



# PakAtom

Newsletter of the Pakistan Atomic Energy Commission

March-April, 2010

## Chairman visits Pakistan Institute of Engineering and Applied Sciences (PIEAS) Stresses pursuit of professional excellence

Pakistan Atomic Energy Commission is well-focused and actively engaged in various domains of nuclear technology and its applications for the socio-economic uplift of the country, be it nuclear power generation, cancer diagnosis and treatment, agricultural and biotechnology, research and development, human resource development or provision of technical services to the national industry.

This was stated by Dr. Ansar Parvez, Chairman, PAEC during his meeting with the Faculty of Pakistan Institute of Engineering and Applied Sciences (PIEAS), an educational institution of PAEC, on Tuesday, 20<sup>th</sup> April 2010.

Chairman, PAEC, a graduate of PIEAS himself, remembered with fondness his stay and services as its Faculty Member for 15 years. He commended the historic role of PIEAS in delivering high quality trained manpower for PAEC and other strategic organizations. He emphasized that the degree awarding charter that PIEAS rejoices since 2000 should be more dynamically harnessed to the advantage of PAEC requirements. To this effect, he proposed several mechanisms including a more down-to-earth assessment of PIEAS programs, possibility of young faculty exchange with PAEC establishments, and a significantly greater emphasis on applied and collaborative research. Dr. Ansar Parvez said that he envisages a greater and dynamic role of PIEAS in the emerging nuclear power sector in the country. He urged PIEAS to set standards of excellence



[Chairman, PAEC visiting Powder Metallurgy Lab. at PIEAS.](#)

for other engineering institutions of the country.

Earlier, he awarded cash prizes to the top-ranking students of MS/M.Phil programs at PIEAS.

Dr. Ansar Parvez visited newly constructed academic block, polymer block, student hostels, and recently developed High Performance Computing Lab., Bio-photonics Lab., Nano-materials and Powder Metallurgy Laboratories of PIEAS.

Dr. Muhammad Aslam, Rector PIEAS, welcomed the chief guest and presented a brief outline of technical interactions in which PIEAS is recently engaged, both nationally and internationally. Chairman, PAEC commended the efforts and regarded these endeavors to be of prime value in keeping PIEAS abreast with the state-of-the-art developments in science and technology.

Pakistan Institute of Engineering and Applied Sciences (PIEAS) was, originally, instituted as "Reactor School" at PINSTECH in 1967 with the initial mission to provide manpower trained in nuclear science and technology to PAEC. Serving as "Centre for Nuclear Studies" from 1976 to 1997 as an affiliate of Quaid-i-Azam University, the institute acquired the status of an autonomous degree awarding institution in the year 2000.

**PIEAS burst into national limelight in year 2006 when it was ranked by HEC as the No. 1 engineering institution of Pakistan. PIEAS offers Ph.D. and MS/M.Phil degree programs in Nuclear Engineering, Systems Engineering, Mechanical Engineering, Computational, Plasma & Laser Physics, Medical Physics, Materials Engineering, Process Engineering, Computer Science, Nuclear Medicine, Radiation and Medical Oncology; and BS degree programs in Electrical Engineering and Mechanical Engineering.**

## Scientific Information Division (SID), PINSTECH organizes a Workshop on “Acquisition and Selective Dissemination of Scientific Information from INIS and other on-line Databases”



[Inaugural Ceremony of the Workshop on “Acquisition and Selective Dissemination of Scientific Information”.](#)

A workshop on “Acquisition and Selective Dissemination of Scientific Information from INIS and other on-line Databases” was held at PINSTECH on 16<sup>th</sup> March, 2010, organized by the Scientific Information Division (SID) in the Directorate of Coordination. Besides PINSTECH, 41 participants from Universities and 23 from various PAEC Establishments attended this one-day scientific discourse. Mr. Waqar Ahmad Butt, Head SID, in his introductory remarks, elaborated that the objective of this workshop was to enhance collaboration with R&D organizations for effective utilization of literature resources. It was emphasized that due to heavy cost of books and journals, there must be a process of resource sharing among the libraries of R&D organizations.

Engr. Nasrullah Khan Qazi, Director General, PINSTECH, in his inaugural address, welcomed the participants and stressed upon the sharing of resources for multiplication of knowledge. He informed that PINSTECH Library, established in 1966, was the oldest one in PAEC. In 2002, it was declared as National Library of Physical Sciences by the Government of Pakistan on the basis of sources and experience. It is a resource centre for PAEC establishments. This library has a collection of about 32,500 books, 1700 journals titles (60,000 bound volumes) and 1.4 million

technical reports. Scientific information is being disseminated to various PAEC establishments as well as other R&D organizations throughout the country.

Previously, this literature was sent in the form of hard copies but now electronic media is being extensively used for fast and efficient transmission as well as to promote paperless culture. This Library has its own website which contains useful information for those who are involved in R&D programs. The Division also has a Printing Press and an Exhibit Area where the products, models and other information of various PAEC Centres have been displayed.

After inauguration, three lectures were delivered. The first lecture was by Mr. Waqar A. Butt, Head, SID on the Scientific Information System at PINSTECH. The second lecture was by Mr. Asif Bashir, DCS, SID on International Nuclear Information System (INIS) and the third one was by Mrs. Sana Ambreen Malik, SS, Physics Division on Library Information System. Mr. Usman A. Malik, SE, SID coordinated the practical session arranged at the main Library where sufficient number of computers were placed for hands-on-training. The participants took keen interest in the software developed for searching of literature from in-house collection as well as from other databases like HEC Digital Library and INIS AtomIndex of

IAEA. A visit to Pakistan Research Reactor (PARR-I) was also arranged.

In the afternoon, a fruitful panel discussion on resource sharing and networking among the libraries was held at the Materials Division Conference Room. Mr. Waqar A. Butt, Head, SID and Mr. Shahid Riaz Khan, Head, HRD jointly chaired this session. Participants gave very good suggestions and proposed that organizations/establishments who have their own websites should place their sources related to literature at their sites, which should be interlinked. A union catalogue of books in different libraries of PAEC should be established and made available on the websites of related establishments. Similarly, the standards available at different Centres must be shared by networking due to very high cost of that material. It was also suggested that such workshops should be organized at least once in a year and the duration should be increased to 3-4 days.

Finally, the closing ceremony was held in the same Conference Room. Engr. Nasrullah Khan Qazi, Director General, PINSTECH awarded the certificate of participation to all the participants of the workshop. He congratulated the organizers of the workshop for conducting such a successful activity and hoped that similar programs will be held in coming years.

## Upgradation of facilities at National Centre for Non-destructive Testing (NCNDT)

PAEC's National Centre for NDT (NCNDT) of SES Directorate is in the process of up-grading its facilities for carrying out non-destructive inspections. For this purpose, International Atomic Energy Agency (IAEA) has supplied a 4-Channel OMNISCAN TOFD equipment for NCNDT through a Technical Co-operation (TC) Project on "Development of Capabilities in Automatic Ultrasonic Testing and Material Corrosion Testing for Assessment of Structural Integrity". TOFD is an advance weld examination technique, which provides for fast and accurate scanning of lot of weld area. It is a widely used technique in the Nuclear and Petrochemical industry for carrying out NDT inspections, and will enable NCNDT personnel to perform flaw sizing accurately and efficiently.



*Demonstration of Time of Flight Diffraction (TOFD) Equipment to the NCNDT trainees by an IAEA expert at Vienna.*

In addition to the supply of TOFD Equipment, IAEA also arranged a short training of NCNDT personnel at Agency headquarters. A five member team of

NCNDT participated in the training course on Time of Flight Diffraction (TOFD) Equipment at Vienna (Austria) from 23 to 25 February 2010. ■

## PINUM ISO 9001-2008 Certification Ceremony and Inauguration of PINUM Pharmacy

PAEC's Punjab Institute of Nuclear Medicine (PINUM) is the first among currently working Nuclear Medicine and Radiotherapy Centres to get ISO 9001-2008 certificate from internationally recognized certifying body BVCI with the help of Directorate of Quality Assurance, PAEC.

ISO 9001-2008 certificate distribution ceremony was held on 2<sup>nd</sup> March 2010 at PINUM followed by inauguration of PINUM Pharmacy.

Member (Biosciences), Dr. Abdul Rashid graced the occasion as chief guest.

Director, DQA (Directorate of Quality Assurance), Mr. Shahid Hussain Jaferi and his team participated in this certification awarding ceremony.

Opening remarks were given by Mrs. Humara Noreen, Sr. Scientist.

After this Dr. Muhammad Saeed Akhtar, MR (Management Representative) PINUM introduced the background of ISO 9001-2008 certificate, different steps involved and untiring efforts of the officers and staff to enhance the quality services for the achievement of this certificate in collaboration with DQA.

After this, Director, DQA, Mr. Shahid Hussain Jaferi, presented technical details of ISO 9001-2008 certification.

Director, PINUM, Dr. Abubaker Shahid congratulated the PINUM staff for achieving the ISO 9001-2008 certification. He briefed the audience on the activities and quality services provided by PINUM and mentioned that only limited cancer treatment facilities are available in Faisalabad, which need to be expanded on priority basis for the huge population of this

district and adjoining areas. He highlighted the activities of PINUM breast cancer department and rapidly increasing services of chemotherapy provided at PINUM. He added that PINUM Pharmacy has been established to provide the medicines on discounted rates for the cancer patients.

Concluding remarks were delivered by chief guest, Member (Biosciences), Dr. Abdul Rashid. He appreciated PINUM as one of the best institute of PAEC medical centres for providing quality services to patients.

Mr. Shahid Hussain Jaferi, Director DQA and Member (Biosciences), presented ISO 9001-2008 certificate to Dr. Abubaker Shahid, Director, PINUM.

In the end, PINUM pharmacy was inaugurated by Member (Biosciences). ■

# PAEC's Nuclear Institute of Agriculture (NIA), Tandojam releases three crops varieties

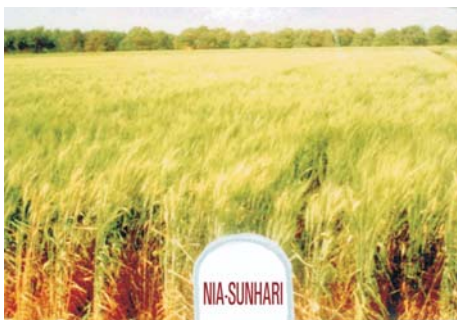
The 28<sup>th</sup> meeting of Provincial Seed Council of Sindh granted approval to different crops varieties, which included two varieties of wheat (NIA-Sunhari and NIA-Amber) and one cotton variety (NIA-Ufaq) of Nuclear Institute of Agriculture (NIA) Tandojam. Dr. Karim Dino Jamal, PS, is wheat breeder of NIA-Sunhari while Dr. Mehmood Sial, PS, is wheat breeder of NIA-Amber. Dr. Muhammad Mureed Kandhro, DCS, (Ret.) was the breeder of cotton variety NIA-Ufaq. With the release of these varieties, the total number of varieties developed by NIA, Tandojam has risen to 25. The institute has, therefore, played a vital role in enhancing agricultural production in Sindh and is a significant contribution of PAEC in agriculture.

## NIA-SUNHARI

It has been developed for irrigated areas which carries Rht<sub>1</sub> semi-dwarf gene from Norin-10. It is a crossed progeny of CHAM4/URES/BOW'S; selected from M<sub>2</sub> population. NIA-Sunhari (7-03) is a high yielding variety with a potential yield of 7500 kg/ha and average yield of 6500kg/ha.

In National trials, it ranked 1<sup>st</sup> for the grain yield on Pakistan basis as compared with the yield of other

candidate lines from Sindh.



NIA-Sunhari

## NIA-AMBER

A new wheat variety NIA-Amber has been developed through conventional breeding with pedigree-VEE/5'S/SARA/Soghat 90. In national trials (NUWYT), it ranked first in Sindh province under late sowing conditions showing 21.2 and 10.8% increase over local check and Inqilab-91 respectively. The variety has also potential to produce good yield under water stress condition.



NIA-Amber

## NIA-UFAQ-2008 Cotton

The new cotton variety 'NIA-Ufaq-2008' has been developed from the irradiated populations of DEM-84 (R-RAUS 250 GY CO 60 source) at Nuclear Institute of Agriculture (NIA), Tandojam. It is early in maturity: yield endowed with high lint ratio and improved fiber quality characteristics.

It has potential yield of 5000 Kg/ha. Due to early maturity, it is fit in cropping pattern of Sindh (Wheat-cotton-wheat-etc). NIA-Ufaq-2008 is more suitable and will hopefully prove the replacement of NIAB-78 in Sindh and Balochistan provinces.



NIA-UFAQ-2008 Cotton

## Inauguration of "Tele-Oncology Services" at NORI & Holy Family Hospital, Rawalpindi

Multidisciplinary meetings of Oncology Department of NORI with the Surgical Department of Holy Family Hospital, Rawalpindi through Video-conferencing were started in December 2009. Formal inauguration of Tele-Oncology services has recently been performed on 20<sup>th</sup> February 2010 by Professor Zafar Ullah Chaudhry, President, College of Physicians & Surgeons Pakistan who was on screen from Holy Family Hospital (HFH). The ceremony started with recitation from Holy Quran. This was followed by presentation of Prof. Asif Zafar, General Surgeon, who talked about the

importance of Telemedicine and how is it being utilized not only for the distance learning of doctors but also for multidisciplinary meetings. Dr. Javaid Irfan, Director delivered welcome address from NORI and stressed upon the role of multidisciplinary meetings in deciding the most suitable individualized treatment plan for cancer patients. These meetings are now part and parcel of cancer management before putting the patient on any single treatment modality. Later, two cases were discussed; one each from HFH and NORI. The ceremony was

attended by all the doctors of NORI.

The panel of experts from NORI comprised of Dr. Humera Mahmood, Consultant Oncologist and Dr. Shazia Fatima, Consultant Nuclear Physician. Case presentation was followed by addresses of Prof. Musaddiq Khan, Principal, Rawalpindi Medical College and Professor Zafar Ullah Chaudhry, President, CPSP who appreciated the Tele-Oncology services of NORI and HFH, and the way patients are discussed and facilitated through teleconferencing.

## ICARDA Scientist visits PAEC's Nuclear Institute of Agriculture and Biology (NIAB), Faisalabad

Dr. Mohammad Imtiaz, Chickpea Breeder/Geneticist, International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria visited PAEC's Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad on 23<sup>rd</sup> March 2010. Director NIAB, Syed Anwar Shah briefed the visitor about R&D programs of the institute. Dr. Imtiaz appreciated the achievements of NIAB in germplasm improvement that has, so far, resulted in release of 27 improved varieties of crops such as cotton, rice and pulses, which are valuable assets and contributing towards farmers' income and national economy.

Dr. Imtiaz also had an extensive visit of NIAB Experimental Farm where he examined wilt and drought nurseries of chickpea and lentil as well as NIAB breeding materials including ICARDA germplasm for disease resistance. He was impressed by the progress and showed keen interest in chickpea and lentil germplasm contributed by NIAB



[ICARDA Scientist, Dr. M. Imtiaz examining chickpea experiments at NIAB Farm.](#)

towards the genetic stock. Dr. Imtiaz emphasized further strengthening of collaboration between the two institutions and assured ICARDA's fullest support for NIAB in capacity building and involvement in coordinated research projects with other international organizations. ■

## Inauguration of Pharmacy at Bahawalpur Institute of Nuclear Oncology (BINO)

Member (Biosciences), Pakistan Atomic Energy Commission, Dr. Abdul Rashid inaugurated the recently established pharmacy at BINO, Bahawalpur on 8<sup>th</sup> March, 2010. The pharmacy, which is located within the premises of BINO was established by the Bahawalpur cancer society. A ceremony was held in the auditorium of BINO. Dr. Shahab Fatmi, Director, BINO in his welcome address briefed the audience about the activities of Bahawalpur cancer society. He thanked the Bahawalpur cancer society members for their full support in the smooth running of this welfare society. Mr. Nasim Jafri, Vice President-I and Mr. Mehmood Majeed,

Vice President-II of Bahawalpur cancer society addressed the participants.

They talked about the need of this welfare society in this region and presented an overview of its history and activities. They appreciated the dedication of the Director and other staff of the BINO for establishing the pharmacy in a very short time.

Dr. Kaukab Jabeen, Principal Medical Officer gave a presentation about facilities available at BINO. She highlighted the details of free medical camps, which are being arranged by Bahawalpur cancer society for the early detection of breast cancer as part of the breast cancer awareness campaign of

the Commission.

Finally, Dr. Abdul Rashid, Member (Biosciences), addressed the audience. He applauded the efforts put in by BINO for the welfare of patients in the form of mobile breast screening camps and the establishment of pharmacy wherefrom patients can get quality medicines at affordable prices. The Member then inaugurated the pharmacy and also took a round of the institute. He talked to the patients admitted in the cancer ward and presented them flowers and fruits. He assured to provide his full support for the betterment of cancer patients and up-gradation of the Institute. ■

## Assignments of Chairman/Member Abroad

- Dr. Ansar Parvez, Chairman, PAEC led Pakistan delegation to the Meeting of IAEA Board of Governors from 01-05 March 2010 held in Vienna (Austria).
- Chairman, PAEC also attended International Conference on Access to Civil Nuclear Energy held in Paris, France from 08-09 March 2010.
- Chairman, PAEC and Mr. Waqar Murtaza Butt, Member (Engineering) attended the 40<sup>th</sup> Anniversary celebration of Shanghai Nuclear Engineering Research & Design Institute (SNERDI) at Shanghai, China from 05-11 February 2010.

## Assignments of PAEC Officers Abroad

- Mr. Muhammad Arif Khiyani, Deputy Chief Engineer, Karachi Nuclear Power Complex (KANPC), Karachi undertook assignment as KANUPP Representative (KANREP) with CANDU Owners Group (COG) Office, Toronto, Canada for a period of six months from 19 February, 2010.

The following officers of PAEC attended National Training Course on the Portable Time of Flight Diffraction (TOFD) Equipment at IAEA Headquarters, Vienna (Austria) from 23-25 February 2010:

- Mr. Shabbir Ahmed, Principal Engineer, NCNDT, Islamabad
- Mr. Muhammad Saeed ur Rahman, Principal Engineer, NCNDT, Islamabad

- Mr. Javed Ahmed, Principal Engineer, NCNDT, Islamabad
- Mr. Tahir Nazir, Principal Engineer, NCNDT, Islamabad
- Dr. Abdul Majid Awan, Principal Scientist, NCNDT, Islamabad

## Visits of Foreign Experts to Pakistan

- Mr. Martin Peter Sebald (German) is visiting Waste Management Division, DNFC from 29-03-2010 to 04-04-2010 for Task: Installation and Tests of equipment supplied under IAEA TC Project- Strengthening the Infrastructure for the Management of Radioactive Waste.

- Mr. Matteo Bortolotti, GE Engineer and Mr. Nicola Cesca, GE Engineer (Italians) visited INMOL, Lahore on 20th March 2010 for a period of one week for installation of Hot Lab. Their visit is sponsored by M/s. Raditech International, Lahore.

- Mr. Walter Capece, Business Manager (Italian) visited INMOL, Lahore from 10-11 March 2010 for PET CT Cyclotron. His visit is sponsored by M/s. Raditech International, Lahore.

- Mr. Guo Ting and Mr. Fang Zhenwei (Chinese) visited NIMRA, Jamshoro from 24-31 March 2010 for maintenance and service for Radiotherapy Simulator installed in NIMRA, Jamshoro.

- Dr. Muhammad Jahanzeb, National Director of Care Guidelines, Aptium Oncology, Prof. of Medicine, University of Tennessee, Medical Director, Lynn Cancer Institute West Campus, USA visited GINUM, Gujranwala on 20 February, 2010 and INMOL, Lahore on 23 February, 2010 for Academic

session on "Recent treatment Options on HER2 NEU Metastatic Breast Cancer (MBC)".

- Mr. Mark Sebastian Palermo and Mr. Mark Clayton Gilkey, (US Nationals) visited PARAS FOODS Lahore on 19 February, 2010 in connection with facility qualification for the export of irradiated food material to US.

- Mr. Thorbjorn Olof Waxin and Mr. Rolf Dennis Soderberg, GE Engineers from Sweden are on a visit to INMOL, Lahore for a period of two months w.e.f. third week of February, 2010 for installation of PET CT/Cyclotron.

## Employment Abroad

- Dr. Naeem Iqbal, Principal Engineer, PIEAS has proceeded to Saudi

## Higher Education Commission (HEC) Best Research Paper Award for PAEC Scientist

Dr. Shahid Hussain, Principal Scientist, National Tokamak Fusion Program, has been awarded the "Best Research Paper Award" under the program "HEC Outstanding Research Award Series". The award consists of a certificate and cash prize of Rs. 50,000/-. The award ceremony was held on 17<sup>th</sup> December 2009 at HEC auditorium.



He obtained his Ph.D. in 2007 in the field of laser spectroscopy. He has already published eighteen research papers in reputed international journals.

## PAEC's Cancer Hospital, Nuclear Institute of Medicine and Radiotherapy (NIMRA), Jamshoro launches Breast Cancer Awareness drive

Nuclear Institute of Medicine and Radiotherapy (NIMRA), Jamshoro conducted an awareness program on breast cancer at Institute of Women Development Studies (IWDS) at University of Sindh, Jamshoro on 09-01-2010. A talk was given by Dr. Aisha Siddiqua, Principal Medical Officer and Dr. Anwar Nisar, Principal Medical Officer, NIMRA on risk factor/prevention & self examination followed by a talk on menstrual irregularities by

Dr. Roshan Ara, a Gynaecologist, Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro.

A large number of female professors/students and people residing at Colony of Sindh University attended the program. At the end, a question answer session was held in which speakers answered the questions raised by the participants.



*Right to Left: Dr. Anwar Nisar, PMO, NIMRA, Dr. Aisha Siddiqua, PMO, NIMRA, Prof. Dr. Rafia Ahmed Shaikh, Pro Vice Chancellor, University of Sindh, Jamshoro, Apa Akhtar Jabeen Siddiqui, Madam Roshan Ata Qazi & Prof. Dr. Marhab Qasmi, Director, Institute of Women Development Studies, University of Sindh, Jamshoro.*



*A view of the audience.*

## Breast Cancer Diagnosis by Neuropeptide Y Analogues: From Synthesis to Clinical Application

Dr. Irfan Ullah Khan, P r . S c i e n t i s t (Radiopharmacy Division) at PAEC's Institute of Nuclear Medicine and Oncology (INMOL), Lahore, has published a manuscript entitled: "Breast Cancer Diagnosis by Neuropeptide Y Analogues: From Synthesis to Clinical Application", in *Angewandte Chemie (Int. ed)*, as very important paper. This highly reputed journal is published by German Chemical Society with a prestigious Impact Factor of 10.889. Dr. Irfan, being the first author, synthesized several NPY analogues and tested them for receptor binding affinity on various breast cancer cell lines. The promising candidates were further tested through metabolic stability, cell internalization; signal transduction assays, biologically evaluated in rabbits and ultimately, applied to breast cancer patients at varying stages of disease. The radiopharmaceutical kit was developed in cooperation with Mr. Muhammad Javed, PS, the clinical studies were conducted with Dr. Hamid Naseer, SMO, and the whole research was performed under kind supervision of Dr. Syed Waqar Hyder, Director, INMOL. The research work was carried out in collaboration with University of Leipzig, Germany. This research work is based on the concept that transformation of NPY<sub>Y<sub>2</sub></sub> to Y<sub>1</sub> receptor subtype occurs in 90% of all breast tumours and 100% of the examined metastases (Reubi, *Cancer Res.* 61: 4636-41). Dr. Irfan has already several publications to his credit with a cumulative journal impact factor 26.208 and citation index 31. INMOL gets the credit to develop and inject this peptide based potential radiopharmaceutical to the patients very first time in the world with wonderful success. It is hoped that this novel development will go a long way in combating the dreadful fight against cancer, because peptide chemistry seems the future of cancer diagnosis and therapy.



*Dr. Irfan Ullah Khan*

# PAEC's Directorate of Quality Assurance providing training and certification in various professional domains

To promote the quality culture in PAEC, Directorate of Quality Assurance (DQA) is organizing seminars on Quality Management Systems (QMS) and advanced Quality Management courses. DQA has conducted 28 one day seminars in PAEC establishments attended by more than 2000 participants, so far. DQA's effort for training PAEC personnel in quality management has resulted in 134 IRCA Certified QMS Lead Auditors, 35 Six Sigma Green Belts and 14 Six Sigma Black Belts certified from Moody International and Singapore Quality Institute International (SQII) respectively. DQA, through its experienced Lead Auditors, is providing technical support and consultancy services for establishing ISO 9001 based QMS and IAEA Management System in PAEC establishments to bring improvements. Through DQA consultancy services, eight (8) PAEC establishments in the areas of healthcare, food & agriculture, design & development, soil testing and radiation services, have been awarded ISO 9001:2008 QMS certification.

To enhance the analytical abilities of PAEC officers, DQA organized Six Sigma Green and Black Belt courses in collaboration with Pakistan Institute of Quality Control (PIQC). This Six Sigma Black Belt course was licensed from SQII, which is Asia's premium Six Sigma training institute. Six Sigma Black Belt Course was spread over 5 months with 20 days extensive study/presentations, passing an exam and four months of project submission by each participant in his/her respective area/field.

Six Sigma is a popular management philosophy initiated by Motorola in 1980s, to quantify the defects in



*A group photograph of Certified Six Sigma Black Belts with Chairman, PAEC, Dr. Ansar Parvez and distinguished guests.*

manufacturing processes, and to reduce those defects to a very small level (i.e. 3.4 Defects Per Million Opportunities 'DPMO'). Six Sigma program uses Define, Measure, Analyze, Improve and Control (DMAIC) methodology and makes it distinguishable from other quality initiatives. This methodology involves the use of statistical tools within a structured approach for gaining the knowledge needed to achieve better and less expensive products and services. It provides specific methods to re-create the process so that defects are reduced in the first place. Six Sigma program requires three levels of training i.e. (i) Green Belt, middle level course for quality improvement teams, (ii) Black Belt, an advanced course for quality managers and (iii) Master Black Belt for trainers.

The certificate distribution ceremony for PAEC's first batch of Six Sigma Black Belt course was held at the premises of DQA on March 18, 2010.

Chairman, PAEC distributed certificates and shields among 14 successful course participants from different PAEC establishments. Director, DQA, Mr. Shahid Hussain Jafri elaborated the aims and objectives of DQA and the efforts made in establishing and implementing management systems based on ISO standards in PAEC. Director General (Tech), Chairman Secretariat, Dr. Tariq Jamal Solaija, in his address, highlighted the need of Quality Assurance in PAEC projects and appreciated dedication, discipline and team work in DQA. Three participants explained how their Six Sigma projects have improved the processes of their departments/establishments through these projects.

In the concluding remarks, Chairman appreciated the quality assurance awareness program of DQA and stated that PAEC accords top priority to quality assurance and safety.