24 <sup>th</sup> February to 10 <sup>th</sup> March 2012 to be held at Department of Zoology, North Orissa Univeristy. Baripada 757003, Odisha, India.	71,000/-
14.	Prof. Dr. Muhammad Hassan GIK Institute of Engineering Sciences & Technology, Topi, KPK  TG- II (492)/11	“International Conference on Advances in Electrical & Electronics Engineering (ICAEEE’2012)” from April 13-15, 2012 to be held at Pattaya, Thailand.  “ <i>Fabrication of Al/N- BuPMMA/ITO Schottky Barriers Diode and Investigation of its Electrical Properties</i> ”.	117,052/-
15.	Prof. Dr. Muhammad Younus, Principal College of Veterinary & Animal Sciences, Jhang, University of Veterinary and Animal Sciences, Lahore.  TG- II (493)/11	“The 1 <sup>st</sup> Asia Dairy Goat Conference” from April 9-12, 2012 to be held at Kuala Lumpur, Malaysia.  “ <i>Johne’s Disease in Goats: A Histopathological and Serological Study</i> ”.	121,522/-
16.	Mr. Waqar Mahmood Ph.D Scholar, Department of Physics, COMSATS Institute of Information Technology, Islamabad.  TG- II (502)/11	“2 <sup>nd</sup> International Advances in Applied Physics & Materials Science Congress (APMS2012)” from April 26-29, 2012 to be held at WOW Kremlin Palace, Kundu- Antalya, Turkey. “ <i>Study of Cadmium Sulfide thin Films as a Window Layers</i> ”.	169,053/-
17.	Mr. Ali Nawaz, Lecturer Dr. M. A. Kazi Institute of Chemistry, University of Sindh, Jamshoro, Sindh.  TG- II (501)/11	“3 <sup>rd</sup> International Conference on Environmental Research and Technology” from May 30 – June 01, 2012 to be held at Park royal Hotel, Penang, Malaysia. “ <i>Novel Calixarene network resin for Cr (VI) Remediation: A Factorial Design Approach</i> ”.	107,768/-



18.	Mr. Saleem Abdullah, Ph.D Scholar, Department of Mathematics, Quaid-i- Azam University, Islamabad.  TG- II (512)/11	“Fifth Saudi Science Conference (SSC5’2012)” from April 16-18, 2012 to be held at Makkah, Saudi Arabia. <i>“Interval valued Intuitionistic Fuzzy sets in T-semihypergroups”.</i>	111,421/-
19.	Dr. Abdul Latif Qureshi, Professor (BS-21), Institute of Water Resources Engineering & Management, Mehran University of Engineering & Technology, Jamshoro, Sindh.  TG- II (521)/11	“16 <sup>th</sup> International Water Technology Conference (IWTC16)” from May 7-10, 2012 to be held at Fatih University, Istanbul, Turkey.  <i>“Optimization of Irrigation Water Management: A Case Study of Secondary Canal, Sindh, Pakistan”.</i>	74,730/-
20.	Ms. Sheza Ayaz Khilji. Ph.D Scholar, Department of Botany, University of the Punjab, Quaid-e-Azam Campus, Lahore.  TG-II (529)/11	“International Symposium on Biotechnology & other Omics in Vegetable Science” from April 29- May 2, 2012 to be held at Antalya, Turkey. <i>“Multivariate Analyses of Heavy Metal Contamination in Vegetables and in the Vicinity of some Industrial Areas of the Punjab”.</i>	166,548/-
21.	Mr. Gulzar Hussain Jhatial, Director / Principal Scientific Officer (BS-19), Fuel Research Centre, PCSIR, Off University Road, Karachi.  TG- II (508)/11	“UK-Pakistan Coal Conference (UKPKCC) 2012” from July 03-05, 2012 to be held at University of Leeds, UK.  <i>“Experiment of Underground Coal Gasification of Pakistani Lignite Coal”.</i>	116,795/-
22.	Dr. Muhammad Mohsin, Assistant Professor (BS-19), University of Engineering and Technology Lahore, Faisalabad Campus, Khurrianwala-Makkuana Road, Faisalabad.  TG-II(541)/II	“88 <sup>th</sup> Textile Institute World Conference 2012” from May 16-18, 2012 to be held at Selangor, Malaysia.  <i>“Development of Novel. Environment Friendly and Sustainable Finishing System for Cotton”.</i>	115,270/-

23.	Dr. Shahid Iqbal, Assistant Professor (BS-19), Department of Chemistry, University of Sargodha. Sargodha. TG-II(542)/II	International Seminar on "Current Technologies in Oil & Fats" from May 8–9, 2012 to be held at Selangor, Malaysia. <i>"Variation of Phytochemical attributes of Seed Oils among different Varieties of Pumpkin"</i> .	81,118/-
24.	Dr. Razia Sultana, Principal Scientific Officer (BS-19), Food & Marine Resources Center, PCSIR Laboratories Complex, Karachi. TG-II(535)/II	International Symposium on "Food Biotechnology and Sea Cucumber Utilization" from May 23-27, 2012 to be held at Ocean University, Qingdao. China. <i>"Growth Aspects of Spirulina major on Modified Zarrouk's Media"</i> .	108,179/-
<b>Total:</b>			<b>29,38,177/-</b>

**ANNEXURE-VI**

**List of Scientists availed Travel Grants under Non-Development Budget in 2011-12**

Sr. #	Name and Address of Applicant	Title of the Conference/Date Duration & Venue/ T. Course	Amount Approved (Rs.)
1.	Dr. Muhammad Azim Khan, Assistant Professor Department of Weed Science Agricultural University Peshawar  TG-II (375)/11	International short course on Allelopathy at Harbin China from 27th July-1st August, 2011	146,400
2.	Dr. Muhammad Rashid Awan Associate Professor, Department of Botany, Hazara University, Mansehra.  TG-II (391)/11	EPS Hohhot International Forum on Biodiversity 2011 held from August 3-5, 2011 At Inner Mergolin, China.  <i>“Ethno Botanical Studies from Northern Pakistan”</i>	183,096
3.	Mr. Syed Kashif Nawaz Post Doc Fellow Deptt. Of Microbiology and Molecular Genetics, University of Punjab, New Campus, Lahore.  TG-II (398)/11	Short course on Biomedical Research techniques X held from October 10-14, 2011at Post Graduate School, Erasmus MC, Universitair Medisch Centrum Rotterdam, The Notherlands  <i>“The estimation of acoustic effects on growing cells”.</i>	50,000
4.	Naheed Begum Rajpar Ph.D Students, Department of Genetics , University of Karachi  TG-II (400)/11	International Conference on “Conservation and Management of Pollinators” held from 14 <sup>th</sup> to 17 <sup>th</sup> September 2011 at Sarawak, Malaysia.  <i>“Multivariate Statistical Analysis of Morphometric Characters of Apis spp. Populations in District Khairpur Pakistan”</i>	105,860

5.	Abdul Hafeez Laghari Scientific Officer PCSIR, Karachi  TG(363)/2011	13 <sup>th</sup> International Symposium Advance in Extraction Technology 2011 held from September 27-29, 2011 at Kuala-Lumpur, Malaysia	139,532
6.	Mr. Saheeb Ahmed Kayani, Faculty Member, NUST, Islamabad.  TG(359)/2011	Training and Laboratory work on “ <i>characterization of a meteorite specimen</i> ” held from 5-16 December, 2011 at Division of Meteoritics and Cosmic Mineralogy, Department of Mineralogy, The Natural History Museum, Cromwell Road, London, UK	127,733
7.	Dr. Rahmatullah Qureshi, Associate Professor, PMAS- Arid Agriculture University, Rawalpindi  TG(534)/2011	Anthropology in the world held from 8 <sup>th</sup> – 11 <sup>th</sup> June, 2012 at London  “ <i>Medico-Ethno botany of Plants used by the Nomads of Nara Desert. Pakistan</i> ”.	174,567
<b>Total</b>			<b>927,188</b>



**ANNEXURE-VII****Detail of Science Caravan Exhibitions in 2011-12**

<b>FEDERAL UNIT:</b>				
<b>Exhibition Sites</b>	<b>Dates</b>	<b>No. of Days</b>	<b>No. of School</b>	<b>No. of Students</b>
Science Caravan Exhibition at Govt. Boys High School Rawat and Charan, Muree	27.6.2011 to 16.07.2011	20	45	4100
Science Caravan Exhibition at Govt. Boys High School Ghora Galli, Muree	19.08.2011 to 27.08.2011	09	31	2900
Science Caravan Exhibition at NMST Lahore	25.10.2011 to 29.10.2011	5		5000
Science Caravan Exhibition at Army Burn Hall College for Girls Abbottabad	31.10.2011 to 04.11.2011	5	2	1500
Planetarium and Film Show on independent day at NIH Islamabad	14.08.2011	1	2	2000
Science Caravan Exhibition at F.J Grammer Boys/Girls High School Fateh Jang, Attock	09.01.2012 to 13.01.2012	5	10	1500
Science Caravan Exhibition at Guidance House School & College System Mirpur (AJK)	12.02.2012 to 18.02.2012	7	12	2500
International Expo on Chemistry "Its All about Chemistry" at AIOU Islamabad	26.03.2012 to 30.03.2012	05	20	2000
Science Caravan Exhibition at DIL School Pind Malkan, Islamabad	09.04.2012 to 13.04.2012	5	10	1000
Science Caravan Exhibition at Al Habib Public High School Tariq Abad Muzaffarabad	15.04.2012 to 22.04.2012	8	15	3000
Science Caravan Exhibition at IMSG Chirah Islamabad	21.05.2012 to 25.05.2012	5	9	1600
Science Caravan Exhibition at Guidance House School & College System Mirpur (AJK)	12.02.2012 to 18.02.2012	7	12	2500
	<b>Total:</b>	<b>82</b>	<b>90</b>	<b>29600</b>

<b>PUNJAB UNIT:</b>				
Independence Day Celebration at PEACE College Faisalabad	14.08.2011	01	01	200
Govt. High School Khushab, Khabbeki	26.09.2011 to 06.10.2011	11	15	3550
Science Caravan Exhibition at Rabi Kisan Mela UAF, Faisalabad	18.10.2011 to 22.10.2011	05	1U+	10000
Science Caravan Exhibition at GGHS No.1 & GHS No.1 Tehsil Samundri	16.11.2011 to 03.11.2011	16	33	6669
World Science day Celebrated at Govt. Girls High School Summandri	22.11.2011	01	04	486
Science Caravan Exhibition at GHSS &GGHS Teshsil Chak Jhumra	12.12.2011 to 24.12.2011	12	26	5941
Science Caravan Exhibition at Govt higher Secondary School Chak # 452 GB Tehsil Tandianwala	09.01.2012 to 4.01.2012	06	08	1287
International Travling Expo "Its all about Chemistry" at AIOU Campus, Dera Ghazi Khan	02.02.2012 to 11.02.2012	10	22	2500
International Traveling Expo "Its all about Chemistry" and Planetarium Show at BZU, Multan	14.02.2011 to 26.02.2011	11	10S+2 U	5000
International Traveling Expo "Its all about Chemistry" + Planetarium Show at Children Library Complex, Lahore	23.02.2012 to 02.03.2012	09	24S+1 U	2500
Film & Planetarium shows at Green Field School Network Faisalabad	02.04.2012 to 05.04.2012	04	2	500
Science Caravan Exhibition at Govt. Comprehensive H.S & Govt High School, Mianwali	06.05.2012 to 19.05.2012	14	09	39,00
	<b>Total:</b>	<b>100</b>	<b>136</b>	<b>42533</b>
<b>KPK UNIT:</b>				
Celebration of Independence Day	14.08.2011	01	01	107
Science Caravan Exhibition at Zarakhela Shamoza Distt. Swat.	06.09.2011 to 17.09.2011	10	08	565

Science Caravan Exhibition at Govt. High School Nisatta Distt. Charsada.	17.10.2011 to 29.10.2011	13	15	1206
Celebration of World Science Day at Islamic Model School Hayatabad, Peshawar	22.11.2011	01	01	473
Science Caravan Exhibition at Govt. comprehensive Model School No. 01 Mardan Distt., Mardan.	08.12.2011 to 23.12.2011	16	11	1466
Science Caravan Exhibition at comprehensive Model School Margzar Distt. Sawabi	25.01.2012 to 14.01.2012	12	09	1192
Science Caravan Exhibition at comprehensive Model School Lahore Sawabi.	06.02.2012 to 14.02.2012	09	08	1487
Science Caravan Exhibition at Hira Degree College Ahmad Abd. Distt. Karak.	---	08	07	1378
Traveling Expo on Chemistry "It's all Chemistry" at Mansehra	---	10	11	1596
Traveling Expo on Chemistry "It's all Chemistry" at Peshawar	---	5	10	2000
Traveling Expo on Chemistry "It's all Chemistry" at wat	---	7	6	1653
Science Caravan Exhibition at Govt. High School Rehana Distt Haripur.	25.04.2012 to 14.05.2012	10	10	859
Science Caravan Exhibition at Govt. High School Kalabat Town Ship No. 2 Distt. Haripur.	04.05.2012 to 16.05.2012	09	17	1436
	<b>Total</b>	<b>111</b>	<b>114</b>	<b>15418</b>
<b>BALUCHISTAN UNIT:</b>				
Science Caravan Exhibition at Sanjavi Distt. Ziarat	16.11.2011 to 26.11.2011	10	09	1802
World Science day	22 Nov, 2011	01	01	258
Science Caravan Exhibition at Govt High school (Boys & Girls), Dera Allah Yar Distt. Jafferabad.	05.01.2012 to 20.01.2012	15	08	2603
School (Boys & Girls), Tehsil Hub Distt Lasbela.	12.02.2012 to 25.02.2012	11	11	3546

International EXPO on Chemistry at Sibi	02.04.2012 to 04.02.2012	03	15	5800
International EXPO on Chemistry at Sibi	05.04.2012 to 07.04.2012	03	20	4250
Competition on Chemistry at Quetta Models & Speech	25.03.2012 to 05.04.2012	10	20	100
International EXPO on Chemistry at Quetta	11.04.2012 to 14.04.2012	04	43	4000
Science Caravan Exhibition at Govt High school (Boys & Girls), Harnai Distt. Harnai.	06.05.2012 to 17.05.2012	11	12	2671
Science Caravan Exhibition at Govt High school (Boys & Girls) Killa Saifullah.	06.05.2012 to 17.05.2012	11	11	2175
	<b>Total</b>	<b>79</b>	<b>150</b>	<b>27205</b>
<b>SINDH UNIT II, TANDOJAM</b>				
Travelling EXPO on Chemistry "It's all about Chemistry" at Karachi.	04.01.2012 to 13.01.2012	10	15	6686
Travelling EXPO on Chemistry "It's all about Chemistry" at Tando Jam.	14.01.2012 To 21.01.2012	08	12	4260
Science Caravan Sindh Unit II Tando Jam arranged planetarium show with cooperation of Mehran TV at Syed Panah Ali Shah Model School. Jamshoro.	31.01.2012 to 01.02.2012	02	2	500
Science Caravn Sindh Unit II Tando Jam arranged Science Exhibition at AIOU & Govt. Boys higher Secondary School Umer Kot.	09.02.2012 to 18.02.2012	10	17	3853
Science Caravan Exhibition at Govt. Boys High School No.1 Tandojam Farm.	24.04.2012 to 02.05.2012	10	08	2320
Science Caravan Exhibition at Govt High school (Boys & Girls), Saeedabad, Distt. Matiari.	23.05.2012 to 31.05.2012	09	07	2190
	<b>Total</b>	<b>49</b>	<b>61</b>	<b>19809</b>



<b>SINDH UNIT SUKKUR</b>				
Science Exhibition at Taluka Rato-Dero District Larkana	23/09/2011 to 04/10/2011	12	13	4250
Science Exhibition at Taluka/District Kashmore, (Only Boys Unit No.1)	25/10/2011 to 05/11/2011	12	14	4400
Science Exhibition at Taluka / District Kashmore (Only Girls Unit No. II)	25/10/2011 to 05/11/2011	12	11	2400
Science Exhibition at Taluka Guddu District Kashmore (Only Boys and Girls Unit No.1)	21/11/2011 to 04/12/2011	14	08	
Science Exhibition at Taluka Kandh District Kashmore (Only Boys and Girls Unit No.1I)	21/11/2011 to 04/12/2011	14	13	3450
Science Exhibition at Taluka Naudero District Larkana (only Boys)	14/12/2011 to 21/12/2011	08	09	1900
International Travelling EXPO (It's all about chemistry) at SALU Khairpur Mirs.	22/01/2012 to 03/02/2012	13	18	6000
International travelling EXPO (it's all about chemistry) at the campus of AIOU Dera Ghazi Khan	11.02.2012 to 12.02.2012	08	17	4000
Science Exhibition at Taulka Naudero and Banguldero Distt. Larkana (only for Girls)	26.04.2012 to 10.05.2012	15	15	3350
Science Exhibition at Taulka Jaffarabad and Usta Muhammad distt. Jaffarabad Balochistan.	17.05.2012 to 20.05.2012	05	16	3000
	<b>Total</b>	<b>113</b>	<b>134</b>	<b>34550</b>

**ANNEXURE-VIII**

**List of Intra Board Essay (English/Urdu/Sindhi) Competition in 2011-12**  
**(Winner Students)**

**1. BSE Karachi**

<b>Sr.#</b>	<b>Name and Addresses of Winner Students</b>	<b>Name and Address of School</b>	<b>Medium</b>	<b>Position</b>	<b>Amount</b>
1.	Sara D/o Muhammad Yahya	Citizens Secondary School (Girls Campus), Karachi	English	1 <sup>st</sup>	Rs.5000/-
2.	Javeria Zakir D/o Zakir Hussain	B.M.B. Toddlers Girls Secondary School Frere Road Karachi	English	2 <sup>nd</sup>	Rs.3000/-
3.	Areeba Asif D/o Asif Saleem	Bahria Model School Campus-11 Majeed S.R.E. Karachi	English	3 <sup>rd</sup>	Rs.2000/-
4.	Hafiza Sumbul Rafiq D/o Muhammad Rafiq Kath,	Iqra Huffaz Girls Secondary School North Nazimabad, Karachi	Urdu	1 <sup>st</sup>	Rs.5000/-
5.	Sidra Arif D/o Muhammad Arif	Bahria Model School-11 Majeed S.R.E. Karachi	Urdu	2 <sup>nd</sup>	Rs.3000/-
6.	Nida Yaqoob D/o Muhammad Yaqoob	D.A Model High School Phase 1V, DHA., Karachi	Urdu	3 <sup>rd</sup>	Rs.2000/-
7.	Rohma Momna D/o Mashghool Ahad	Iqra Huffaz Girls Secondary School, North Nazimabad, Karachi	Sindhi	1 <sup>st</sup>	Rs.5000/-
8.	Mazher Majeed S/o Abdul Majeed	Gulistan Shah Abdul Latif Boys Secondary School Karachi	Sindhi	2 <sup>nd</sup>	Rs.3000/-
9.	Ramsha Jannat D/o Aziz Uddin	Metropolis Academy, Water pump Campus Karachi	Sindhi	3 <sup>rd</sup>	Rs.2000/-

## 2. BISE Abbottabad

Sr.#	Name of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Sumbal Tariq D/o Tariq Mehmood	Jinnah Jam-e-School and college Haripur.	English	1 <sup>st</sup>	Rs.5000/-
2.	Aymen Khalid Abbasi D/o Dr.Khalid Asif	Banat Taleem ul Quran HS & College Abbottabad	English	2 <sup>nd</sup>	Rs.3000/-
3.	Umeroman D/o Syed Zulifqar Ali	Khyber PS & College Manserhra	English	3 <sup>rd</sup>	Rs.2000/-

## 3. BISE Rawalpindi

Sr.#	Name and Addresses of Winner Students	Name and Address of Sachool	Medium	Position	Amount
1.	Zukhruf Liaquat D/o Liaquat Hussain Khan	Siddeeq Public School 6 <sup>th</sup> Road,Satellite Town Rawalpindi	Urdu	1 <sup>st</sup>	Rs.5000/-
2.	Aqsa Ameer D/o Ameer Muhammad Khan	Siddeeq Public School 6 <sup>th</sup> Road,Satellite Town Rawalpindi	English	2 <sup>nd</sup>	Rs.3000/-
3.	Aimen Noor D/o Liaquat Ali	Fauji Foundation Higher Secondary School Fateh Jang District Attock	English	3 <sup>rd</sup>	Rs.2000/-

## 4. BISE Multan

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Haroon Afzal	Divisional Public School & Inter College Sahiwal	English	1 <sup>st</sup>	Rs.5000/-
2.	Ayesha Mahnoor	Multan Public School & College for Girls Multan	English	2 <sup>nd</sup>	Rs.3000/-
3.	Sajal Bashir	Govt. Model Girls Pilot Secondary School Sahiwal	English	3 <sup>rd</sup>	Rs.2000/-

### 5. BISE Hyderabad

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Miss Isbaah Shah D/o Syed Akram Ali	Sindh Grammar School Qasimabad Hyderabad	English	1 <sup>st</sup>	Rs.5000/-
2.	Miss Syeda Amna D/o Syed Rizwan Ali	Falcon House Grammar School Hyderabad	English	2 <sup>nd</sup>	Rs.3000/-
3.	S. Shehryar Ali Naqvi S/o S. Ansar Ali Naqvi	Country Cambridge High School Hyderabad	English	3 <sup>rd</sup>	Rs.2000/-
4	Usama Bin Saeed S/o Mohd Saeed Khan	Public School Hyderabad	Urdu	1 <sup>st</sup>	Rs.5000/-
5	Miss Urooj D/o Shakir Hussain	Govt:(N) APWA (G) H/School Latifabad Hyderabad	Urdu	2 <sup>nd</sup>	Rs.3000/-
6	Miss Fiza Kainat D/o Iftikhar Ali	Happy Home High School Kotri	Urdu	3 <sup>rd</sup>	Rs.2000/-
7	Miss Rabail D/o Illahi Bux Parhyar	Govt. Girls H/Sec School Hussainabad Hyderabad	Sindhi	1 <sup>st</sup>	Rs.5000/-
8	Miss Um-e-Kalsoom D/o Fazal-ud-Din	Public School Hyderabad	Sindhi	2 <sup>nd</sup>	Rs.3000/-
9	Miss Aqsa Noor D/o Abdul Razzaque	Falcon House Grammar School Hyderabad	Sindhi	3 <sup>rd</sup>	Rs.2000/-

### 6. BISE Larkana

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Hasnain Khan S/o Muhammad Hassan Solangi	Govt.Sent Joseph High School Larkana	English	1 <sup>st</sup>	Rs.5000/-
2.	Musawar Ahmed S/o Maqsood Ali	Govt. Pilot Higher Secondary School Larkana	English	2 <sup>nd</sup>	Rs.3000/-
3.	Moona Solangi D/o Shah Muhammad Solangi	O.P.F. Public School Larkana Near Ghalib Nagar Opp:TNT Office	English	3 <sup>rd</sup>	Rs.2000/-
4.	Waliullah Bakhrani S/o Abdul Haq Bakhrani	Govt. Higher Secondary School Sultankot Distt. Shikarpur	English	3 <sup>rd</sup>	Rs.2000/-



### 7. BISE Sargodha

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Muhammad Farooq S/o Muhammad Yaqoob	Govt.English medium High School Girote P/O Girote The & Distt Khushab	English	1 <sup>st</sup>	Rs.5000/
2.	Sania Shahid D/o Muhammad Shahid	Comprehensive Model High School Sillanwali Distt Sargodha	English	2 <sup>nd</sup>	Rs.3000/
3.	Muhammad Shoaib Aslam S/o Muhammad Aslam	Comprehensive Model High School Sillanwali Distt Sargodha	English	3 <sup>rd</sup>	Rs.2000/

### 8. FBISE Islamabad

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Monazza Batool D/o Amjad Hussain	Quality School N.K.Ahmad Road Near Anwar Chowk POF's Sports Complex Wah Cantt Rawalpindi	English	1 <sup>st</sup>	Rs.5000/
2.	Arfa Shafique D/O M Shafique Hashmi	Fazaia Inter College Jinnah Camp Khanna Road Chaklala Rawalpindi	English	2 <sup>nd</sup>	Rs.3000/
3.	Kinza Ali Asghar D/O Ali Asghar Awan	Quality School Near PSO Petrol Pump Misrial Road Rawalpindi	English	3 <sup>rd</sup>	Rs.2000/

### 9. BISE Faisalabad

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Zulaikha Batool D/O Muhammad Afzal Majeed	Govt. Comp. Girls High School Madina Town Faisalabad	English	1 <sup>st</sup>	Rs.5000/
2.	Momina Javaid D/O Javaid Ahmad	Divisional Public School and College Faisalabad	English	2 <sup>nd</sup>	Rs.3000/
3.	Hamza Hassan Khan S/O Khan Bahadur Javed	Anmol Public High School Gulshan-e- Rafique Faisalabad	English	3 <sup>rd</sup>	Rs.2000/

### 10. BISE Peshawar

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Darakshan Safdar D/o Safdar Bari	Frontier Works Acaemy Hayatabad, Peshawar	English	1 <sup>st</sup>	Rs.5000/-
2.	Mashal Jamil D/o Shahid Jamil	Frontier Works Acaemy Hayatabad, Peshawar	English	1 <sup>st</sup>	Rs.5000/-
3.	Faiz ur Rehman	Islamia Collegiate School Peshawar	English	2 <sup>nd</sup>	Rs.3000/-
4.	Muhammad Sajjad	Islamia Collegiate School Peshawar	English	2 <sup>nd</sup>	Rs.3000/-
5.	Saba Bilqees D/o Roz Wali Khan	Frontier Works Acaemy Hayatabad, Peshawar	English	3 <sup>rd</sup>	Rs.2000/-
6.	Hina Gul D/o Muhammad Amin Khan	Frontier Works Acaemy Hayatabad, Peshawar	English	3 <sup>rd</sup>	Rs.2000/-

### 11. BISE Lahore

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Hafeez-ur-Rehman S/o Fazal-ur-Rehman	Govt.High School for Boys Sheikhpura	English	1 <sup>st</sup>	Rs.5000/
2.	Hira Rafiq D/o Muhammad Rafiq	District Public School and College for Girls Officer's Colony ,Kasur	English	2 <sup>nd</sup>	Rs.3000/
3.	Attiya Munawar D/o Shahid Nadeem Ahmed	L.D.A Model Girls High School 176, Jahanzeb Block Allama Iqbal Town Lahore	English	3 <sup>rd</sup>	Rs.2000/
4.	Anam Khan	Adbistan-e-Sophia High School for Girls Near Mozang Chowk Lahore	English	3 <sup>rd</sup>	Rs.2000/
5.	Iqra Saleem	Workers Welfare School (Girls) Rana Town Shahdara Lahore	English	3 <sup>rd</sup>	Rs.2000/
6.	Muhammad Yasir Ilyas	Govt High School Kharianwala P/O Teh & Distt. Sheikhpura	Urdu	1 <sup>st</sup>	Rs.5000/
7.	Waseem Riaz S/o Muhammad Riaz	Govt. Pilot Secondary School Sharqpur Sharif Teh & Distt Sheikhpura	Urdu	2 <sup>nd</sup>	Rs.3000/
8.	Muhammad Ferhan S/o Safdar Ali	The Trust School 21, Westwood Colony Thokar Niaz Baig Lahor	Urdu	3 <sup>rd</sup>	Rs.2000/
9.	Freeha Khadim	City District Govt.Girls High School Dodi Peer Sultanpur Lahore	Urdu	3 <sup>rd</sup>	Rs.2000/

**12. BISE Kohat**

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Sadaf Aman D/o Aman Ullah Kahn	Fauji Foundation Model School AEN House (Pak Railways ) Kohat	English	1 <sup>st</sup>	Rs.5000/
2.	Muhammad Faisal S/o Muhammad Hussain	Paradise Public School & College P/O Dabb, Bago Khel Tehsil & Distt Karak	English	2 <sup>nd</sup>	Rs.3000/
3.	Sahar Javed D/o Zafar Javed	Fauji Foundation Model School AEN House (Pak Railways ) Kohat	English	3 <sup>rd</sup>	Rs.2000/
4	Sakeena Bibi D/o Ain-ud-Din Khan	G.G.H.S. No.2, Kohat	Urdu	1 <sup>st</sup>	Rs.5000/
5	Shafqat Adnan	St. Joseph Convent High School Kohat Cantt	Urdu	2 <sup>nd</sup>	Rs.3000/
6	Saqib Rehman S/o Ali Rehman	Fauji Foundation Model School AEN House (Pak Railways ) Kohat	Urdu	3 <sup>rd</sup>	Rs.2000/

**13. BISE Mirpur**

Sr.#	Name And Addresses of Winner Students	Name and Address of School	Medium	Position	Amount
1.	Saad Shabir S/o Muhammad Shabbir	Kashmir Model College, D-4, Mirpur (AJK)	English	1 <sup>st</sup>	Rs.5000/
2.	Humaira Kouser D/o Muhammad Ayub	Govt. Girls Degree College Panteri 05827-962701	English	2 <sup>nd</sup>	Rs.3000/
3.	Sana Zafar D/o Zafar Iqbal	Govt. Girls Degree College Panteri	English	3 <sup>rd</sup>	Rs.2000/

**ANNEXURE-IX****List of Inter Board Science Poster Competition 2011-12**  
**(Winner Students)****1. BISE Karachi**

1.	Akhtar Ali S/O Zafar Akhtar	Student Academy Gulshan-E-Iqbal, Karachi	1 <sup>st</sup>	Rs.5000/-
2.	Fatima Saud D/O Saud Ahmad	Hamdard Public School, Karachi	2 <sup>nd</sup>	Rs.3000/-
3.	Ramsha Bint-E-Hayder D/O Hayder Ali	Hamdard Public School, Karachi	3 <sup>rd</sup>	Rs.2000/-

**2. BISE Sargodha**

1.	Sana Majeed D/O Abdul Majeed	Govt.Comp. Girls High School Sargodha	1 <sup>st</sup>	Rs.5000/-
2.	Muqaddas D/O Zafar Ali	Govt Girls English Medium High School Sillanwali Sargodha	2 <sup>nd</sup>	Rs.3000/-
3.	Arooj Ayesha D/O Muhammad Abdul Jabbar	KPC Model H/S School KPC Colony Chowk Girot Jauharabad, Khushab	3 <sup>rd</sup>	Rs.2000/-

**3. BISE Abbottabad**

1.	Urooj Ul Islam D/O Pervaiz Shah	Quaid-e-Azam School & Girls College KTS Haripur	1 <sup>st</sup>	Rs.5000/-
2.	Umar Shoukat S/O Shoukat Hussain	Al-Imtiaz Academy Abbottabad	2 <sup>nd</sup>	Rs.3000/-
3.	Amina Khan D/O Jamil Khan	Al-Imtiaz Academy Abbottabad	3 <sup>rd</sup>	Rs.2000/-

**4. BISE Hyderabad**

1.	Miss Aisha D/O Mohd. Toufique	County Cambridge High School, Hyderabad	1 <sup>st</sup>	Rs.5000/-
2.	Miss Asna Ishtiaq D/O Ishtiaq Sadiq	Sindh Grammar School Qasimabad, Hyderabad	2 <sup>nd</sup>	Rs.3000/-
3.	Miss Ayesha Arain D/O M. Sarwar	H.M Khoja Girls H/S Society Nawabshah	3 <sup>rd</sup>	Rs.2000/-

**5. BISE Rawalpindi**

1.	Safia Batool D/O Khaliq Butt	Govt.Girls High School No.1 Chakwal	1 <sup>st</sup>	Rs.5000/-
2.	Hamna Naeem D/O Naeem Afzal	Govt.Girls High School No.1 Chakwal	2 <sup>nd</sup>	Rs.3000/-



3.	Sajida Parveen D/O Haji Ghulam Rasool	Govt. Girls High School Khayaban-E-Sirsyed Sect 1 Rawalpindi	3 <sup>rd</sup>	Rs.2000/-
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#### 6. BISE Multan

1.	Maryam Nadeem	Worker Welfare School For Gils Gulraiz Colony MDA Road, Multan	1 <sup>st</sup>	Rs.5000/-
2.	Rida Stephen D/O Stephen Akhtar	Saint Marys Convent Girls Higher Secondary School, Multan Cantt	2 <sup>nd</sup>	Rs.3000/-
3.	Saqba Jamil D/O Muhammad Jamil	Multan Cambridge High School for Girls Qasim Bela, Multan	3 <sup>rd</sup>	Rs.2000/-

#### 7. BISE Islamabad

1.	Shafaq Zaheer S/O Mirza Muhammad Zaheer	Kid City High School Nai Abadi, Model Town Hummak, Islamabad	1 <sup>st</sup>	Rs.5000/-
2.	Inshal Mehmood D/O Asif Mehmood	Saleem Nawaz Fazaia College PAF Base Masroor, Karachi	2 <sup>nd</sup>	Rs.3000/-
3.	Aasya Murtaza D/O Ghulam Murtaza	Abdul Razzaq Fazaia College PAF Base, Mianwali	3 <sup>rd</sup>	Rs.2000/-

#### 8. BISE Sukkur

1.	Bisma Shaikh D/O Mushtaque Ahmed Shaikh	Model School Shah Abdul Latif University Khairpur	1 <sup>st</sup>	Rs.5000/-
2.	Maria Mirbahar D/O Khawand Bux Mirbahar	Govt. Girls H/S School Rohri, Gurgage Mohalla Station Road, Rohri	2 <sup>nd</sup>	Rs.3000/-
3.	Fozia Shaikh D/O Haji Ghulam Muhammad Shaikh	Bahria Foundation College National Highway Ranipur, Distt. Khairpur	3 <sup>rd</sup>	Rs.2000/-

#### 9. BISE Kohat

1.	Iftikhar Alam	Fauji Foundation Model School, Kohat	1 <sup>st</sup>	Rs.5000/-
2.	Arifa Ramazan	Working Folks Grammar High School, Kohat	2 <sup>nd</sup>	Rs.3000/-
3.	Asher Jacob	St.Joseph Convent High School, Kohat	3 <sup>rd</sup>	Rs.2000/-

#### 10. BISE Murpur (AJK)

1.	Mohsin Shabbir S/O Muhammad Shabbir Raja	Govt High School Dahri Thothal, Mirpur (AJK)	1 <sup>st</sup>	Rs.5000/-
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2.	Sheikh Muhammad Waseem S/O Sheikh Muhammad Rafique	Govt.High School Dahri Thothal, Mirpur (AJK)	2 <sup>nd</sup>	Rs.3000/-
3.	Samreena Jabeen D/O Muhammad Riaz	Govt. Girls Degree College Chakswari The & Distt. Mirpur (AJK)	3 <sup>rd</sup>	Rs.2000/-

#### 11. BISE Lahore

1.	Exza Shahid D/O Shahid Hameed Khan	Cathedral School for Girls No.4, 1/P Model Town, Lahore	1 <sup>st</sup>	Rs.5000/-
2.	Ayema Rehman	The Punjab School Sher Shah Road Kot Khawaja Saeed, Lahore	2 <sup>nd</sup>	Rs.3000/-
3.	Hira Siddique D/O Muhammad Siddique	Laurel Bank Public School for Girls G.T Road, Lahore	3 <sup>rd</sup>	Rs.2000/-

#### 12. BISE Faisalabad

1.	Iqra Musart D/O Muhammad Ilyas	Govt Girls Higher Secondary School Rajana Toba Tek Singh	1 <sup>st</sup>	Rs.5000/-
2.	Musfira Fatima D/O M.Zubair Hashim	PACE Foundation School Jhang Road, Faisalabad	2 <sup>nd</sup>	Rs.3000/-
3.	Nehal Amir D/O M.Tahir Saeed	City Star Public High School Faisalabad. 424-A, People Colony No.1, Near Faisal Hospital	3 <sup>rd</sup>	Rs.2000/-

#### 13. BISE Peshawar

1.	Miss Saadia Afridi	Frontier Youth Academy Hayatabad Peshawar	1 <sup>st</sup>	Rs.5000/-
2.	Muhammad Faizan	St/Mary's H/School, Peshawar	1 <sup>st</sup>	Rs.5000/-
3.	Amina Javed D/O M.Javed	Frontier Youth Academy Hayatabad, Peshawar	2 <sup>nd</sup>	Rs.3000/-
4.	Shabana Mir D/O Dr.Mir Ahmed Shah	Frontier Youth Academy Hayatabad, Peshawar	3 <sup>rd</sup>	Rs.2000/-

#### 14. BISE Larkana

1.	Syed Tafseer Muzamil S/O Syed Abrar Hussain	Govt. Pilot Higher Secondary School Larkana	1 <sup>st</sup>	Rs.5000/-
2.	Mr.Mujeeb-u-Rehman S/O Muhammad Ibrahim	Govt. Sent Joseph High School Larkana	2 <sup>nd</sup>	Rs.3000/-
3.	Mr.Ghulam Mustafa S/O Pervaiz Riaz Ahmed Buledi	College for Superior Services (CSS) Larkana	3 <sup>rd</sup>	Rs.2000/-

**ANNEXURE-X****List of Schools/Organizations Provided Financial Assistance in 2011-12**

<b>Sr. No</b>	<b>School/Institute Name</b>	<b>Purpose</b>	<b>Amount</b>
1.	Govt. High School Mohib Banda, Distt. Nowshera	Purchase of Computers	Rs.50,000/-
2.	Govt. High School Saghri, Tehsil Jand, Attock	Purchase of Lab. Equipment	Rs.25,000/-
3.	Govt.High School Dhulli, Talagang Distt. Chakwal	Purchase of Lab. Equipment	Rs.50,000/-
4.	COMSTATS Institute of Information Technology Quaid Avenue The Mall, Wah Cantt	Sponsorship for Visio Spark 2011	Rs.50,000/-
5.	National Museum of Science and Technology, Lahore	Prize Money for winner students of Annual Science Competitions, 2012	Rs.50,000/-
6.	The National University Of Science and Technology, College of E & ME Rawalpindi	Award of Prize Money to the winner students of NERC 2012.	Rs.4,40,000/-
7.	Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Sawabi.	Certificates and Medals/Shields to the winners of "13 <sup>th</sup> GIKI All Pakistan Science Fair, 2012"	Rs.50,000/-
8.	Private School Network, Islamabad	Award of Prize Money to the winner students of 4th Annual Science Exhibition.	Rs.50,000/-
9.	Govt. Girls Amrao Ali Khan Higher Secondary School, Roshan Bheela, Distt. Kasur	Purchase of computer	Rs.50,000/-
10.	Govt. Girls Nawaz Ahmad Khan Higher Secondary School, Roshan Bheela, Distt. Kasur	Purchase of Lab. Equipment	Rs.35,000/-
11.	Al-Qalam Public School, Skardu	Purchase of Lab. Equipment	Rs.35,000/-
12.	F. G. Girls High School, Olding Kharmang. Skardu	Purchase of Lab. Equipment	Rs.35,000/-
13.	Govt. High School, Rawat Tehsil. Murree Rawalpindi	Purchase of Lab. Equipment	Rs.50,000/-
14.	Govt. Boys High School, Usta Muhammad, Distt. Jaffarabad	Purchase of computer	Rs.50,000/-
15.	Govt. Primary School, Kashmirkot, Tehsil Jhat Pat, Jaffarabad	Purchase of computer	Rs.50,000/-

16.	Govt. Boys High School, Haq Bahoo, Usta Mohammad, Jaffarabad	Purchase of computer	Rs.50000/-
17.	Pak –Irish Rehabilitation Centre, Abbottabad	Purchase of Multimedia and Books	Rs.50,000/-
18.	Govt. Saigol Model Higher Secondary School Saigolabad, Chakwal	Purchase of Laboratory Equipment	Rs.50,000/-
19.	Govt. Girls H/S Dhulli, Tehsil Talagang, District Chakwal	Purchase of Science Apparatus	Rs.30,000/-
20.	Islamabad Model College for Girls, F-10/2, Islamabad	Purchase of Computers and Laptop	Rs.75,000/-
21.	Govt. Girls High School Phool Nagar District Kasur	Purchase of Science Lab. Equipment and Computers	Rs.50000/-
22.	Govt. High School No.1, Tehsil Samundri, District Faisalabad	Purchase of Science Lab. Equipment	Rs.50000/-
23.	Government Elementary School Chak No.13 Noorka, District Chiniot	Purchase of Science Lab. Equipment	Rs.50000/-
24.	Govt.High School No.2 Phool Nagar Tehsil Pattoki, District Kasur	Purchase of Science Lab. Equipment and Computers	Rs.50000/-
25.	Govt Girls. High. School Chak Sathwani Tehsil Kallar Syedan Rawalpindi	Purchase of Science Lab. Equipment	Rs. 40,000/-
26.	Govt. Model High School Naushahra Tehsil & District Khushab	Purchase of Science Lab. Equipment	Rs. 40,000/-
27.	Govt. Boys High School Dhamali Tehsil Kallar Syedan District Rawalpindi	Purchase of Science Lab. Equipment	Rs. 30,000/-
28.	Govt. Girls Higher Secondary School, Ratodero (Sindh)	Purchase of Science Lab. Equipment	Rs.50000/-
29.	Govt. Postgraduate College Tehsil Jaranwala, Faisalabad.	Purchase of Science Lab. Equipment	Rs.75,000/-
30.	Centre for Disaster Preparedness & Management University of Peshawar	Financial Assistance for Disaster Management Exhibition-2012	Rs.75,000/-
31.	F. J. Grammar Boys/Girls High School Fateh Jang (Attock)	Purchase of Science Lab. Equipment and Computers	Rs.50,000/-
32.	Govt. Millat Girls High School Gojra Distt. T.T. Singh	Purchase of Science Lab Equipment	Rs.50,000/-
<b>Total Amount</b>			<b>1,935,000</b>



**ANNEXURE-XI****List of NSLP Approved Projects in 2011-2012**

Sr. No	Project No.	Name and Designation of P.I	Project Title
1.	NSLP/P-UAAR (147)	Dr. Azeem Khalid, Associate Professor, Department of Environmental Sciences, PMAS Arid Agriculture University, Rawalpindi	Biotreatment of Industrially Discharged Azo Dye Contaminants Using Bioaugmentation
2.	NSLP/P-LPRI (151)	Dr. Waseem Shahzad, Livestock Production Research Institute, Bahadurabad, Okara	Sero-Prevalence and Molecular Diagnosis of Caprine Mycoplasmosis in Different Districts of Punjab
3.	NSLP/KP-NIFA (178)	Dr. Khanzadi Fatima Khattak, Senior Scientist, Nuclear Institute for Food & Agriculture, Tarnab, Peshawar	Development of Innovative Nutraceuticals Products from Indigenous Herbal Ingredients for Improving Socio-Economic Status of the Communities
4.	NSLP/P-FCCU (179)	Dr. Dildar Ahmad, Associate Professor, Department of Chemistry, Forman Christian College University, Ferozpur Road, Lahore.	Phytochemical and Biotechnological Studies on Antioxidant and Antimicrobial compounds in <i>Lagenaria siceraria</i> (Molina) Standl
5.	NSLP/P-PU (196)	Prof. Dr. Saeed Nagra, Professor, Institute of Chemistry, University of the Punjab, Lahore	Development of Gluten Free Flour from Indigenous Sources and its Biological Evaluation on Celic Patients
6.	NSLP/S-SAU (142)	Dr. Zaheeruddin Mirani, Associate Professor, Department of Agricultural Extension Education & Short Courses, Sindh Agriculture University, Tandojam.	Study of the Long Term Impact of Farmer's Field School for Cotton Regarding Integrated Pest Management Practices in Sindh & Punjab Provinces of Pakistan
7.	NSLP/P-NIAB (149)	Dr. Zia-ul-Qamar, Senior Scientist, Nuclear Institute for Agriculture and Biology, Faisalabad.	Improvement of Low Phytate Basmati Rice

8.	NSLP/P-NIAB (164)	Dr. M. Yussouf Saleem, Principal Scientist, Nuclear Institute for Agriculture and Biology, Faisalabad	Development of High Yielding and Disease Resistant Hybrids of Tomato
9.	NSLP/KP-AU (161)	Dr. Muhammad Sayyar Khan, Assistant Professor, Institute of Biotechnology & Genetic Engineering, KP Agricultural University	Production of Genetically Engineered Oilseed rape for Enhanced disease Resistance
10.	NSLP/P-AU (175)	Prof. Dr. Muhammad Younas, Chairman, Department of Livestock Management, University of Agriculture, Faisalabad	Physical Forms of Feed & Feeding Regimes as a Measure to Combat the Environmental Stress and its Effect on Growth, Performance and Meat Quality in Goats
11.	NSLP/P-AU (185)	Dr. Masood Akhtar, Associate Professor, Department of Parasitology University of Agriculture, Faisalabad.,	Evaluation of Some Cereal Derived Polysaccharides and Natural Biological Response Modifiers and their Therapeutic Efficacy Against Coccidiosis in Chicken
12.	NSLP/P-FCCU (186)	Dr. Khalid Zamir Rasib, Associate Professor, Department of Biological Sciences, FC College University, Lahore	Subterranean Termite Management through Baiting Technology without Environmental Contamination
13.	NSLP/S-PARC (187)	Dr. Aly Khan, Director, Crop Disease Research Institute, PARC, University of Karachi, Karachi.	Occurrence and Control of Nematodes Associated with Fruit Nurseries in Baluchistan
14.	NSLP/P-PCSIR (195)	Dr. Asma Saeed, Senior Scientific Officer, PCSIR Laboratory Complex, Ferozpur Road, Lahore	Biosynthetic Pathway and the Appearance of Anthocynins in small Tropical Fruits of Nutraceutical Significance Grown in Pakistan
15.	NSLP/KP-NIFA (202)	Mr. Iftikhar Ali, Principal Scientist, Nuclear Institute for Food & Agriculture, Tarnab, Peshawar	Development of locally adapted canola ( <i>Brassica napus</i> L.) F1 hybrid using induced mutations and double haploidy techniques

16.	NSLP/C-NARC (213)	Dr. S. Murtaza Hasan Andrabi, Senior Scientific Officer, Animal Sciences Institute, National Agricultural Research Centre, Islamabad	Investigation on Fertility- Related Biomarkers in Buffalo Semen to Reduce Male Factor Loss (MFLs)
17.	NSLP/C-QU (77)	Dr. Tariq Mahmood, Assistant Professor, Department of Plant Sciences, Quaid-i-Azam University, Islamabad	In Vivo Evaluation of Anti Sense Poly Phenol Oxidase Gene Construct Under the Control of a Wound Inducible Promoter
18.	NSLP/P-AU (167)	Mr. Shahid-ur-Rehman, Lecturer, Department of Poultry Science, University of Agriculture, Faisalabad	Development of Information Management System for Commercial Broiler and Layer Farm Data.
19.	NSLP/P-NIAB (155)	Dr. Muhammad Ashraf, Principal Scientist, Nuclear Institute for Agriculture & Biology, Faisalabad	Isolation, Characterization & Bioremediation Potential of the EPS-Producing Biofilm Bacteria from Brackish & Polluted Irrigation Waters
20.	NSLP/KP-NIFA (203)	Dr. Azhar Rashid, Senior Scientist Nuclear Institute for Food & Agriculture, Peshawar	Development & Validation of Technologies for Pesticide Residue Management in Fruit and Vegetable Produce

**Details of Monitoring and Evaluation of NSLP On-Going Projects in 2011-12****a. Semi Annual Reports**

Sr. No.	Project No.	Project Title
1.	NSLP/C-CIIT (51)	Wheat Improvement by the use of Targeted Genomic Approaches
2.	NSLP/P-UAF (89)	Comparative evaluation of single phosphate and di calcium phosphate in cows and buffaloes (i) effect on production of health (ii) Treatment of phosphorus associated clinical disorders
3.	NSLP/C-CIIT (141)	Biological Control of Blast & Bakanae Diseases of Rice by Using Improved Formulation of Native Bio-antagonists
4.	NSLP/KP- NIFA (128)	Breeding for Bruchids resistance in Mung bean ( <i>Vigna radiate L</i> Wlczek)
5.	NSLP/KP- NIFA (160)	Improvement of Stevia ( <i>Stevia rebaudiana Bertoni</i> ) through Induced Mutations and in Vitro Somaclonal Variations
6.	NSLP/P-AU(120)	Studies on the Effect of Estrogen and Progesteron Along With Insulin in <i>In Vitro</i> Gonadotrophin Secretions from Buffalo Adenohypophysis
7.	NSLP/KP- NIFA (171)	Integrated Management of Peach Flat-Headed Borer, <i>Sphenoptera dadkhani</i> (Oben.) Damaging Trees of Stone Fruit Orchards
8.	NSLP/S-KU (134)	AM Fungi as Potential Biocontrol Agent for Crop Improvement and Bioprotectant Against Root-Knot Nematodes
9.	NSLP/P-AU (109)	Budgeting Dietary Protein and Carbohydrate Fractions: a Practical Approach to Escalate Rumen Dynamics for Maximizing Productive Potential of Dairy <i>beetal</i> Goat
10.	NSLP/S-KU (140)	Assessment of Groundwater Quality and Soil Salinity in Parts of Thatta District, Sindh: Impact of Recent Floods on Agricultural Productivity and Options to Manage Salinity in Irrigated Lands



11.	NSLP/P-NIBGE (19)	Exploration of Cotton Germplasm Potential Against Drought Stress Using Genomic Approaches
12.	NSLP/P-PU (53)	Natural compounds from allelopathic Trees as Antifungal Agents against <i>Ascochyta rabiei</i> (PASS)
13.	NSLP/S-SAU (40)	Assessment of Pesticide Residues form Selected Vegetables through Traditional Processing
14.	NSLP/KP-NIFA (82)	Development of Package of Technology for Poultry Feed Irradiation in Pakistan
15.	NSLP/P-FCCU (121)	Increasing Phosphorus use Efficiency in Wheat Through Genetic Engineering
16.	NSLP/P-UAAR (74)	Pre and Post-harvest Treatment of Food Grade Chemicals to Improve Peach Fruit Quality and Shelf-Life
17.	NSLP/P-AU (78)	Escalating the Feed Value of Wheat Straw through Ensiling with Rumen Digestion as an Inoculant in Ruminant Animals
18.	NSLP/C-CIIT (79)	Field Evaluation of Biopesticides/Bio-inoculants for Red Rot ( <i>Colletotrichum falcatum</i> Went) Suppression & Enhanced Sugarcane Production
19.	NSLP/P-UVAS (68)	Cytogenetic Screening of Buffalo Bulls & Replacement Heifers for Genetic Improvement in Punjab
20.	NSLP/S-KU (65)	Application of Biopesticides Entomopathogenic Nematodes in Vegetable Fields Affected with Root Knot Nematodes
21.	NSLP/S-SAU (64)	Detection of Antibiotic Residues form Milk Meat and Eggs
22.	NSLP/F-AU(25)	Quantification of Economic Gain from Chickpea Crop Sown on Irrigated Fields in Southern NWFP & Its Implication for Agricultural Extension

**b: First Annual Reports**

Sr. No.	Project No.	Project Title
23.	NSLP/S-KU (65)	Application of Biopesticides Entomopathogenic Nematodes in Vegetable Fields Affected with Root Knot Nematodes
24.	NSLP/C-CIIT (79)	Field Evaluation of Biopesticides/Bio-inoculants for Red Rot ( <i>Colletotrichum falcatum</i> Went) Suppression & Enhanced Sugarcane Production
25.	NSLP/P-AU (78)	Escalating the Feed Value of Wheat Straw through Ensiling with Rumen Digesta as an Inoculant in Ruminant Animals
26.	NSLP/P-FCCU (121)	Increasing Phosphorus use Efficiency in Wheat Through Genetic Engineering
27.	NSLP/P-UAAR (74)	Pre and Post-harvest Treatment of Food Grade Chemicals to Improve Peach Fruit Quality and Shelf-Life
28.	NSLP/KP-NIFA (82)	Development of Package of Technology for Poultry Feed Irradiation in Pakistan
29.	NSLP/KP-NIFA (76)	Development of Slow Acting Toxicant Baits for Elimination of Underground Colonies of Crop & Building Termites
30.	NSLP/P-AU (89)	Comparative evaluation of single phosphate and di calcium phosphate in cows and buffaloes (i) effect on production of health (ii) Treatment of phosphorus associated clinical disorders.
31.	NSLP/C-CIIT (51)	Wheat Improvement by the use of Targeted Genomic Approaches
32.	NSLP/KP-NIFA (128)	Breeding for Bruchids resistance in Mung bean ( <i>Vigna radiate</i> L Wlczek)
33.	NSLP/C-CIIT (141)	Biological Control of Blast & Bakanae Diseases of Rice by Using Improved Formulation of Native Bio-antagonists

**c. Second Annual Reports**

<b>Sr. No.</b>	<b>Project No.</b>	<b>Project Title</b>
34.	NSLP/F-AU (25)	Quantification of Economic Gain from Chickpea Crop Sown on Irrigated Fields in Southern NWFP & Its Implication for Agricultural Extension
35.	NSLP/S-SAU (64)	Detection of Antibiotic Residues form Milk Meat and Eggs
36.	NSLP/P-NIBGE (19)	Exploration of Cotton Germplasm Potential Against Drought Stress Using Genomic Approaches
37.	NSLP/S-SAU (40)	Assessment of Pesticide Residues form Selected Vegetables through Traditional Processing
38.	NSLP/P-PU (53)	Natural compounds from allelopathic Trees as Antifungal Agents against <i>Ascochyta rabiei</i> (PASS)

**d. Final Reports**

<b>Sr. No.</b>	<b>Project No.</b>	<b>Project Title</b>
39.	NSLP/S-BARI (04)	Production of Germplasm and Breeding Material of Wheat for Drought and Heat Tolerance
40.	NSLP/P-UVAS (47)	Evaluating milk performance of local and exotic cattle breeds through SNP detection
41.	NSLP/P-UAAR(35)	Identification of Chemically Defined Extenders for Cryopreservation of Buffalo Bull Spermatozoa
42.	NSLP/F-AU(25)	Quantification of Economic Gain from Chickpea Crop Sown on Irrigated Fields in Southern NWFP & Its Implication for Agricultural Extension

**ANNEXURE-XIII**

**List of Publications under NSLP Projects during 2011-12**

Sr. No.	Project No.	Publications
01.	NSLP/S-PARC (01)	<ol style="list-style-type: none"><li>1. Khan, A., Tareen, J. K, Bilqees, F.M. and Khatton N. 2011. Histopathlogy of pomegranate roots infected with root knot nematodes, <i>meliodogyne incognita</i> (Kofoid and White 1919) Chitwood 1949). Int. J. Biol. Biotech.. 8(3):363-366.</li><li>2. Khan, A., Shaukat, S.S. and Sayed, M., 2011. Control of nematodes associated with Almond (<i>Prunus amygdalus Batsh</i>) using oil cakes in Balochistan. Pak. J. Nematol., 29 (2): 171-177.</li><li>3. Khan, A., Shaukat, S.S. and Sayed, M., 2011. Management of Plant nematodes associated with pomegranate (<i>Punica granatum</i> L.) using oil cakes in Balochistan, Pakistan. Indian. J. Nematol., 41 (1): 1-3.</li></ol>
02.	NSLP/P-UAAR (35)	<ol style="list-style-type: none"><li>1. Akhter. S., M. S. Ansari, S. M. H. Andrabi, B. A. Rakha, N. Ullah, M. Khalid. 2011. Soya-lecithin in extender improves the freezability and fertility of buffalo (<i>Bubalus bubalis</i>) bull spermatozoa. Reproduction in Domestic Animals DOI, 47(4):88-92</li><li>2. Akhter, S., M. S. Ansari, B. A. Rakha, S. M. H. Andrabi, N. Ullah and M. Khalid. 2011. Effect of low density lipoprotein on freezability and fertility buffalo (<i>Bubalus bubalis</i>) bull semen. Theriogenology, 76: 759-764. [IF=2.045]</li><li>3. Akhter, S., M. S. Ansari , B. A. Rakha, N. Ullah, S. M. H. Andrabi, and M. Khalid. 2011. <i>In vitro</i> evaluation of liquid storage buffalo semen at 5°C diluted in soya lecithin based extender (Bioxcell<sup>®</sup>), <i>tris</i>-citric egg yolk, skim milk and egg yolk-citrate extenders. Reproduction in Domestic Animals, 46: 25-49. [IF=1.606]</li></ol>