SCIENTIFIC AND TECHNOLOGICAL RESEARCH DIVISION (S & TR DIVISION) OF MINISTRY OF SCIENCE AND TECHNOLOGY ISLAMABAD

The Scientific and Technological Research Division was established in 1964 for (i) coordination and implementation of national science and technology policy; (ii) promotion and coordination of research and utilization of the results of research; (iii) development, production and utilization of nuclear energy; and (iv) coordination of utilization of scientific and technological manpower. The Division was administratively responsible for National Science Council, the Council of Scientific and Industrial Research, the Atomic Energy Commission and the Space and Upper Atmospheric Research Committee.

The Ministry of Science and Technology (MoST) has been functioning since 1972. It is the national focal point and enabling arm of Government of Pakistan for planning, coordinating and directing efforts; to initiate and launch scientific and technological programs and projects as per national agenda for sound and sustainable S & TR base for the socio-economic development, to achieve the vision for a better Pakistan, in terms of the mandate contained in Schedule-II of the Federal Government Rules of Business 1973.

From the areas of industrial development to renewable energy and rural development, the Ministry suggests technological development for higher growth-rates and to improve standards of living. Its principal focus is on building Pakistan's technological competence in the 21st century as we enter new markets, developing a larger pool of human resources to reverse brain drain, and for integrating the existing technological infrastructure for strengthening of technology institutions, effective governance of S & TR and enhancing the capacity of indigenous innovation systems.

The Division is headed by a Secretary; its establishment has a sanctioned strength of *176* personnel and 17 on development side. The work is divided amongst Administration & Finance Wings and five technical wings; namely, (i) Policy & Coordination, (ii) the Planning & Development, (iii) the Technology, (iv) the International Liaison, and (v) the Electronics Wing. Efforts to consolidate achievements in the priority areas included: Human-Resource Development; Transfer of Technology from R & D Institutions and Universities to Industry; Food & Agriculture; Analytical Centers for Industrial Analysis, Industrialization, Health, Electronics, Ocean Resources, New Materials, Biotechnology, Textiles, and Pharmaceuticals.

The Division’s programmes are mainly implemented by 16 institutions / organization listed in the Index S & T/R & D and other organizations placed under its responsibility. S & T related developmental projects of organizations under other Ministries / Divisions are also financed through this Division. For 2010-11, the Ministry was provided a budget of Rs. 925,109.000 Million, which includes revised allocation of Rs. 619,300.000 as development and Rs. 305,809.000 as non-development budget.

Initially the Division was established as part of Ministry of Education in February 1960. In February 1972, the S & T Division was granted its ministerial status to undertake multifarious functions, as depicted in 28 of Schedule-II of the Federal Rules of Business (RoB) 1973, and as modified from time to time. These are:

Article 28 of Schedule - II

1. Establishment of science cities.

2. Establishment of institutes and laboratories for research and development in the scientific and technological fields.

3. Establishment of science universities as specifically assigned by the Federal Government.

4. Planning, coordination, promotion and development of science and technology monitoring and evaluation of research and development works, including scrutiny of development projects and coordination of development programmes in the fields.

5. Promotion of applied research and utilization of results of research in the scientific and technological fields, carried out at home and abroad.

6. Guidance to the research institutions in the Federation, as well as the provinces in the fields of applied scientific and technological research.

7. Coordination of utilization of manpower for scientific and technological research.

8. Promotion and development of industrial technology.

9. Promotion of scientific and technological contacts and liaison nationally and internationally, including dealings and agreements with other countries and international organizations.

10. Initiate promotional measures for establishment of venture-capital companies for technological development and growth.

11. Support to NGOs concerned with development of science and technology.

12. Promotion of Metrology Standards, Testing and Quality-Assurance System.

13. National Commission for Science and Technology.

14. Pakistan Council of Scientific and Industrial Research.

15. Pakistan Council of Research in Water Resources.

16. Drainage and Reclamation Institute of Pakistan.

17. Council for Works and Housing Research.

18. National Building Research Institute.

19. Pakistan Council of Appropriate Technology.

20. Centre for Applied Molecular Biology.

21. Pakistan Science Foundation.

22. National Institute of Electronics.

23. Pakistan Council for Science and Technology.

24. National Institute of Oceanography.

25. National Institute of Power.

26. National Institute of Silicon Technology.

27. Scientific and Technological Development Corporation.

28. National University of Science and Technology.

29. Pakistan Standards Institution.

30. Prescription of standards and measures for quality control of manufactured goods.

31. Establishment of standards of weights and measures.

32. Development, deployment and demonstration of renewable sources of energy.

33. Development, Deployment and Demonstration of Renewable Sources of Energy.

34. Pakistan National Accreditation Council (PNAC).

35. Pakistan Council of Renewable Energy Technologies (PCRET)

36. COMSATS Institute of Information Technology.

36. Pakistan Engineering Council (PEC).

To put in effect the above mentioned mandate, the Ministry is assigned the following listed organizations. These include multi-disciplinary research councils, National University of Sciences & Technology (NUST), Pakistan Science Foundation (PSF), Pakistan Standards & Quality Control Authority (PSQCA), two mono-discipline institutes and an applied research center in molecular biology. In addition to a S & T Development Marketing Company; these were created by Statutes, Executive Resolutions, MoUs or registered under Companies Ordinance issued from time to time:-

Institution		**Established in**	**No. of Employees as on 1.07.2010**	**Legal Basis**
1.	Pakistan Council of Scientific & Industrial Research (PCSIR)	1953	2,590	Act XXX of 1973
2.	Pakistan Council for Science &Technology (PCST)	1961	66	Resolution 1987. Declared Civil Servant in the light of Apex Body's decision
3.	Pakistan Council of Research in Water Resources (PCRWR)	1970	343	Act No. 1 of 2007
4.	Council for Works and Housing Research (CWHR)	1972	103	Resolution 1998. Declared Civil Servant in the light of Apex Body's decision
5.	Pakistan Science Foundation (PSF) PASTIC PMNH	1973	169 139 121	Act III of 1973
6.	National Institute of Electronics (NIE)	1979	144	Ordinance III of 1979

7.	National Institute of Oceanography (NIO)	1981	111	Act III of 2007
8.	Centre for Applied Molecular Biology (CAMB)	1987	47	Resolution Declared Civil Servant in the light of Apex body's decision
9.	STEDEC Technology Commercialization Corporation of Pakistan	1987	22	Private Ltd. Company Registered under Companies' Ordinance 1984.
10.	National University of Science & Technology (NUST)	1991	3,039	Act XX of 1997
11.	Pakistan Standards and Quality Control Authority (PSQCA)	1996	274	Act. VI of 1996.
12.	Pakistan National Accreditation Council (PNAC)	1998	37	Cabinet Decision Notification as Apex Body. Declared Civil Servants in the light of Apex body's decision
13.	Pakistan Council of Renewable Energy Technologies (PCRET)	2001	145	Resolution: Declared Civil Servants in the light of Apex body's decision
14.	COMSATS Institute of Information Technology(CIIT)	2000	3,094	Ordinance No. xxxviii of 2000
15.	Pakistan Engineering Council (PEC)	1976	113	Act 1975
16.	Pakistan Technology Board (PTB)	2000	3	Notification of 2000

The Organization of Islamic Conference (OIC Standing Committee on Scientific and Technological Cooperation) (COMSTECH) is a specialized Ministerial Standing Committee established by the Islamic Summit. The President of Islamic Republic of Pakistan is its Chairman. COMSTECH General Assembly is most important OIC Forum on Science & Technology that meets after every 2 years to deliberate on Science & Technology issues facing the Islamic world and looks towards Pakistan for its leadership in Science & Technology. At present 57 Countries/delegates are members of OIC.

During the year under review, COMSATS Institute of Information Technology (CIIT) has faculty strength of 1,835 and programme offering of 55. Total graduates produced so far are 12,284.

Pakistan Engineering Council is an autonomous body established in 1976 under Act of Parliament. It is regulatory body and regulating the engineering educations in the country. The Council is meeting its expenditure through its own resources, and a nominal grant is being sanctioned by the Govt. also.

Pakistan Technology Board (PTB) was established in September 2000 initially for a period of three years. In December 2004 M.S. Wing recommended PTB as an autonomous entity of Ministry of Science & Technology also recommended a management review after three years in order to ascertain its performance for continuity. The Board was placed under PCST.

The budgetary allocations for the S & T and R & D organizations, and investments effected through PSDP for 2010-11.

The Ministry's Secretariat has a sanctioned strength of 176 personnel and 17 on development side. Its work is divided into five wings: namely, (i) Technology (ii) Electronics, (iii) Policy & Coordination (P & C), (iv) Planning and Development (P & D) (v) International Liaison (IL), which are professionally staffed and headed by Joint Advisers. Administration & Finance Wings are headed by a Joint Secretary (Admn) and Chief Finance & Accounts Officer to provide support services.

Federal Secretaries, Ministry of Science & Technology

S. No.	Name	From	To
1.	Dr. I. H. Usmani	Feb.1972	30.08.1972
2.	Mr. Manzoor Ahmed	31.08.1972	22.08.1973
3.	Dr. A. Q. K. Afghan	23.08.1973	30.03.1976
4.	Sheikh Manzoor Ahmed	31.03.1976	28.02.1978
5.	Prof. Dr. Nisar Ahmad	01.03.1978	30.07.1979
6.	Maj. Gen. Shafiq Ahmed	30.07.1979	21.02.1980
7.	Sheikh Manzoor Ahmed	22.02.1980	18.08.1982
8.	Mr. M. Masihuddin	19.08.1982	18.01.1989
9.	Mr. Tariq Mustafa	18.01.1989	18.12.1990
10.	Mr. Pervez Ahmed Butt	27.02.1991	27.11.1994
11.	Dr. S.M. Qureshi	27.11.1994	02.05.1996
12.	Lt. Gen. (R) Javed Ashraf	05.05.1995	04.05.1998
13.	Mr. Javed Masud	05.05.1998	30.04.2001
14.	Mr. Ashfaq Mahmood, (Additional charge)	30.04.2001	09.09.2001
15.	Mr. Shahzad Hassan Pervez	10.09.2001	26.05.2004
16.	Kh. Zaheer Ahmed	01.07.2004	26.11.2005
17.	Mr. Farrukh Qayyum (Secretary, Information Technology (Additional Charge of Secretary (MoST)	27.11.2005	05.04.2006
18.	Mr. Parvez Butt	06.04.2006	05.04.2008
19.	Mr. Sharif Ahmed	07.4.2008	11.10.2008
20.	Mr. Saifullah Khan Sherwanee Additional Secretary Incharge	13.10.2008	17.01.2009
21.	Mr. Muhammad Kashif Murtaza	17.01.2009	10.12.2009
22.	Mr. K. B. Rind	11.12.2009	04.10.2010
23.	Mr. Irfan Nadeem	04.10.2010	14.07.2011
24.	Mr. Akhlaq Ahmad Tarar	16.07.2011	To date

Technology Wing

Technology Wing has been entrusted to initiate and monitor various programmes for technology development and industrialization in the country. This wing also acts as liaison between various ministries and national and international bodies for the development of technology based projects. The wing is headed by a Joint Technological Adviser, assisted by one Deputy Technological Adviser and two Assistant Technological Advisers.

2. **Objectives & Functions**

- Promotion and development of industrial technology
- Promotion of Metrology, Standards, Testing and Quality Assurance System.
- Establishment of accreditation system in the country.
- Focal point for WTO affairs relating to science and technology.
- Establishment of Common Facility Centers to provide SMEs Training, Product Development, Consultancy and Quality improvement.
- Technical matters of PCSIR, PSQCA, PNAC, CWHR, and STEDEC.

3. Accomplishments/Achievements: During the year 2010-2011, the following activities were undertaken by Technology Wing:

(i) Strengthening of Metrology Standards Testing & Quality (MSTQ) Infrastructure.

With the establishment of WTO and its policies of trade liberalization, export is increasingly dependent on the supply of quality goods and services in the international market. Market access to the developed countries, which are the major trading partners of Pakistan, now require compliance to international standards and providing evidence of such compliance through internationally recognized conformity assessment systems. Under this WTO regime, the global trend is towards a free market with no economic trade barriers, allowing for free movement of goods and interchange of services. This requires the elimination of Technical Barriers to Trade (TBT) and Sanitary and Phyto-Sanitary measures (SPS). The TBT & SPS agreements of WTO specifically emphasize the need for harmonizing the national quality infrastructure including technical regulations, accreditation and standardization etc. to reduce Technical Barriers to Trade and ensure the supply of safe and quality products & services to export as well as in the local market.

Infrastructure of accreditation, certification, standardization and calibration is essential to facilitate export leading to maximize foreign exchange earnings by the sale of quality products/services in the international market assist regulators in controlling the sale of sub-standard products and services in the local market.

Following efforts have been made to strengthen the Metrology Standards Testing & Quality (MSTQ) infrastructure of Pakistan:

(a) Pakistan National Accreditation Council (PNAC):

After the successful peer evaluation by Asia Pacific Laboratory Accreditation Cooperation (APLAC) i.e. the regional representative of International Accreditation Forum (IAF) and also regional representative of International Lab Accreditation Cooperation (ILAC), now PNAC has started the accreditation of Medical Laboratories all over the Pakistan.

Previously the test results of PNAC accredited laboratories were not acceptable at international level because PNAC had not acquired MRA status (Mutual Recognition Agreement). Now PNAC is internationally recognized accreditation body and the accreditation of PNAC is being accepted all over the world. The foreign accreditation bodies, which charged about US $ 60,000 per year as compared to

only US $ 1,100 charged by PNAC. The test results of PNAC accredited labs are now internationally acceptable. This has eliminated the need of acquiring accreditation from foreign accreditation bodies. This would result in saving of huge foreign exchange as labs accreditation cost would be decreased by almost six times. In this way, Ministry of Science & Technology contributed / facilitated the exports of the country.

To enhance export potential of the country and to meet the requirements of international technical regulations, Pakistan National Accreditation Council (PNAC) has so far accredited various numbers of testing and callibration laboratories as per ISO 17025 and also accredited the certification bodies under quality management system (ISO 9000), environment management system (ISO 14000) to provide quality conscious culture in Pakistan. Now the focus of PNAC is to improve medical laboratories in Pakistan by implementing international standards ISO 15189.

The conference "Bridging the Gaps, Linking, Financing & Quality of Health Services" was arranged at Pearl Continental, Bhurbhan, Murree in collaboration with Ministry of Science & Technology, PNAC, Planning Commission & German International Cooperation (GIZ). These types of contributions play vital role in the society to promote the quality and health care issues.

(b) Pakistan Standards & Quality Control Authority (PSQCA):

Pakistan Standards and Quality Control Authority (PSQCA) established through an Act of Parliament (Act-VI of 1996) is providing one window services for standardization and quality control. This authority works through three integrated components namely:

- Standards Development Centre (SDC),
- Quality Control Centre (QCC) and
- Technical Services Centre (TSC).

PSQCA is a Standard Development Body and responsible for:

- Developing the standards on quality and dimensions.
- Preparation & promotion of general adoption of Pakistan Standards Specifications.
- Operation of Certification Marks Scheme & coordination of the efforts of manufacturers and Consumers for the improvement of standardization and provide assistance in the manufacture of quality products.

PSQCA is involved in testing and assessment of industrial raw materials & finished products to establish their quality, grade and composition conforming to national & international standard specifications in various fields like chemical products and formulations, textiles, food items, building materials, mechanical engineering, electrical and electronic goods and appliances etc and provision of consultancy services to various industrial units so as to achieve improvement of quality of their products.

PSQCA is involved in the quality culture and development of standards in the country and presently up to 26000 standards have been made and 78 items including 37 food related items have also been included in the list of compulsory certification marks scheme to ensure the quality and health of the public.

Global Halal Food market has grown over the past few years globally and covering the wide array of food and non-food products including pharmaceuticals, cosmetics etc. Halal certified goods / services chain will support local and international market to export all types of food stuffs in the world. Government of Pakistan is also playing vital role to enhance the halal food industry and has announced 50% subsidy, enable exporters/producers to enhance the Halal food market.

In order to capture sizeable share of this market, the key requirement is the development / establishment of Halal Food Standards. In this regard, Pakistan Standards & Quality Control Authority (PSQCA) has developed the harmonized PS Halal Food Standards keeping into consideration the various aspects of Halal Food requirements in OIC and other countries of the world. These standards will definitely help the Pakistani entrepreneurs / exporters to penetrate into the Muslim market.
To strengthen the export capabilities and to facilitate the exporters to overcome Technical Barriers to Trade (TBT), Pakistan Standards & Quality Control Authority (PSQCA) has signed various Memorandums of Understandings (MoUs), Mutual Recognition Agreements (MRAs) with different international organizations for cooperation in the fields of Science & Technology, Standardization, Quality Assurance / Management, Product Certification and Exchange of Technical Information, Human Resources Development and Capacity Building. Some of the MoUs / MRAs which have been signed are as under:

- Islamic Republic of Pakistan & Kingdom of Saudi Arabia.
- PSQCA and Turkish Standards Institution (TSE).
- MoU signed between PSQCA and ASTM International USA.
- MoU signed between PSQCA and ANSI.
- MoU signed between PSQCA and DIN, Germany,
- MoU signed between PSQCA and Bangladesh Standards & Testing Institution (BSTI).
- MoU between PSQCA and Yeman Authority of Specification, Standardization & Quality Control.
- The MoUs / MRAs with the countries like Iran, Oman, UAE, Jordan, Mauritius, Italy, Malaysia etc. are under process.

PSQCA has also launched Mobile Testing Labs which may test the products on the spot at the factories, ports, etc.

Major activities carried out by PSQCA during the period are as under:

- World Standard Day was observed on October 14, 2010.
- World Consumer Day was celebrated on 15th March, 2011.
- Proposed amendments in PSQCA Act, 1996.
- Review of Marking Fee Draft Notification.
- Amendments in Pakistan Conformity Assessment Rules: 2010
- Amendments in Conformity Assessment Rules: 2008.
- Issued new S.R.O for addition of Electric Fans in existing list of Compulsory Certification Scheme.
- Matters related to TBT, National Enquiry Point.

(c) National physical and standards laboratory (NPSL):

National Physical and Standards Laboratory (NPSL), i.e. National Metrology Institute, a unit of PCSIR, has been upgraded with the assistance of European Union (EU) and UNIDO to provide calibration services to local industry. It has performed calibration of various types of instruments in compliance to ISO -17025.

The main objective of NPSL is to maintain the primary standards of measurement and materials on internationally recognized level. NPSL is also the member of **Bureau of International Weights & Measures (BIPM)** and maintaining the national standards for the measurement and materials acts as the focal point for the calibration / standardization and testing needs of country. NPSL is the only certified link to the International Measurement Systems.

(ii) Trade Related Technical Assistance (TRTA):

To improve Pakistan's infrastructure on standards and quality control by focusing on key export sectors (e.g. fisheries, textile and agro-food processing) European Union through UNIDO has imparted technical assistance to MoST and its organizations under a programme Trade Relation Technical Assistance (Phase-I). The purpose of the programme was to support the economic integration of Pakistan into the global and regional economy by increasing exports and enhancing the environment for international trade.

In TRTA Phase-I, the institutions PSQCA, PNAC, PCSIR, NPSL & PCRWR operating under the Ministry of Science & Technology were key beneficiaries of the TRTA Programme (Phase-I), which were being assisted to establish conformity assessment and quality improvement methods. To meet the requirements of international technical regulations. 19 laboratories have been accredited as per ISO-17025 in different discipline like Microbiology, Chemical, Textile, Leather, and Electrical.

TRTA Phase-II has been launched which will further strengthen and build capacity of these institutions and will bring them in compliance with international standards. In TRTA-II, the European Commission is providing 9, 545, 000 and United Nations Industrial Development Organization (UNIDO) is also contributing 500,000 for the programme.

Objectives of TRTA-II

- To address the challenges of TBT / SPS requirements of WTO agreements

- To increase the competitiveness of Pakistan's export industry by strengthening the institutional capacity for Metrology, Standardization, Testing & Quality (MSTQ) through this Ministry's Organizations such as, PCSIR, PSQCA, PNAC, NPSL, PCRWR etc.

(iii) R & D Industrial Linkages:

PCSIR is one of the largest R & D Organization in the country and in accordance with the policy of the present Government the organization has realigned itself to disseminate the benefit of the R & D to all the stakeholders, with special emphasis on providing vast effective, solution to the industrial Sectors particularly SMEs. The upgraded testing and analytical facilities in PCSIR labs, at Karachi, Lahore, Peshawar, Quetta and Islamabad are catering to the private sector particularly for export, thousands of clients in the private sector were testing/calibration services during this period.

PCSIR has initiated contacts with the Chambers of Commerce and Trade Industry of Rawalpindi, Lahore, Sialkot and Gujarat. A contact group of PCSIR with the private sector Industrialist of Khyber Pakhoonkhwa has also been established.

(d) Council for Works & Housing Research (CWHR):

CWHR, an R & D organization under the Ministry of Science & Technology. This Council is engaged in research and development activities in the field of civil engineering and also extends technical services to public and private organizations at nominal costs. The CWHR is well equipped with facilities and

expertise for conducting condition surveys, quality assurance testing and Non-Destructive Testing (NDT) of concrete structures viz roads, highways, pavements, including allied structures i.e. bridges, culverts etc.

CWHR has recently initiated the project "Exploration and Exploitation of lightweight aggregate along the coast of Baluchistan. A portfolio of proposals was also prepared for the rehabilitation and reconstruction of flood effected areas.

- **Development of Low Cost Housing:**

CWHR, in line with the policy of the present Government, is working to identify affordable design/product for housing and shelters. These include the utilization of ferro-cement technology which is environmental friendly as it could reduce use of timber. The council has also established the non-destructive testing facilities for research assessment and formulation of concrete structure. The non-destructive testing results would assure clients and consultants about the safety of the structure and their conformity with the design.

- **Involvement of CWHR in the Rehabilitation Flood Affected Areas:**

CWHR has shown active involvement in the rehabilitation of flood affected areas and have developed different R & D products which are used in construction of low cost houses and these products also helped in the flood affected areas where the pre-cast products were used in the construction such as:

i. Soil Stabilized Blocks,

ii. Burnt clay Tiles for roofing system, Lightweight Tiles

iii. Ferro-cement elements, hollow blocks.

iv. Light weight aggregates & etc.

MoU has also been signed by CWHR with Indus Earth Trust & Institute of Architecture Pakistan for the construction of low cost housing in the flood affected areas by using R & D products.

(e) Pakistan Council of Scientific & Industrial Research (PCSIR):

Pakistan Council of Scientific & Industrial Research (PCSIR) since its creation in 1953 is striving for contributing its share for the development of processes / technologies for industrial applications through exploitation of indigenous resources and facilities of scientific research, breeding base for innovation, characterization of local raw minerals/agro-based materials, facilities for technology development, value-addition of low quality products and grooming of the country's scientific manpower.

The broad-based activities of the **PCSIR** encompass almost the entire industrial sector in the country; for the industrial units in operation have their ground-work in science and technology in which the PCSIR is both prominent and all too visible an organization on the national plan. The PCSIR being the foremost industrial R & D organization is the largest producer of indigenous technologies in an organized fashion.

On the recommendations made by the Steering Committee on Science & Technology, PCSIR in collaboration with MoST, Coal and Energy Development Department, Government of Sindh, a meeting was held on 2nd July, 2011 at Karachi to review the status of Thar Coal Project / Coal Gasification. The meeting was attended by the various stakeholders both Public and Private Sector.

PCSIR also gave a presentation on the proposed project entitled "Design, Manufacturing & Commissioning of Pilot Plant for Conversion of Coal Gas into Diesel / Liquid Fuel" costing Rs. 989 million.

Activities:

- Quality Control Services to the Exporters
- Services to Government Departments and NGOs
- Help in Crisis Situations
- Environment and Pollution Control
- ISO - 9000/14000 Certifications
- Workshops, Seminars & Training Programmes
- Pre-Feasibility, Feasibility & Techno-Economic Studies
- Rural Support Technologies
- Major Fields Developed
- Evaluation of Locally Available Raw Materials
- Process and Product Development
- Investigative Analysis and Import substitution
- Analytical and Testing Services

PCSIR now has a nationwide network of five (5) multi-functional laboratories, five (5) Non-functional laboratories and seven (7) technical training institutes with Headquarters at Islamabad. It is equipped with a workforce of 2602 scientific /technical & administrative staff with the mission and devotion to serve the nation.

Main Areas of R & D

- Electrical /Electronics
- Solar Energy
- Building Materials
- Food Technology
- Rural technologies
- Leather Technology
- Textile Technology
- Glass & Ceramics
- Bio-Technology
- Pharmaceuticals
- Environmental Studies
- Herbal Medicines & cosmetics
- Minerals & Materials
- Metallurgy (including nanotechnology)
- Industrial Chemicals
- Metrology & Standards
- Fuel (Solid & Liquid)
- Pesticides & Herbicides
- Oil & Fats
- Colors & Dye

The Human Resources Development is also being executed / operated by PCSIR under the consultation of Technology Wing, MoST and offering/awarding the degrees / diplomas of 4-24 weeks and 3-4 year courses in mechanical, industrial, instruments technology etc.

(f) STEDEC Technology Commercialization Corporation of Pakistan:

Regular Activities:
STEDEC is a commercial marketing organization working under the administrative control of Ministry of Science & Technology and its major activity is to commercialize new products, processes and technologies.

Development Activities:
STEDEC is continuously involved in the process of identifying market based products such as, pesticides, insecticides, herbicides, nutrients (in-organic fertilizers). Recently, STEDEC identified some valuable market products namely:

- NPK-8-8-6 liquid (nutrients),
- Zincote (nutrients)
- ALKOLEX (Isoporopyl alcohol "IPA")
- Wash up solutions etc.

STEDEC manufactures and promoters indigenous/imported chemical based agro-chemical products at economical price to the general public and government department.

Training Agriculturists:
STEDEC manages training of farmers in collaboration with the dealers to create awareness regarding use of appropriate pesticides at various stages and also save farmers, money through use of proper and economic methods/equipments.

(iv) Improving Quality of Engineering Profession:
Pakistan Engineering Council (PEC) had been making efforts to improve the quality of engineering education in the country and enhance the career development of professional engineers.

PEC as per its mandate is pursuing professional development of engineers for the enhancement of technical knowledge, expertise and communication skills in their carrier leading towards international recognition and cross border opportunities. PEC has also achieved the landmark and become provisional member of Washington Accord (Qualification equivalent abroad) and Engineers Mobility Forum (cross border mobility of engineers).

PEC (under the provisions of PEC Act and CPD bye-laws 2008) has also announced / launched first Engineering Practice Examination (EPE) for professional engineers. All those engineers who are registered with PEC as Registered Engineers (RE) having professional experience of 5 years and acquired requisite CPD points (3.5 CPD points) are eligible for that; this is also the contribution of PEC towards the enhancement of professional capabilities of an engineer.

The PEC has also announced the elections for the Governing Body (2012-2014), which was advertised in different newspapers on 25th September, 2011. This is the first time in the history of PEC that the physical balloting is being conducted on the district level all over Pakistan.

(g) Pakistan Engineering Council (PEC):

PEC was established through an Act of Parliament in 1976 for the regulation of engineering profession. The council is a statutory regulatory body under the control of Ministry of Science & Technology. The Technology Wing deals with the technical matters of PEC such as:

- Formulation of Bye-laws for
  - Registration of Engineers and Consulting Engineers
  - Conduct and Practice of Consulting Engineers
  - Construction & Operations of Works.
  - Continuing Professional Development (CPD)
- Regulations for Engineering Education.
- Manual of Accreditation (Engineers)
- Manual of Accreditation (B-Tech).
- Standard Bidding Documents for Procurement of Engineering Goods, Works & Services.
  Code of Ethics & Conduct for Engineers.

Policy and Coordination Wing

P & C Wing is responsible for dealing with matters related to National Science & Technology Policy & Identifies areas for S & T research to respond requests in emerging technologies.

Objectives and Functions

- Planning, coordination, promotion and development of science and technology, scrutiny, monitoring, evaluation of research and development work and coordination of development programme.
- Establishment of S & T/R & D institutes and laboratories for research and development in the scientific and technological fields.
- Establishment of science universities as specifically assigned by the Federal Government.
- Coordination with Federal and Provincial Departments/Organizations and NGOs dealing with S & T.
- Coordination with Cabinet Division, Military Wing for holding meetings of Scientific Advisory Committee on Defence Planning (SACDP).
- P & C Wing deals with technical matters of the Pakistan Council of Research in Water Resources (PCRWR), the National Institute of Oceanography (NIO), Centre for Applied Molecular Biology (CAMB) and Pakistan Council of Science & Technology (PCST).
- Deals with various Awards/Medals.

Activities Performed during the Year under Report

- **Civil Awards for Scientists & Technologists – 2010**
  Fourteen nominations were received, all the nominees were recommended, Civil Awards were conferred on 02 nominees.
- **Civil Awards for Scientists & Technologists – 2011**
  Invited nominations from R & D Organizations of MoST. Fifteen nominations were received for consideration.
- **President's Medal for Technology – 2009**

Seventy three nominations were received and six were approved for award of the Medal. Investiture ceremony for the conferment of President's Medal for Technology is expected to be held in the year 2012.

- **President's Medal for Technology - 2010**
  Fifty six nominations were received. Out of which 22 nominees have been short listed for consideration.

- **President's Medal for Technology, 2011**
  Twenty seven nominations have been received and are in process for evaluation.

- **Science, Technology and Innovation Policy–2011**

The following time line efforts were made to finalize the draft Policy;

o August, 2010	o Revised Draft submitted by the Sub-Committee
o November, 2010	o Comments of the members of Review Committee solicited by MoST
o Feb. 2011	o In-house meeting to consider follow-up actions
o March, 2011	o March, 2011 – Up-dated and revised Draft-2 of S, T&I Policy – 2011.
o April, 2011	o April, 2011 – Stakeholders Conference to obtain comments on the draft policy.
o June, 2011	o Minister gave his final approval and the document was forwarded to the Prime Minister's Secretariat for seeking time from the PM for presentation.

- **Special Pay Scales for Staff of MoST and its R & D Organization.**
  Prime Minister very kindly approved the summary for the grant of Special Pay Scale for MoST and it's R & D Organizations subject to the consent of Finance Division.

- **Coordination with other Ministries.**
  Participated in 3rd, 4th and 5th meetings of the Project Steering Committees of National Environmental Information Management System (NEIMS), 3rd meeting of Project Steering Committees of Sustainable Land Management Project (SLMP) and Workshop of Socio-economic Scenarios for Climate Change Impact & Response Assessment (WOSES) of Ministry of Environment.

- **Technical Matters of PCRWR, PCST AND CAMB**
  Drainage and Reclamation Institute of Pakistan Tandojam of PCRWR was visited to monitor their following projects.

  - Sustainable Technologies for Efficient Water Management in Irrigated Areas for Southern Sindh

  - Combating Drought and Desertification in Thar Desert by Management of Water Resources.

- Steering Committee Meeting of Mass Awareness of Water Conservation and Development (MAWCD) project was attended.

- **Dealt with the following National Defence Committees/Sub Committees**
  - Scientific Advisory Committee on Defence Planning (SACDP)
  - National Camouflage and Concealment Committee on Defence Planning (NCCDP)

- Attended meeting of "Pakistan Madrasah Education Board-Information Regarding" on 15th April, 2011.

- Attended meetings of Travel Grants Committee of the Pakistan Science Foundation (PSF). Under the programme Government provides financial support to scientists/technologists for participation and presentation of their research findings in International Conferences. Request of 193 scientists were considered, out of which 92 cases were approved by the Committee in various meetings held during the year under report.

Planning and Development Cell

The development programmes of the Ministry of Science and Technology (MoST) are implemented through its 16 S & T/R & D Organizations dealing with research and development projects related to S & T in sectors/areas like energy renewable, health, sustainable development, exploration, exploitation and management of water resources, construction materials, new/advance material and many other sectors such as Information Technology, Low Cost Housing etc., marine sector for survey exploration, exploitation of coastal marine and environment, industrial research, biotechnology and electronics. Besides, funding its own Organizations, the Ministry provides funds for R & D related development projects of other Ministries / Organizations, such as Pakistan Atomic Energy Commission, NESCOM, Pakistan Medical Research Council, Hospitals and Medical Research Institutions, Private Sectors through STED programs. The Ministry also provides services to industrial sector regarding Metrology, Calibration, Accreditation, Standards and Quality Control in the light of WTO requirements.

Major thrust of development initiatives in Science and Technology sector remained on upgrading / replacement of the basic R & D infrastructure, restructuring of R & D organizations, meteorology standards & testing system (MSTQ), development of scientific and technological manpower in high technology fields, acquisition of cutting edge technologies, developing linkages amongst R & D organization, industry & universities, public-private partnership for R & D, using S & T co-operation on regional as well as international levels.

During the year under review, MoST Organizations like Pakistan Council of Scientific and Industrial Research (PCSIR), Pakistan Council of Research in Water Resources (PCRWR), Pakistan National Accreditation Council (PNAC), Pakistan Council of Renewable Energy Technologies (PCRET), National Institute of Oceanography (NIO), National Institute of Electronics (NIE), Centre for Applied Molecular Biology (CAMB) and Pakistan Standards and Quality Control Authority (PSQCA) provided financial support through development funds due to financial crunch the R & D Organizations were observed little slow. The review meetings were held and the projects those were on low priority were curtailed. Some major ongoing projects in S & T Sector were; Provision of Safe Drinking water, Industrial Linkage Program, Construction of Ministry of Science Building, Teachers and Researchers Overseas Scholarship Scheme (TROSS), Water Quality Monitoring Program, Production of Bio-energy Plant Biomass, BMR of PCSIR / NPSL, up gradation of pilot plants at major centre along-with establishing of Mechanical Workshops of PCSIR besides BMR Projects at Lahore, Karachi, Peshawar etc.

Development Activities: During the fiscal year 2010-11, an amount of Rs.1646.21 million was allocated, which was later revised as per Planning Commission instructions to rationalize the cost to Rs.619.300 million. Out of this, Rs.617.043 million were released and utilized. Fifteen Projects completed during the year under consideration. About Eleven new projects / PC-I forms were got peer

reviewed due to some financial constraints and instructions of Planning Commission. No meetings of DDWP were held during the said year on account of financial crunch.

Monitoring of Development Projects: Monitoring and Evaluation of PSDP projects were carried out by the respective wings alongwith representation of P & D wing, during period under report. The overall progress/assessment regarding monitored projects is partially satisfactory due to less release of funds. The system of internal monitoring and audit within executing agencies has also been initiated to overcome all retardants affecting progress and implementation of development projects. This is in line with the endeavor of MoST for effective and efficient utilization of development funds.

International Liaison Wing

The International Liaison (IL) Wing in the Ministry of Science and Technology coordinates with S & T organizations at home and abroad, to promote International Cooperation in the fields of Science & Technology at bilateral as well as at multilateral levels, with main objectives to: i) enable Pakistani researchers to get access to technologies developed elsewhere in the world, ii) mobilize S & T capacity of national institutions to develop human resource for mutual benefits, and iii) sharing of resources in those areas of science and technology where there is an excellence either at home or abroad.

During the period 2010-11, the International Liaison Wing had been undertaking coordination of the following activities within the frameworks of bilateral agreements with friendly countries and through liaison with international and regional organizations dealing with Science and Technology:-

Bilateral Cooperation

Peoples Republic of China: Under the framework of Agreement on Scientific and Technical Cooperation between the Islamic Republic of Pakistan and the Peoples Republic of China signed in May 1976, sixteen (16) Protocols each containing Items on exchanges in S & T have so far been implemented.

The Pakistan-China Joint Working Group (JWP) on S & T held its preparatory meetings earlier in October 2009. As a follow-up of the decisions of the JWG, preparations remained underway during the year for signing of the Protocol of 17th Session through provision of proposals by S & T organizations in Pakistan and China. The JWG had identified a number of Joint projects and short term activities in the priority areas, for which detailed project proposals on the prescribed format were developed by S & T organizations in Pakistan jointly with counterpart Chinese organizations for discussions and conclusion during the forthcoming 17th Session of the Pak-China Joint Committee expected in the 2nd half of 2011. Signing of 17th protocol during 2011 will mark the significance of 60th anniversary of Pak-China diplomatic relations.

The IL Wing also prepared and provided briefs on S & T cooperation between Pakistan and China for talking points for the VVIP visits and meetings during the year.

Republic of Argentina: The Science and Technology cooperation between Pakistan and Argentina was pursued pro-actively after the visit and meetings of the Argentine Foreign Secretary in Islamabad during March 2010. The Argentine Foreign Secretary also held meeting with the Secretary, Ministry of Science and Technology to pursue bilateral cooperation in S & T fields. As agreed by the two sides, the 2nd meeting of the Pak-Argentine Joint Committee on S & T was pursued, and it was held from 16-18th of May 2011 at Buenos Aires on developing a common agenda for the meeting. The Pakistan's 5-member delegation in the Joint Committee was led by Mir Changez Khan Jamali, Federal Minister for Science &Technology. At the conclusion, a Progarmme of Cooperation was agreed by the Joint Committee, and an MoU on cooperation between PCSIR and Argentine Institute of Industrial Technology (INTI) was also signed. The Pakistan delegation to Argentina also had opportunity of briefing sessions and see-around various laboratires / R & D facilities at some of the leading Argentine institutions in the fields of Agriculture, Biotechnology and Electronics; as these are the areas being focused for cooperation with Argentina.

Pakistan- US Cooperation

A 3 -member delegation from the Ministry led by the Secretary MoST participated in the Pak-US Conference on S & T in Dubai from 21-24 March 2011. Coordination with NAS-US and Electronics Wing, MoST was made in this regard for approval of the Summary for the Prime Minister. The Electronic Wing was also provided assistance in preparations for the next (6th) round of Pak-US Strategic Dialogue expected in 2011-12. Participation of PNAC's delegation in a meeting in Singapore during April 2011 **under** the US Bio-Engagement Programme was also coordinated.

New frameworks of Cooperation:

- In principle approval of the Federal Cabinet was accorded for initiation of negotiations on: i) MoU on Science and Technology Cooperation between Pakistan and Mauritius, and ii) Agreement of Scientific and Technological Cooperation between Pakistan and United Mexican States. The decisions of the Cabinet were implemented through coordination with relevant Ministries / Divisions.
- An MoU between PSQCA and ISIRI- Iran was finalized for signing with the concurrence of the Cabinet Division.
- A proposal for an MoU on Science and Technology Cooperation between Pakistan and Russian Federation was being pursued through diplomatic channels.

Briefs on S & T Cooperation with various friendly countries were provided to the Economic Affairs Division (EAD) and Ministry of Foreign Affairs for the high-level visits, meetings of the Joint Economic Commissions (JECs) and Joint Ministerial Commissions held in the year 2010-11, besides participation of MoST was arranged in various Inter-ministerial meetings held at EAD, Ministry of Foreign Affairs etc. to prepare the high-profile events held in Pakistan and abroad; specifically in respect of following bilateral relations:-

- Pakistan-Uzbekistan
- Pakistan-Kazakhstan
- Pakistan-Egypt
- Pakistan- Iran
- Pakistan- Mauritius and
- Pakistan-Russian Federation
- A PSDP Project on "Bilateral Fund for Pakistan's obligations under the Agreements/MoUs with friendly countries" remained in implementation by the IL Wing.

Multilateral Cooperation in S & T

- Cooperation in science and technology was pursued with Inter-governmental organizations such as the UN-Agencies (CSTD, UNESCO, APCTT, etc.), OIC (COMSTECH, ISESCO, IAS, IDB etc), NAM Centre for Science and Technology, COMSATS, and Regional Bodies such as SAARC, ECO, ASEAN etc. by facilitating participation of Pakistan scientists in various meetings and activities, like trainings/workshops/seminars etc.
- The 14th General Assembly of the OIC's Ministerial level Standing Committee on Science and Technology (COMSTECH) was scheduled and convened by the President of Pakistan in January 2011. The Ministry of Science and Technology has been making preparations with the approval of the Prime Minister for holding the meeting in Islamabad. The preparations were pursued and coordinated through various sub-committees headed by the Secretary MoST and

an inter-ministerial Committee chaired by Federal Minister for Science and Technology. The COMSTECH General Assembly is held biennially in Pakistan. It provides a unique opportunity for the OIC countries to express their collective political will for promotion of Science and Technology and its applications for socio economic development of the Muslim Ummah. Pakistan has been playing a leading role in this regard. This is an opportunity for experts and policy makers to discuss and deliberate on issues Science and Technology as well as of common interests.

- The 14th General Assembly of COMSTECH was held in Islamabad from 11-13th January, 2011. It was preceded by the meeting of Executive Committee of COMSTECH held on 10th of January 2011. On the invitation extended by the President as Chairman of COMSTECH, about 275 delegates including OIC Secretary General, Ministers, Scientists and Policy makers representing 32 member states and 20 inter-governmental science organizations under OIC system participated in the General Assembly.

- The Pakistan delegation in the COMSTECH General Assembly was led by Pir Aftab Hussain Shah Jilani Federal Minister for Science and Technology. The presence of Ministers and heads of delegations from the OIC member states in the meeting was used more beneficially also by discussing the scope, status and issues of bilateral cooperation in S & T fields. Pakistan has already signed framework agreements/MoUs with some of the OIC member states. At the sidelines of the proceedings of the COMSTECH General Assembly, the delegations of member countries were engaged by the Pakistan Federal Minister for Science & Technology to discuss on matters of mutual interests for promoting cooperation in Science and Technology. The brotherly countries re-affirmed their commitment to work together by sharing of expertise and resources for betterment of the peoples of our nations.

- Earlier Pakistan participation was ensured in the Mid-term Review meeting on the Implementation of the OIC Ten Year Program of Action and the Vision 1441 H for Science and Technology and arranged by COMSTECH Secretariat in Dubai, United Arab Emirates, 4 – 6 December 2010.

- The Centre for Science and Technology of the Non-Aligned Countries and other Developing Countries (NAM S & T Center), and United Nations - Asian and Pacific Centre for Transfer of Technology (UN-APCTT) Organized and provided a number of meetings, Conferences/ Seminars and Training opportunities. Participation of Scientists from Pakistan was ensured and coordinated.

- The Ministry of Science and Technology arranged Pakistan's participation in the Technical Committee of UN-APCTT in Jakarta Indonesia and the meeting of the Governing Council of the Centre at Bangkok Thailand during November-December 2010.

- Scientists/Engineers working in S & T organizations were assigned participation in S & T activities abroad i.e. Workshops, Seminars, Symposia and Trainings etc. More than eighty cases of scientists/ technologists were processed for GoP approvals for their proceeding abroad on Trainings, Workshops, Symposiums etc, during the year under report.

- Pakistan annual contributions to UN-APCTT, NAM S & T Centre and ISNET were processed for timely release of funds to these international organizations.

- SAARC Workshop on "Science and Technology Issues on Climate Change" was held from 21-22 March 2011 in Islamabad in coordination with Pak Met Department (PMD). The Federal Minister for S & T inaugurated the workshop.

- Pakistan is an elected member of the UNCSTD. Pakistan participation was arranged at the Ministerial and Expert levels in the Annual sessions of the Commission and the Inter-sessional Panels held in Geneva in December 2010 and May 2011 respectively.

- The ECO Secretary General Mr. Yahya Maroofi visited Pakistan/MoST in March 2010 for discussion on the matters pertaining to Establishment of ECO Science Foundation (ECO-SF) in Pakistan. The first meeting of the BoT of the ECO Science Foundation was pursued to be held in Islamabad in December 2011.

- The Statute of the Standards and Metrology Institute of Islamic Countries (SMIIC) to be established in Turkey under the OIC System were approved by the Federal Cabinet for signing and ratification by Pakistan. The Prime Minister accorded approval for Pakistan's participation in the General Assembly of the SMIIC in Istanbul Turkey in July 2011.

Technical Matters of S & T Organizations

Technical and administrative matters pertaining to Pakistan Council for Science and Technology (PCST), Pakistan Science Foundation (PSF), National University of Science and Technology (NUST), COMSATS' Secretariat and COMSATS Institute of Information Technology (CIIT) were dealt with by the International Liaison (IL) Wing :

- The National University of Science and Technology (NUST)'s Progarmme "DISCOVER" for promoting entrepreneurship amongst young graduating students was approved by the Prime Minister of Pakistan along with a special financial allocation to NUST vide Summary submitted by the Ministry of Science and Technology in April 2011. The Programme-DISCOVER is aligned with Government's Vision of self-reliance and income generation, using the seats of higher learning as active partners in economic development through focus on Research, Innovation and Commercialization.

- The COMSATS Institute of Information Technology (CIIT) was provided assistance for its cooperation with IDB / OIC. The case for strengthening of COMSATS Institute of Information Technology (CIIT) with the assistance of OIC and Islamic Development Bank (IDB) was pursued by holding meetings in Jeddah, Saudi Arabia: March 2-6, 2011. A three member delegation of CIIT led by Secretary MoST visited Saudi Arabia, as a follow-up of the visit of IDB Mission and Jeddah-based IDB Group on developing Member Country Partnership Strategy (MCPS).

- Issues of existing and proposed New Campuses of CIIT at Lahore, Karachi and AJK were coordinated with different stake-holders.

- PSF- French Collaboration, January – April 2011, was assisted through materializing an MoU with French Academy of Sciences signed in Paris in witness of the Secretary MoST. It was signed on behalf of PSF by the Chairman PSF. The Collaboration resulted a training of trainer in France and Exhibitions on Biodiversity in various cities of Pakistan during the year under report.

A 5 days National Symposium on Biodiversity of Pakistan - May 2011 at Islamabad with funding support from MoST was coordinated with Pakistan Museum of Natural History (PMNH) a subsidiary of PSF.

Electronic Wing

Functions:

- Supervising and providing guidance including, planning and evaluation of research and development works, scrutiny/ monitoring of development projects.

- Coordination of development programs in the fields of electronics, renewable energies and Molecular Biology.
- To deal with affairs of National Institute of Electronics (NIE).
- To deal with affairs of Pakistan Council of Renewable Energy Technologies (PCRET)
- To deal with the affairs of Centre for Applied Molecular Biology (CAMB)
- To process draft Acts for providing legal cover to autonomous organizations of MoST which were created through resolution / executive orders etc.
- To process and coordinate the implementation of projects regarding E-Government in S & TR Division with the help of IT&T Division and Electronics Government Directorate (EGD).
- Establishment of Science Cities.
- Execution of Activities under Pak-US S & T Cooperation Programme.

Activities of Electronics Wing

- Carried out monitoring, evaluation of research and development projects in the fields of electronics renewable energies and Molecular Biology.
- Dealt with the technical affairs of National Institute of Electronics (NIE), Pakistan Council for Renewable Energy Technologies (PCRET) and Centre for Applied Molecular Biology (CAMB)
- Enactment of organizations of MoST created through resolutions / executive order etc. and have no legal status.
- Implementation of e-government initiatives in S & TR Division with the help of IT&T Division and Electronics Government Directorate (EGD)
- Implementation of activities under Pak-US agreement on Science and Technology cooperation and Bio-Engagement Programm.
- Coordinated meetings of National Assembly Standing Committee on Science and Technology.

DETAILS OF ACTIVITIES

Legislation

Following draft Acts were processed for legislation.

Draft Bill for Establishment of Pakistan Council of Renewable Energy Technologies (PCRET)

The draft bill for establishment of Pakistan Council of Renewable Technologies (PCRET) is under submission to the Parliamentary Affairs Division for legislation. After introduction in the National Assembly, the bill is under consideration by the National Assembly Standing Committee for S & T.

Draft Bill for Establishment of COMSATS University

The draft Bill for establishment of COMSATS University has been prepared and is at advanced stage of inter-Ministerial consultation. The replies/suggestions received are being compiled.

Draft Bill for Establishment of Pakistan Council of Science & Technology (PCST)

The draft bill for establishment of Pakistan Council of Science & Technology (PCST) has been circulated for comments/suggestions from the relevant Ministries and organizations.

Draft Bill for Establishment of Council for Works & Housing Research (CWHR)
Draft bill for Establishment of Council for Works & Housing Research (CWHR) has been prepared in consultation with the organizations and circulated to relevant Ministries and organizations for their comments/suggestions as required under Rules of Business.

Draft Bill for Establishment of Pakistan National Accreditation Council (PNAC)
The draft bill for establishment of Pakistan National Accreditation Council (PNAC) was circulated among Ministries / Divisions for their comments. The comments and suggestions received were forwarded to PNAC for incorporation in the Draft Act. The same is pending with the organization, as the organization intends to register the PNAC under company's Act or other legal cover. Now the authorities decided that it would be appropriate that PNAC may adopt the normal procedure as an autonomous body with proper legislative cover. The draft Act is at final stages of its submission to Cabinet for its approval.

Draft Bill for the Establishment of Centre for Applied Molecular Biology (CAMB)
Draft Bill for establishment of Centre for Applied Molecular Biology (CAMB) is under preparation.

Draft Pakistan Standards and Quality Control Authority (PSQCA) amendment bill
A draft amendment bill to modify Pakistan Standards and Quality Control Authority (PSQCA) Act 1996 has been finalized and submitted for inter-Ministerial consultation as required under the Rules of Business.

Amendment in the Pakistan Engineering Council (PEC) ACT 1976
The amendment proposed in the Pakistan Engineering Council Act 1976 after passing by the National Assembly and Senate has been approved by the President Islamic Republic of Pakistan and notified on 24th January, 2011.

A further amendment bill to include the Engineers-in-Chief, as member in the Board of Governor of PEC is under submission to Parliamentary Affairs Division for legislation.

Draft Bill for Establishment of Halal Board
A bill for the establishment of Halal Board is under preparation in consultation with stakeholders

Meetings of National Assembly Standing Committee on Science and Technology
Coordinated and arranged meetings of National Assembly Standing Committee on S & T at PCRET and NIE. The decisions made in the meetings were persuaded for implementation.

Evaluation of Monitoring Reports
The monthly performance reports of National Institute of Electronics (NIE), Pakistan Council of Renewable Energy Technologies (PCRET) and Centre for Applied Molecular Biology (CAMB) were expedited and evaluated and necessary guidance given to the Institutes.

The bottlenecks pointed out by the NIE, PCRET and CAMB regarding implementation of projects and administrative matters were taken up with the concerned Ministries/ departments for providing the desired requirements.

Woman Harassment Committee
DEA MoST is the member of the committee on Woman Harassment at work place. The code of conduct was prepared and displayed within the Ministry as per requirement of Ministry of Women Development. The approved draft was also forwarded to the Ministry of Women Development for their information.

Pak-US S & T Cooperation Program

Under the programme following five joint R & D proposals from Pakistani and US Scientists for funding were finalized.

Project No.1:
Enhancing the minimally invasive surgery skills of general surgeons and allied surgical specialists at the national level. Prof. Dr. Ronald C. Merrell, Virginia Commonwealth University Prof. Dr. Asif Zafar Malik, Holy Family Hospital Rawalpindi.

Project No. 2:
Capacity building, epidemiology, and risk assessment of endemic and emerging tick- borne disease in KPK and FATA, Pakistan. Dr. Mike Teglas, University of Nevada, Reno Dr. Khlaid Khan, Veterinary Research Institute Peshawar.

Project No. 3:
Application of streamlined molecular approaches to hepatitis C: implications for public health and patient management. Dr. Yury Khudyakov, U.S. Centers for Disease Control and Prevention, Dr. Muhammad Idrees, National Centre of Excellence in Molecular Biology, Lahore.

Project No.4:
Characterization and utilization of Gossypium arboretum as a source of residence against begomoviruses that are a threat to cotton crop in Pakistan and the United States.

Dr. Peng W. Chee, University of Georgia, Dr. Shahid Mansoor, National Institute of Biotechnology and Genetic Engineering, Faisalabad.

Project No.5:
Solid Waste Management for Bio-energy Production.

Dr. Willian J. Orts, U.S. Department of Agriculture, Agricultural Research Service, Dr Romana Tabassum, National Institute for Biotechnology and Genetic Engineering, Faisalabad.

The US National Science Foundation had released its share in US to the collaborators of Pakistani Researchers, whereas the Ministry could not arrange committed funds due to non-approval of PC-I. Therefore the US Government was explained the constraints being faced and requested to sponsor the projects fully from Bio-Engagement Programme. The US side agreed to fully sponsor the first three projects under the Bio engagement Programme and showed its reluctance to sponsor the others. Later-on due to some media reports about financial indiscipline at VRI, Peshawar and CAMB Lahore, the US side withdrew its decision. However on the intervention of MoST officials the US side agreed to reconsider its decision and extended sponsorship to VRI, Peshawar. The Ministry of Science & Technology with the concurrence of EAD had signed Project Implementation Letters of the above two projects. The Funds for first year have been transferred to respective institutions, and the projects are performing well.

The Ministry had requested Higher Education Commission to own the approved projects at Serial No. 4 and 5 as these belongs to affiliated institutions of Degree Awarding Institutions and released funds on behalf of MoST as US side has already released its share. The HEC has released the committed share and these projects are also at final stage of their completion.

In the Ministry of Science & Technology, under the BEP programme of US Government, presently following joint research projects with funding from BEP are under implementation.

- Provision of secure field sampling vehicles to Pakistan Council for Research in Water Resources (PCRWR) National Water Quality Lab and 5 regional labs.

- Expand capacity of PCRWR Pak NAWQA to include virology as part of the Pak NAWQA and augment facilities to enable routine diagnostic virology in water samples including a clean room and air purifier

- Establish long-term collaboration and training to sustain capacity of PCRWR staff / professionals in geology, hydrology, and IT to maintain and use data warehouse that has been constructed by USGS

Another project proposal on "Capacity Building at Pakistan National Accreditation Council for Laboratory Biorisk Management System" is under active consideration under Bio Engagement Programme. A joint Action Plan has been agreed. Consultative process with PNAC and PSQCA for adoption of standards has been initiated.

A meeting to explore possibilities for further collaboration with the U. S. Department of State regarding ongoing programmes related to Bio-engagements was held in Cairo, Egypt from 15-17, December 2010. JEA, S & T R Division and Mrs. Hifza Rasheed. Deputy Director, Incharge, Water Quality Lab, PCRWR, Islamabad were part of 20 member Pakistani delegation headed by Dr. Irfan Shami, Director General, Disarmament, Ministry of Foreign Affairs. The U. S. delegation was comprised of 45 members, headed by Dr. Sharon White, Director, ISN/CTR, U.S. Department of State, USA.

In the meeting the project proposals from Pakistan side, earlier submitted through M/o Foreign Affairs and deliberated in earlier meetings were discussed in detail and chalked out possible assistance from U.S. side to execute the proposals.

The Ministry of Science and Technology had forwarded following three proposal for consideration:-

a) Capacity building of PCRWR to incorporate microbiology and diagnostic virology in Pak NAWQA

b) Pakistan National Water Data Warehouse

c) Capacity building at Pak National Accreditation Council for biorosk management program.

- The US side agreed to consider the proposals under US Bio-engagement programme. The U S Government started implementation of first two projects, whereas the third project is under active consideration.

A Conference on Pakistan – US Science & Technology Cooperation Programme was held at Dubai, UAE from March 21-24, 2011. In the conference, U S Academy of Sciences had invited Principal Investigators of selected Joint Research Projects in the field of Biology under the Pak U S agreement being implemented through funding from Ministry of Science & Technology and Higher Education Commission. More than 60 notable Scientists and S & R Managers from both sides participated in the Conference. A three member delegation comprising, Mr. Irfan Nadeem, Secretary, S & TR Division, Abdul Haleem Asghar, JEA and Mr. Zawar Hussain, DEA represented the Ministry in the conference.

A follow-up meeting of decisions taken in Cairo meeting regarding Capacity building at Pak National Accreditation Council for biorosk management program was held in Singapore from May 17-21, 2011. In which Mr. Abdul Haleem Asghar, Joint Electronics Adviser, MoST, Mr. Najamuddin, Acting Director General, PNAC, Mr. Azhar Iqbal Deputy Director, PNAC and Mr. Mohib Zaman, Assistant Technological Adviser, MoST participated.

In the meeting, the draft PNAC proposal was finalized and action plan with requirements, roles, responsibilities and outcome discussed. PNAC has started work as per activities and timeline agreed.

A new PC.I titled “Pak-US Joint fund for Science and Technology Cooperation Phase II” has been prepared and submitted to Planning Commission for consideration of the CDWP.