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Contributions from readers are welcome on any matter relevant to the mission of COMSATS, namely the promotion of South-South cooperation in science and technology for sustainable progress of the developing countries. The responsibility for the accuracy of any information rests with the original source. Views expressed in this publication do not necessarily reflect those of its editors, publisher or COMSATS.

The Federal Secretary MoST, chairing the meeting of the Inter-Ministerial Coordination Committee for holding COMSATS' Commission Meeting on 16-17 April 2012

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From the Executive Director's Desk

The 'Right to Development' is enshrined in the United Nations General Assembly resolution 41/128, dated 4th December 1986. It is now a well-recognized group right endorsed by the World Conference on Human Rights in 1993 and included in the ToRs of several UN Institutions and Offices. Later during 2012, the United Nations Conference on Sustainable Development (Rio de Janeiro, Brazil) will deliberate upon the sustainability roadmap, 20 years after its blue-print was formulated in the 1992 Rio Summit. As emphasized in the South Centre's Research Paper No. 40[*], it will be of paramount importance for the developing countries to ensure that all policies and initiatives aimed at environmental preservation as a basic paradigm of sustainability should be firmly anchored in the right to development, in accordance with the aspirations of a vast majority of mankind.

In view of different perspectives and competing interests of different groups of countries, it would not be easy to arrive at a consensus solution, satisfying all groups. Owing to their historical liability as principal contributors of environmental degradation through extravagant natural resource utilization and their current economic capacity, it is only natural that the developed countries are expected to bear the bulk of climate change mitigation cost. However, in the long run, a stable world order can only be the one in which the developmental gaps between nations are minimal and responsibilities equally shared. The quicker this state is attained, the better it is for the world peace and stability. While the rich nations should recognize that this eventuality is in their self-interest and they should work whole-heartedly for its realization, the developing world has to put in extraordinary efforts to pull itself out of the abyss of poverty and underdevelopment. It is needless to say that no strategy for rapid development can be made without basing it on S&T capacity-building – not just by proclaiming well-meaning intentions but with solid financial backing for institution-building and investment in human capital.

COMSATS is committed to facilitate South-South cooperation for preserving the interests of the developing countries in the international arena and providing a means of supplementing their national efforts for technology-based model of economic development. After 17 years of its inception, COMSATS is now gearing up for its enhanced international role as a promoter of collaborative scientific research with the participation of its Network of seventeen Centres-of-Excellence spread over Africa, Asia and Latin America. To achieve the objectives of renewed political commitment for assigning due role to S&T in the national development agendas of the member countries and to formalize new capacity-building initiatives of COMSATS, it has been decided by the current Chairperson of COMSATS, H.E. Syed Yusuf Raza Gilani, Prime Minister of Pakistan, to hold the Commission's meeting on April 16-17, 2012, in Islamabad, Pakistan. It is expected that this ministerial level meeting will provide Member States a welcome opportunity to review the technology profiles of their countries and collectively plan their responses for ensuring progress at national levels and mutual cooperation at international level.

[*] Martin Khor, "Risks and Uses of the Green Economy Concept in the Context of Sustainable Development, Poverty and Equity", the South Centre RP40, July 2011.

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NEWS/ACTIVITIES/HIGHLIGHTS FROM COMSATS SECRETARIAT

PREPARATIONS TO CONVENE THE 2ND COMMISSION MEETING OF COMSATS

COMSATS' statutory bodies provide the necessary impetus, guidance and directives for accomplishing the mission and objectives of the organization. Coordinating Council of COMSATS, comprising the Heads of COMSATS' Centres of Excellence, meets every year to review the activities of COMSATS' Network and approve the future course of action. The Consultative Committee met in Abuja, Nigeria, during 2009 to reinvigorate the support of COMSATS' Focal Points in the Member States for the organization's projects and programmes.

The 2nd Commission Meeting of COMSATS is being held on April 16-17, 2012 in Islamabad, Pakistan, to reaffirm political support of its Member States for the organization. Invitations to attend the Meeting have been extended by the incumbent Chairperson of COMSATS, the Prime Minister of Pakistan, H.E. Syed Yusuf Raza Gilani, to the Member States. The Meeting is being held at the level of Ministers nominated by the Heads of State/Government. Major objective of holding the Commission Meeting is to garner the support of the Member States for:

- Revitalizing the activities of COMSATS in the light of its vision and mission as stipulated in the 1994 Foundation Agreement; and
- Considering ways and means for achieving scientific collaboration among Member States, especially in new and emerging technologies that could lead to rapid and sustainable economic progress.

The host of the meeting will be the Ministry of Science and Technology, Government of Pakistan. In order to coordinate the arrangements for holding the Commission Meeting, the Ministry has constituted an Organizing Committee and an Inter-Ministerial Coordination Committee. A brief on the undertakings of these Committees is as follows:

Meeting of the IMCC in progress

Organizing Committee

The Organizing Committee held its first meeting on September 14, 2011, to deliberate on organizational matters of the Commission Meeting. Chaired by the Federal Secretary, Ministry of Science and Technology (MoST), Government of Pakistan, and Co-chaired by the Executive Director COMSATS, the Organizing Committee meeting was attended by its members comprising senior officials from the Ministry of Science and Technology, Ministry of Foreign Affairs, COMSATS Headquarters, COMSATS Institute of Information Technology (CIIT), Pakistan Council of Scientific and Industrial Research (PCSIR) and National Institute of Electronics (NIE).

The Federal Secretary MoST, Mr. Akhlaq Ahmad Tarar, welcomed the participants of the meeting and stressed that all members should ensure fool-proof arrangement for the Commission Meeting. In order to streamline the organizational matters, the Chairman constituted sub-committees responsible for different sets of tasks that pertain to: overall coordination; agenda and programme; boarding and lodging; media and publicity; logistics; administrative and financial affairs; and venue arrangements.

The Executive Director COMSATS, Dr. I. E. Qureshi, briefed the participants of the meeting about the history of COMSATS and past efforts of its Secretariat to convene the Commission Meeting. Referring to the previous abortive attempts for convening the Meeting, Dr. Qureshi considered it imperative to hold the Meeting in 2012 to achieve the objectives laid down in the Inter-governmental Agreement during the Foundation Meeting of the Commission.

Having made decisions regarding the tentative dates and venue of the meeting, the Committee resolved to undertake all that is necessary for a timely and successful convening of the Commission Meeting.

Inter-Ministerial Coordination Committee (IMCC)

First meeting of the Inter-Ministerial Coordination Committee to review the preparations being made for holding the Commission Meeting of COMSATS on 16-17 April 2012, was held at the Ministry of Science and Technology (MoST), Government of Pakistan, Islamabad, on December 14, 2011, under the chairmanship of the Federal Secretary MoST, Mr. Akhlaq Ahmad Tarar. Other participants of the meeting belonged to: Ministry of Science and Technology; COMSATS Secretariat; Ministry of Finance; the Cabinet Division; Press Information Department; Islamabad Capital Territory (ICT) Administration; and Intelligence Bureau of Pakistan, as well as major scientific institutions under the Ministry of Science and Technology, i.e. Pakistan Council of Scientific and

Industrial Research (PCSIR); National Institute of Electronics (NIE); and Pakistan Council of Research in Water Resources (PCRWR).

The Chairman reviewed the recent efforts being made by COMSATS Secretariat and the Ministry of Science and Technology, in collaboration with other ministries and government institutions of Pakistan for the preparations of Commission Meeting. Evaluating the distribution of tasks under the seven sub-committees constituted by the Organizing Committee for various organizational matters, the Chairman mandated to hold the sub-committee meetings within a fortnight.

Highlighting the role of COMSATS as an IGO, working for sustainable development through South-South cooperation, the Executive Director COMSATS deliberated on the significance of holding the Commission Meeting of COMSATS. He informed the participants about the preparedness of COMSATS Secretariat for the Commission Meeting and gratefully acknowledged the patronage and generous support of the Government of Pakistan towards COMSATS. Dr. Qureshi brought to the participants' notice his meeting with the Prime Minister of Pakistan and the directives issued thereafter by the Prime Minister Secretariat. He highlighted the two key objectives of the meeting: (i) election of the next Chairperson of the Commission, and (ii) the revision in the Inter-governmental Agreement of COMSATS.

Taking into account the objectives of the Commission Meeting, and the expected number of international delegates and the local invitees, decisions were made viz. the inaugural ceremony; sideline meetings; banquets and dinners by the host Government and its affiliated institutions; boarding and lodging arrangements; medical and security measures; media and publicity; protocol, logistics and recreation; and administrative and financial matters. Senior representatives of various ministries and government bodies took the responsibility for suitable arrangements to be made under the assigned tasks, by supporting the relevant Sub-committees constituted earlier under the Organizing Committee of the Commission Meeting.

COMSATS MANAGEMENT COMMITTEE HOLDS ITS 31ST MEETING

The 31st regular meeting of COMSATS' Management Committee was held on 22nd December 2011 at COMSATS Secretariat, Islamabad. Chaired by the Executive Director COMSATS, the meeting was attended by the committee members, Dr. S. M. Junaid Zaidi, Rector CIIT; Mr. Tajammul Hussain, Advisor (Programmes) COMSATS; Mr. Asim S. Husain, CEO COMSATS Internet Services (CIS); and Dr. Tariq-ur-Rahman, Ex-Chairman PCST. Other officials of COMSATS Secretariat present in the meeting included Dr. Hasibullah, Advisor (IA); Mr. M. Bilal Chouhan, Dy. Director (A&E); and Mr. Amanullah Khattak, Dy. Director (F&A).

E.D. COMSATS Chairing the Management Committee Meeting at COMSATS Secretariat

Major points of discussion of the meeting were: the Executive Director's visits to COMSATS' Member States and Centres of Excellence; preparations for the upcoming Commission Meeting; follow-up on the 14th Coordinating Council meeting and preparations for the 15th meeting; and administrative and financial affairs of COMSATS. A detailed presentation was made on the highlights of the activities of COMSATS Secretariat from April to December 2011 by the Advisor (Programmes) COMSATS. In his presentation, Mr. Hussain updated the participants of the meeting regarding COMSATS' secretarial functions performed during the reporting period, campaign for enhancing COMSATS' membership and Network of Centres of Excellence; COMSATS' assistance to the Government of Pakistan in formulating its National Science, Technology and Innovation (ST&I) Policy; capacity-building events organized/ sponsored by COMSATS in its member countries; and activities of COMSATS' International Thematic Research Groups (ITRGs). On the occasion, the Rector CIIT and the CEO CIS also gave briefings on their institutions' progress over the past few months.

AMBASSADOR OF EGYPT IN ISLAMABAD VISITS COMSATS SECRETARIAT

H.E. Mr. Saiid Mohamed Alsaiid Hindam, Ambassador of Arab Republic of Egypt in Pakistan, accompanied by Mr. Hazem El Shorbagy, Third Secretary Embassy of Egypt, visited COMSATS Secretariat on November 21, 2011, on invitation of the Executive Director COMSATS. Advisor (Programmes) and Sr. Assistant Director (Systems) of COMSATS Secretariat were also present during the meeting.

The Executive Director briefed the Ambassador about COMSATS' mission, scope, and projects and programmes. Mr. Hindam was also apprised about the efforts being made

for South-South cooperation by means of collaboration between COMSATS' Member States and Centres of Excellence. A brief presentation was made on the workshop on repair and maintenance of scientific equipments recently organized in Egypt by COMSATS in collaboration with ISESCO. Informing the Ambassador about the membership of COMSATS' Centre of Excellence, National Research Centre, in various ITRGs of COMSATS, Egypt's support was acknowledged.

The Ambassador thanked the Executive Director for inviting him to COMSATS Secretariat and pledged to do all in his capacity to ensure active participation of Egypt in the upcoming meetings of COMSATS' statutory bodies, as well as its international projects and programmes.

COMSATS INTERNET SERVICES HOLDS CORPORATE EVENT TO CELEBRATE ITS 15TH ANNIVERSARY

COMSATS Internet Services (CIS) celebrated its "15 Years of Internet Excellence" by holding Corporate Event in Islamabad. Chief Guest on the occasion was Dr. Muhammad Yasin, Chairman Pakistan Telecom Authority (PTA). Other distinguished guests included the Executive Director COMSATS and Mr. Parvez Ahmed Butt, Founding Executive Director COMSATS. The event was attended by a large gathering of customers and clients of CIS, as well as its senior officials and employees.

The CEO CIS, Mr. Asim Shahryar Husain, gave a presentation on the present and future plans of CIS. He highlighted the achievements of CIS during 2011 including upgradation of CIS' data center and training center; new offices in Karachi, Peshawar, and Lahore; and launching of seven new product brands. Speaking on the occasion, the Executive Director COMSATS noted that the role of CIS is to advance COMSATS' mission of using technology for social services. The Chief guest congratulated CIS on completing its fifteen years of Internet operations in Pakistan and acknowledged its rich history and customer portfolio.

Guests of honour at the Corporate Event of CIS

OBITUARY OF DR. MAZHAR MAHMOOD QURASHI, CONSULTANT (PUBLICATIONS), COMSATS SECRETARIAT

COMSATS Secretariat bemoans the sad demise of its Consultant (Publications) – a devout scholar, physicist and philanthropist.

Dr. Mazhar Mahmood Qurashi, 86, died on November 21, 2011. Since 1996, he has been associated with COMSATS' Journal, Science Vision, as its Chief Editor, and has also made several contributions in the form of scholarly papers.

Born on October 8, 1925, in Gujranwala, Punjab, British India (now Pakistan), Dr. Qurashi attained his B.A. Hons. (1942) and M.Sc. in Physics (1944) from University of the Punjab (Lahore), and Ph.D. (1949) in Experimental Solid-State Physics from Manchester University (U.K). The Manchester University awarded him D.Sc. in 1962 on the basis of his fifty research papers, published from 1949 to 1962.

Dr. Qurashi started his professional career at PCSIR as research officer in 1950 and served the Council in various capacities till retirement as Chief Scientist and Member (Science) in 1985. He also served Ministry of Defense, Government of Pakistan as Chief Scientist & Scientific Adviser (1963-68); Appropriate Technology Development Organization as Director-General and later as Vice-Chairman (1976-1980); and Pakistan Council for Science and Technology as Director of Studies (1980-1983). Building up of four of the premier scientific organizations of Pakistan, from 1950 to 1985, including the National Physical and Standards Laboratory (NPSL), and National Institute of Electronics (NIE), is considered one of his important achievements.

As a science scholar, Dr. Qurashi had to his credit over 200 research papers on various topics in Solid-State and Applied Physics; Physical Chemistry (structure of liquids); Scientometrics; and History & Philosophy of Science, of which twenty-two were published in British, Canadian and other International Journals. He also published 17 monographs on various themes of 'Science & Technology and its Social Interactions, especially in the Islamic World. Dr. Qurashi was an elected Fellow of the Institute of Physics in U.K. (1961); Fellow of Islamic World Academy of Sciences (elected in 1988); and Fellow of Pakistan Academy of Sciences (PAS).

In recognition of his scientific excellence and meritorious research work, Dr. Qurashi was honored with national and international awards and medallions, including: Open Gold Medal of Pakistan Academy of Sciences (1972); PCSIR Award (2002); and Sitara-i-Imtiaz by the President of Pakistan (1991). His biographies were included in 'Who's Who in the World' (1980-81 & 1990-92), 'Men of Achievement' (1982), 'Who's Who of Intellectuals' (1983), and '5,000 Personalities of the World' (1985).

COMSATS will always remember the commitment and devotion of Dr. M. M. Qurashi. May his soul rest in peace!

SPECIAL REPORTS OF COMSATS' SPONSORED INTERNATIONAL EVENTS

COMSATS' S&T capacity-building events constitute a significant component of its development activities for the countries of the South. During November to December 2011, COMSATS organized five scientific events in collaboration with its partner organizations that attempted to meet the current scientific and technological needs of the developing countries. Three of these, held in Malaysia, Pakistan, and UAE, focused on various dimensions of Nanotechnology, while the other two, held in Egypt and Pakistan, covered aspects related to the repair and maintenance of scientific equipments and climate change, respectively. A brief coverage of these events is as follows:

INTERNATIONAL CONFERENCE ON NANOMATERIALS AND NANO ETHICS (ICNNE) LAHORE, PAKISTAN (DECEMBER 1-3, 2011)

The International Conference on Nanomaterials and Nano Ethics was held at COMSATS Institute of Information Technology (CIIT), Lahore, Pakistan, on 1-3 December 2011. The Conference was jointly organized by COMSATS and CIIT (Lahore Campus) in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO); OIC's Standing Committee on Scientific and Technological Cooperation (COMSTECH); Higher Education Commission (HEC) of Pakistan; and National Science Foundation (NSF) and University of Delaware, USA.

The Conference focused on the following themes: nanomaterials for energy and water applications; nanomaterials for environmental remediation; nanosensors for the environment; fate and transport of nanomaterials in the environment; nanoethics/scientific ethics; environmental ethics; and nano risk framework.

The Conference was inaugurated by Dr. Mukhtar Ahmed, Deputy Director General ISESCO. Also present at the opening ceremony were: Dr. Imtinan Elahi Qureshi, Executive Director COMSATS; Dr. Haroon Rashid, Director External Campuses CIIT; Dr. Mahmood A. Bodla, Director CIIT Lahore Campus; Dr. Anwar Saadat Siddiqi, Advisor CIIT; and Prof. Ismat Shah, NSF. In his opening remarks, the Chief Guest highlighted the timeliness of the Conference in the wake of the Islamic Countries' need to: explore the state-of-the-art achievements in nanotechnology; define research priorities; and create opportunities for interdisciplinary

(L→R) Dr. Haroon Rashid, Dr. Imtinan Elahi Qureshi, and Dr. Mukhtar Ahmed at the Inaugural Session

"Recent advances in research on nanoscience and technology in the developing world, in general, and in Pakistan, in particular, have made it essential that practitioners of this science be given the opportunity to become knowledgeable in the concept of ethics. Ideally, this knowledge ought to be made available at all stages of scientific education. However, since this is not the case, at a minimum scientists using nanotechnology ought to be trained in the concept of ethics."

Prof. Dr. Ismat Shah, NSF, USA

"Nanotechnology promises to make valuable contribution towards socio-economic development in the developing countries. ...(The Conference is an effective means, inter alia, to) facilitate dialogue between the ethicists and scientists/researchers to address the ethical and environmental concerns that are inherent in the field of nanotechnology."

Dr. Imtinan Elahi Qureshi, Executive Director COMSATS

"...Nanotechnology could help the developing countries meet their development needs, filling the gap between rich and poor countries....the benefits of nanotechnology are obviously countless and are considered as the most prominent scientific achievements of contemporary human civilization, and it (also) represents the focus of scientific research centres in major universities and research centres."

Dr. Mukhtar Ahmed, Deputy Director General ISESCO

Plenary Session on Electron Transport in Graphene

Participants of ICNNE 2011

collaboration at local, regional and international levels. Dr. Qureshi appreciated the growing cooperation between ISESCO and COMSATS that is resulting in making strong efforts towards the capacity-building of S&T organizations in common member countries.

This Conference aimed to provide avenue for researchers to discuss recent discoveries and their industrial applications. About 200 participants belonging to various academic and research institutions; international, non-governmental, and inter-governmental organizations; and representatives of business and industry, attended the meeting.

The technical programme of the three-day event consisted of 11 technical sessions and 45 scholarly contributions. These contributions comprised 30 invited presentations, 5 contributive presentations, as well as 8 oral and 2 poster presentations by students. The invited speakers came from Bangladesh, China, Egypt, France, Indonesia, Iran, Italy, Malaysia, Saudi Arabia, South Korea, Syria, and United States of America. Among them, some keynote presentations were made by the world-renowned experts, who focused in cutting edge and emerging nanomaterial-based technologies and their applications, such as biosensing and bioimaging, photovoltaic devices, semiconductor nanowires, biotherapeutics, fuel cells, nanomaterials for water purification and energy management and other structural applications.

The Conference proved effective in terms of:

- Bringing together subject experts, researchers, academicians, environmentalists, and representatives from several relevant local and regional organizations to deliberate upon the current status, unmet needs, challenges, and opportunities in the field of nanotechnology from ethical and social perspectives;
- Giving exposure to and knowledge sharing amongst scientists from 12 countries;
- Exploring the scientific aspects of nanotechnology that are relevant to the environment; and
- Highlighting the concepts of ethics in general and environmental ethics in particular that pertain to nanotechnology.

Earlier, a similar Conference was organized in UAE.

3RD INTERNATIONAL CONFERENCE ON NANOTECHNOLOGY (ICN), AL AIN, UAE (NOVEMBER 28-30, 2011)

The 3rd International Conference on Nanotechnology was held on November 28-30, 2011, at United Arab Emirates University (UAEU), Al Ain, UAE. Prof. Dr. Yousef Haik, Faculty of Engineering UAEU, was the principal host of the event that had over 150 attendees from Bangladesh, China, Egypt, Iran, India, Japan, Malaysia, Pakistan, Saudi Arabia Syria, and the United States of America.

The Conference was jointly organized by COMSATS, ISESCO, UAEU, the International Association for Sharing Knowledge and Sustainability (IASKS), Arab Academy of Sciences (AAS), and National Science Foundation (NSF), USA. The event was inaugurated by His Highness Sheikh Nahyan bin Mubarak Al Nahyan, Minister of Higher Education and Scientific Research, UAE, and the Chancellor of the United Arab Emirates University, UAE. H.E. Sheikh Nahyan acknowledged that social, moral and ethical issues are associated with emerging nanotechnologies.

The deliberations of the Conference revolved around the following themes:

a) Emerging research that focuses on the applications of micro and nano technologies;

His Excellency Sheikh Nahyan (Chief Guest) addressing the inaugural session

> "We are already aware of the way in which the moral beliefs currently held by some segments of population may be at odds with matters relating to nanotechnologies, such as construction of artificial organisms, biological weapons development, stem cell research and genetic modification of human beings. …But none of these issues should deter us from our objectives. With social good as our objective, we must account for all issues bearing on that objective and for the possible effect of any particular field of nanotechnology".
>
> ***H.E. Sheikh Nahyan bin Mubarak Al Nahyan***
> ***Minister of Higher Education and***
> ***Scientific Research, UAE***

b) Venture investment that takes the results from laboratory to industry; and

c) Development of feasibility studies at universities and research agencies for nanotechnology related projects.

The keynote address on "The Nano-World as a Manufacturing Playground: The Vision of Nanomanufacturing at NSF" was delivered by Dr. Charalabos C. Doumanidis, NSF Nanomanufacturing Program Director. He elaborated on the current designs and nano-manufacturing investigations in probabilistic branching tree-structured materials, such as nanocomposite layered foils by ultrasonic joining; targeted drug delivery via magnetic micelle nanocapsules; and net-shaping and metrology.

One of the highlights of the event was a Keynote Address titled "III-V Quantum dot Lasers: Progress and Challenges", which was given by Dr. Mohamed Henini, Professor of Applied Physics at Nottingham University, UK, who is ranked amongst one of the top 25 authors on quantum dots (QDs). He described the properties of the QDs and the progress in the development of QD lasers.

Dr. Saeed Sarkar of the Iran Nanotechnology Initiative Council delivered a concise presentation titled "A Glance at Iran's Nanotechnology Activities and Achievements". He gave insight into Iran's national nanotechnology development-plan referred to as "Future Strategy", and shared with participants the objectives, targets, status, achievements and impact obtained by the implementation of the strategic plan. Dr. H. El Ghandoor of Ain Shams University, Egypt, presented his work on developing a new technique for detecting the size of polymeric nanoparticles, namely chitosan polymer via double beam speckle interferometry. This technique would be effective in cancer treatment by means of a better anticancer drug delivery. Dr. Sharif Hossein of Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, made a presentation on formulation of siRNA/carbonate apatite nano-composites for efficient silencing of cancer related genes. He noted that the new method of siRNA delivery into the cell reported in his studies is highly promising for pre-clinical and clinical cancer therapy.

Dr. Fawzy Mahmoud of NRC, showcased his work on developing an efficient technique, homemade spray pyrolysis for solar cell material preparation. Dr. Tehseen Raza of University of IOWA, USA, in her presentation, demonstrated how the new devices based on electron spin can revolutionize data storage and potentially serve as "Universal Memory". Dr. Mark Greene of University of Delaware, USA, elaborated on the ethical issues of the Nanotechnology. Dr. Thomas Powers of University of Delaware, USA, suggested a new framework for making decisions about nanotechnology development in order to address the uncertainty about outcomes, while still allowing scientific and technological progress. Dr. Zafar Iqbal of COMSATS Institute of Information Technology, Pakistan, discussed the novel applications of nanotechnology in photovoltaics. This overview presentation included many new concepts and technologies with an update on the exciting recent developments in alternate energy resource.

Some of the participants during the technical session

A speaker delivering his lecture at a plenary session

Dr. Dato M. Yahaya of Universiti Kebangsaan Malaysia (UKM), Malaysia, highlighted some scientific challenges related with the use of nanostructures in photovoltaics, such as charge transport phenomena, surface recombination, and intricacies in preparation techniques.

The Conference resulted in:

- Assessing nano and micro technologies for emerging applications and its prospects in the region;
- Sharing research results in nanosciences; and
- Discussing new technologies, and related collaborative research and business developments.

IASKS organized an exhibition that was held in parallel with this International Conference. A total of 5 companies and organizations, besides IASKS set up stalls during the exhibition to showcase various products.

INTERNATIONAL WORKSHOP ON NANOTECHNOLOGY IN THE EDGE OF CONVERGENCE, BANGI, MALAYSIA (NOVEMBER 24-27, 2011)

The International Workshop on 'Nanotechnology in the Edge of Convergence' was organized by COMSATS, in collaboration with the Institute of Microengineering and Nanoelectronics (IMEN), Malaysia, and the Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre), India, on November 24-27, 2011, at Puri Pujangga, Universiti Kebangsaan Malaysia (UKM), Malaysia. The event was co-sponsored by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

The event was inaugurated at UKM, on November 24, 2011, in the presence of Prof. Dato' Dr. Burhanuddin Yeop Majlis,

Prof. Dr. Halimaton Hamdan delivering Keynote Address

A technical session of the workshop in progress

Director IMEN; Prof. Datuk Dr. Noor Azlan Ghazali, Deputy Vice Chancellor UKM; Prof. Dr. Arun P. Kulshreshtha, Director NAM S&T Centre; and Dr. Arshad Saleem Bhatti, Dean Faculty of Science, CIIT, Pakistan. A highlight of the Inaugural Ceremony was the keynote address by Prof. Dr. Halimaton Hamdan, Undersecretary of National Nanotechnology Directorate, Ministry of Science, Technology and Innovation (MOSTI), Govt. of Malaysia, titled "NanoMalaysia Programme and Way Forward". Moreover, brief remarks on the event were given by Mr. Mohd. Zulkifli Hashim, Executive Secretary, Malaysian National Commission for UNESCO.

Prof. Dr. Burhanuddin Yeop Majlis considered the joint organization of the event as an opportunity to expand UKM's network. Prof. Dr. Arun believed that the event will open new avenues of fundamental research and application oriented programmes in the developing countries. In his message read out at the occasion, the Executive Director COMSATS appreciated the efforts made by the organizing committees

Participants of the International Workshop on 'Nanotechnology in the Edge of Convergence', Bangi, Selangor, Malaysia

BANGI RECOMMENDATIONS ON NANOTECHNOLOGY

We, the scientists, academics, professionals, engineers, scientific managers and policy makers of the non-aligned and other developing countries from Bangladesh, Bulgaria, Cambodia, Egypt, India, Indonesia, Iraq, Kenya, Malaysia, Malawi, Mauritius, Morocco, Myanmar, Nepal, Pakistan, Sudan, Tunisia, Uganda and Vietnam;

THANK:

- The Centre for Science and Technology of the Non-aligned and Other Developing Countries (NAM S&T Centre), Commission on Science and Technology for Sustainable Development in the South (COMSATS), Islamabad, Pakistan and the Institute of Microengineering and Nanoelectronics (IMEN), Universiti Kebangsaan Malaysia (UKM), Malaysia, the joint hosts of the International Workshop on 'Nanotechnology in the Edge of Convergence' held at Puri Pujangga, UKM, Malaysia on 24-27 November 2011;
- Our respective governments, United Nations Educational, Scientific and Cultural Organization (UNESCO) and other sponsors who have made our participation at this very important meeting possible;

AND

PLACE ON RECORD our appreciation to the Ministry of Higher Education (MOHE), Ministry of Science, Technology & Innovation (MOSTI) of Malaysia and the Institute of Microengineering and Nanoelectronics (IMEN), Universiti Kebangsaan Malaysia (UKM) for providing the interactive platform, excellent ambience for the meeting, fine arrangements and kind hospitality;

REALISING THAT the promotion of Nanoscience and Nanotechnology and their applications is presently becoming a major conduit to achieve the technical and economic prosperity of all the countries, including the Non Aligned Member States and other developing nations. Besides, there is a great need to educate younger generations about the science and engineering at nanoscale.

HAVING RECOGNISED that Nanoscience and Nanotechnology cut across almost all the disciplines such as agriculture and food technology, biotechnology, health, medicine, new materials, energy, water and air purification, among others. It is a new perspective with which the developing countries can create wealth to enhance the quality of life.

HAVING EXTENSIVELY DELIBERATED ON the issues related to the Nanoscience and Nanotechnology in the developing countries, the specific issues encompassing:

i. Status and prospects of Nanoscience and Nanotechnology in developing countries,
ii. Nanotechnology policy, governance, strategy, human resource and market development,
iii. Implications of Nanotechnology to the health and environmental risks,
iv. Implications of Nanotechnology to the ethical, legal and social issues,
v. Necessary infrastructure to support R&D on Nanoscience and Nanotechnology,
vi. Applications of Nanotechnology,
vii. Developing standards for analysis/quality control of nanoproducts, and
viii. Enhancing the regional and global networking in Nanoscience and Nanotechnology activities.

UNANIMOUSLY RECOMMEND THAT:

- Nanoscience and Nanotechnology should be made a major area of development to achieve the technical and economical progress.
- Developing countries should be convinced to exhibit commitment (political will, financial and human resources) towards research, development, application and commercialisation of nanoproducts with the involvement of concerned stakeholders.
- Developing countries should adopt a holistic approach to provide adequate resources for training and creating awareness amongst policy makers, industry partners and the public at large about the importance of Nanotechnology, not just for its inherent value, but also for its role in alleviating poverty and wealth creation.
- The Governments need to prepare vision document for the advancement of Nanoscience and Nanotechnology covering all aspects like education, R&D applications and implication of this technology. In this regard, scientific papers, reports or documents etc. should be shared with developing countries (for example, via internet or other means).
- Regulatory bodies should be established to ensure the safe use and applications of nano-containing products to avoid health and environmental hazards. Since products have already come in the market, it is the need of the hour.
- Safety and precautionary measures for scientists and engineers working in the development of Nanoscience and Nanotechnology in private and public sectors, R&D institutions and universities should be defined and followed strictly.
- Nanotechnology based curriculum should be developed and integrated from high school to university to facilitate the transformation of research to innovation in this emerging area.
- Web portals may be designed for developing countries serving purposes like education and awareness.
- Advantage may be taken from established Centres of Excellence in developed countries as well as in developing countries for short term training, channelizing and enhancing knowledge and learning capacity.
- Nanotechnology expert teams should be formed with the involvement of scientists, industrialists and policy makers for the formulation of new plans and policies and governance.
- There is a pressing need of public engagement in formulation of regulation to ensure transparent, inclusive and equitable development of nanotechnology and to avoid the previously made mistakes with biotechnology, e.g. in the case of GM crops.
- Short, medium and long term plans should be prepared to create continuous innovative capacity in Nanotechnology.
- Multilateral and bilateral collaborations should be encouraged to enhance global partnerships.

Thus, resolved and adopted on the 27th November 2011 at Bangi, Malaysia.

of the event and considered the event an important platform that brought together relevant scientists and researchers to share ideas, expertise and knowledge related to the fields of nano-science and nano-technology.

Twelve Malaysian and 25 international experts/scientists made presentations on the theme of the workshop. Apart from the local and international speakers, about 50 Malaysian scientists, researchers and students participated in the event. The international speakers of the event belonged to Bangladesh, Bulgaria, Cambodia, Egypt, India, Indonesia, Iraq, Kenya, Malawi, Mauritius, Morocco, Myanmar, Nepal, Pakistan, Sudan, Tunisia, Uganda, and Vietnam.

The deliberations of the event were spread over four days and comprised six technical sessions and visits to UKM and IMEN. The event also included a Poster Presentation Session, in which nine posters presented the work of Malaysian scholars. The experts from various developing countries extensively deliberated upon the status and prospects of nanoscience and nanotechnology in developing countries; issues related to nanotechnology policy development, human resource development and market development; implications of nanotechnology to the health and environment; implications of nanotechnology to the ethical, legal and social issues; development of necessary infrastructure to support R&D on nanoscience and nanotechnology; future applications of nanotechnology; development of standards for analysis/quality control of nano-products; and enhancing the regional and global networking in nanoscience and nanotechnology activities. The experts noted that the promotion of nanoscience and nanotechnology and their applications is becoming a major conduit to achieve technical and economic prosperity.

The deliberations and debates of the participating scholars resulted in the formulation of 'Bangi Recommendations on Nanotechnology in the Edge of Convergence for the Developing Countries' (Page-9) that were later adopted during the Workshop's Closing Session.

INTERNATIONAL WORKSHOP ON CLIMATE CHANGE AND SUSTAINABLE MANAGEMENT OF WATER RESOURCES IN THE ASIA-PACIFIC REGION, ISLAMABAD, PAKISTAN (NOVEMBER 22-24, 2011)

The three-day International Workshop on "Climate Change and Sustainable Management of Water Resources in the Asia-Pacific Region" was organized by COMSATS, in collaboration with COMSATS Institute of Information Technology (CIIT), Islamabad, on November 22-24, 2011, at the National Institute of Banking and Finance (NIBAF), Islamabad, Pakistan. The event also had the patronage of the United Nations Educational, Scientific and Cultural Organization (UNESCO); the Higher Education Commission (HEC) of Pakistan; and the German Academic Exchange Service (DAAD).

The Inaugural Ceremony of the event, which was held on November 22, 2011, was presided by Dr. S. M. Junaid Zaidi, Rector CIIT, and chaired by Dr. Shahina Tariq, Chairperson, Department of Meteorology, CIIT, Islamabad. The distinguished guests at the Inaugural Ceremony included Dr. Qamar-uz-Zaman Chaudhry, Advisor (MET & Climate Affairs), Government of Pakistan; Mr. Tajammul Hussain, Advisor (Programmes) COMSATS; and Dr. Amir H. Malik, HEC Foreign Professor at CIIT. The highlights of the ceremony were an Inaugural Address by the Rector CIIT, a

Rector COMSATS Institute of Information Technology delivering the Inaugural Address

message from the Executive Director COMSATS, a special lecture on the theme of the workshop by Dr. Qamar-uz-Zaman Chaudhry, Introductory Remarks by Dr. Amir H. Malik, and a vote of thanks by Dr. Shahina Tariq.

During his Inaugural Address, Dr. Zaidi stressed the significance of information-sharing for capacity-building and reassured CIIT's efforts for the same. In his message, read out on the occasion, the Executive Director COMSATS opined that the countries of the South are at a greater risk due to their heavy reliance on climate-sensitive sectors, such as agriculture, livestock and fisheries. He stressed that the developing countries must remain conscious of such risks while formulating relevant policies and development projects. Dr. Qamar-uz-Zaman, in his special lecture, discussed the formulation of Pakistan's 'National Climate Change Policy' and 'National Climate Change Strategy and Action Plan'. In this regard, Dr. Qamar-uz-Zaman highlighted the key areas and sectors, and relevant policy measures.

The event consisted of 4 technical sessions and covered a wide range of topics relating to climate change and water resource management, including: the generalized PV-View and their applications in the severe weather events; latitudinal precipitation characteristics; influence of global climate change on medicinal, aromatic and coastal plants; damage assessment and policy implementation; role of remote sensing and GIS; climate crisis and e-adaptation; C3 plant expansion by increasing CO_2 concentration; impact of land-use change on precipitation-pattern by using Regional Climate Model Version-3 (RegCM3); relationship between climate change and socio-natural activities, etc.

The workshop also comprised five invited lectures and twenty five presentations. The event was attended by a total of 93 (15 international and 78 local) subject experts/officials. The international participants/speakers belonged to Sri Lanka, China, Iran, Bangladesh, Malaysia, Sudan and Germany. The local subject experts/officials belonged to various public/private universities, R&D organizations, and Government departments and NGOs of Pakistan.

It was noted by the experts during the meeting that the present concentration of CO_2 in the atmosphere is highest in the history and has primarily been caused due to the industrial revolution and uncontrolled use of fossil fuels, land degradation and deforestation, principally, in the tropical rainforest regions. The experts also noted that the dramatic shifts in weather can cause mass destruction and leave vast populations of the Asia-Pacific region amenable to large scale resettlement to higher grounds. As opposed to the usual practice of water resource managers, focusing only on surface-water storage through large dams and barrages, an

Audience at the Inauguration Ceremony of the Workshop

Participants of the International Workshop on 'Climate Change and Sustainable Management of Water Resources in the Asia-Pacific Region'

effective future strategy for water-resource management was proposed that includes utilization of water from all sources, including wet lands, link canals for inter transfer of water, rain harvesting (both rural and urban), village ponding and roof-top storage, etc.

The international workshop strengthened linkages amongst the participating academicians, researchers and policymakers/implementers from the developing countries, and resulted in their capacity-building for effectively adapting and mitigating the deleterious affects of climate change on water resources in their respective countries .

The event provided a forum to the researchers, scientists, government officials and students, from various developing and developed countries, especially from the Asia-Pacific region, to

- discuss the issues and challenges posed by climate change in planning and management of water resources; and

- exchange knowledge, expertise and views in the areas of groundwater modeling; snow and glaciers' monitoring and assessment; remote sensing and GIS applications; modeling techniques for poorly gauged river basins in the developing countries; flood and drought forecasting and mitigation; and socio-economic aspects of climate change.

COMSATS-ISESCO WORKSHOP ON REPAIR AND MAINTENANCE OF SCIENTIFIC EQUIPMENTS, CAIRO, EGYPT (NOVEMBER 13-17, 2011)

The national workshop on "Repair and Maintenance of Scientific Engineering Equipments in Universities, Research Institutions and Small Scale Industries" concluded on November 17, 2011, after training more than twenty seven participants including engineers, technicians, researchers and students of various institutions from Egypt. The workshop that started on November 13, 2011, was organized by COMSATS, ISESCO and the National Research Centre (NRC), Egypt, under the COMSATS-ISESCO Cooperation Programme-2011.

This event was a continuation of the joint activity on same theme that started back in Sudan (2004), followed by similar national events in Sudan, Syria and Senegal. The main objective of this workshop was to develop indigenous capacities of Egyptian scientists and institutions to be able to repair and maintain their scientific equipment and keep them operational, through hands-on training.

The inaugural ceremony of the workshop was held on November 13, 2011, at NRC, and was addressed by Prof. Dr. Ashraf Shaalan, President NRC; Prof. Dr. Ahmed Shaban, Vice President NRC; and Prof. Dr. Kamal Ahmed Abed, Head of Mechanical Engineering Department of NRC. COMSATS and ISESCO were represented by Mr. Nisar Ahmad, Senior Assistant Director (Systems) COMSATS, who also read out messages from the Director General ISESCO and Executive Director COMSATS, respectively. Other distinguished guests of the occasion included, Prof. Dr. Osama El-Shabrawy, Former President NRC; Dr. Matsushita Yoshihisa of Japan International Cooperation Agency (JICA); representatives of Egypt-UNESCO World Heritage Centre; Egypt-Japan University of Science and Technology (E-JUST) and government ministries and agencies; as well as representatives from the private sector of Egypt, including pharmaceuticals and academia.

In his Welcome Address, Prof. Abed lauded the efforts made by COMSATS and ISESCO Center for Promotion of Scientific Research (ICPSR) for organizing the workshop and also highlighted the importance of the workshop. Speaking on the occasion, Prof. Shaalan highlighted the ever-increasing role of repair and maintenance of scientific

(L→R) Prof. Kamal Abed, Mr. Nisar Ahmad, Prof. Ashraf Shaalan and Prof. Ahmad Shaban at the Inaugural Ceremony

Visit to the XRF equipment Lab.

equipments to achieve operational efficiency viz. R&D work in universities and R&D institutions. Prof. Shaban appreciated COMSATS and ISESCO for organizing the workshop at NRC. The message of the Executive Director COMSATS highlighted the need of the repair and maintenance in smooth operation of the R&D activities in universities, research institutions and small scale industries. Highlighting similar joint activities held in other OIC Member States by COMSATS in the past and those held in Egypt over the years, Dr. Qureshi hoped for the success of the workshop and that it proves to be a good learning experience for the participating institutions and individuals.

Emphasizing the workshop theme and related issues that need to be addressed at the national and regional levels, H.E. Dr. Abdulaziz Othman Altwaijri, Director General ISESCO, deemed it important to strategize for effective management of spare parts to maintain, ensure and strengthen the reliability of the machines in order to achieve continuous production and avoid costly downtime in the maintenance of scientific equipment. Acknowledging the contribution of COMSATS and NRC for holding the workshop, Dr. Altwaijri expressed special gratitude towards the Executive Director COMSATS, for his valuable support towards the event. He expressed his satisfaction over ISESCO-COMSATS collaboration that started in 2004 and reaffirmed the participants of ISESCO's readiness to increase the number of such workshops in the OIC Member States.

Two subject-experts from the Pakistan Council for Scientific and Industrial Research (PCSIR), Pakistan, Mr. Arif Karim and Mr. Faisal Ghazanfar, imparted training to the Egyptian scientists, engineers and technicians during the 10 technical sessions of the workshops on various topics including: PCR Systems; Gas Chromatographic Systems; HPLC Systems; Mass Spectroscopy; Mass Detectors and Mechanics; Hands-on Repair Training (MS/GC/HPLC); Thermal Analyzers; High Temperature Pressure Reactor (HTPR); and Pressure Composition Isotherm Measurement Systems. The sessions comprised hands-on training complemented by lectures on the theme of the workshop. To consolidate the trainees' learning, visits were made to various labs of NRC including XRF Lab, Thermal Analyzer Lab and Pressure Composition Isotherm Lab.

The workshop achieved its objectives by:

- Developing the indigenous capacity of Egyptian scientific institutions to repair their equipment, by training master trainers;
- Enabling the participants to address the maintenance issues of important and expensive scientific equipment

One of the experts of the workshop repairing the equipment

Participants of the Workshop

on their own, thus facilitating the local industry and research labs.

Conclusions and Recommendations of the workshop on Repair and Maintenance

The following recommendations were made after the successful conclusion of the workshop:

1. To establish an annual International Workshop on Repair and Maintenance of Scientific Engineering Equipments at the National Research Centre, Egypt, in collaboration with ISESCO and COMSATS, and any other organization;

2. To negotiate the possibility of obtaining Scholarships for training young researchers and assistants in Pakistan for 2 to 3 months (experience transfer);

3. To consider NRC as a focal point for experienced specialists in maintenance of scientific equipments. The trained young staff will be considered as resource persons for repair and maintenance of scientific equipments.

Taking the advantage of experts' presence, scientists and engineers from different Labs of NRC, reported a number of faulty instruments that were lying idle for long periods of time due to unavailability of technical expertise to repairs those.

The COMSATS' technical team, in addition to its primary job of conducting the workshop, endeavoured to rectify/identify faults in the reported scientific equipments of NRC. It was aimed to repair the faulty scientific instrument where possible, or identify actual fault, and train the concerned engineers to repair the instrument by following the respective repair-procedure(s).

Dr. Osama El-Shabrawy giving away a 'Certificate of Participation'

For COMSATS, the year 2011 concluded with very eventful two months in terms of developmental initiatives through capacity building. The collaborative events of COMSATS, covered in this section of COMSATS Newsletter, have not only served as means to build the capacity of individuals and institutions of the participating countries in select fields of science and technology, but also strengthened COMSATS' cooperative links with the collaborative organizations/ institutions, such as ISESCO, COMSTECH, NSF, and NAM S&T Centre, among others. In short, these activities have set the stage for more cooperative ventures for the year 2012 aimed at the socio-economic uplift of the developing countries.

Consultancy Provided by COMSATS' Technical Team to Repair Scientific Equipment

S#	Instrument	Identification and Rectification of Faults/Problems
1	Pressure Composition Isotherm (PCI), AMC, USA	Problem was in the low temperature measurement system. It was successfully traced after thorough inspection. The problem was due to the faulty/corroded sensor (Diode based temperature sensor). It was removed and pointed out to the concerned engineer for replacement.
2	Gas Chromatograph Model: 6890N, Agilent Technology	There was an error of miss-alignment of auto-sampler, due to which the whole instrument was non-functional. The electromechanical alignment and its communication with the software were successfully re-established and the equipment was made operative.
3	HPLC Model: 717, Waters	There was a problem in the computer software. Some efforts were made to fix the software. It was suggested to the concerned staff to arrange for the original software and get it installed for smooth functioning.
4	PCR System; Model: 9600, Perkin Elmer	After thorough inspection it was found that the main controller was missing. The concerned staff was asked to arrange for the missing card to make the system operational.

ACTIVITIES/NEWS OF COMSATS' CENTRES OF EXCELLENCE

ICCBS-PAKISTAN AND AL-FARABI KAZAKHSTAN NATIONAL UNIVERSITY REACH COOPERATIVE AGREEMENT

The Hussain Ebrahim Jamal (H.E.J) Research Institute of Chemistry of the International Center for Chemical and Biological Sciences (ICCBS) has reached an agreement on education and science cooperation with Al-Farabi Kazakhstan National University, Republic of Kazakhstan. The Director ICCBS, Prof. Dr. M. Iqbal Choudhary and the Rector of Al-Farabi Kazakhstan National University, Prof. Dr. Mutanov G., signed a Memorandum of Understanding on behalf of their respective institutions during the former's recent visit to Kazakhstan.

As per the agreement, both the institutions have agreed to make mutual efforts for improvement of work organization in their universities, as well as exchange of information on the problems of scientific and organizational aspects. Both institutions will promote exchange of students and teachers in the area of education and research, and work on joint research projects. A joint Ph.D. programme was also agreed to be developed with an aim to enhance mutual scientific cooperation. The collaborative activities to be covered under this agreement may include faculty and research staff exchanges; studying abroad programme; collaborative research programmes including the exchange of voucher samples and natural product extracts; and joint seminars, workshops, and service programmes.

LECTURES ON HEALTH ISSUES ORGANIZED BY ICCBS

As a part of series of popular lectures for public awareness on common diseases in Pakistan, Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD), and the Virtual Education Project Pakistan (VEPP), arranged two lectures at the Latif Ebrahim Jamal (LEJ) National Science Information Centre of ICCBS.

The first lecture was given by Dr. Rizwana Waraich, Assistant Professor at PCMD, on November 05, 2011. The lecture titled "Obesity-Related Diseases and Prevention" showed that Pakistan is one of those countries where obesity and diabetes are increasing at alarming rate; one out of every four Pakistanis is either obese or overweight. Overweight and obesity are the fifth leading risk for global deaths. At least 2.8 million adults die each year as a result of being overweight or obese. Five out of 10 fatal diseases are associated with obesity, including cardiovascular disease, diabetes and cancer.

On December 31, 2011, another lecture, on "Cancer: Signs, Symptoms, Diagnosis and Treatment in the Light of Modern Research", was given by Dr. Huma Rasheed of PCMD. Health professionals, students, research scholars, NGO representatives and general public attended these lectures.

CIIT-PAKISTAN ORGANIZES FIT 2011

COMSATS Institute of Information Technology, Abbottabad, Pakistan, organized 9th International Conference on "Frontiers of Information Technology" (FIT 2011) on December 19-21, 2011, in Islamabad, Pakistan. This international conference is being organized annually for the last 8 years.

The focus areas included Communication and Networking, IT Security, Internet Governance, Grid Computing, Artificial Intelligence, Software Engineering, Computational Science, Computer Graphics, and Image Processing & Pattern Recognition.

Besides oral presentation of 64 technical papers and 4 tutorials, 36 talks of renowned international and national speakers from leading universities were also part of the programme. Five Ph.D Symposia were also a part of the conference.

For this event, CIIT received 235 research papers from different countries, out of which 64 were selected for oral presentation after a thorough blind review process yielding an acceptance rate of 27 %.

The proceedings of the conference would be included in the IEEE Digital Library. The extended version of the key papers will be published in selected journals.

Guests attending the inauguration of FIT 2011, CIIT

INAUGURATION OF WELDING TRAINING CENTRE AT HIAST-SYRIA

The Higher Institute for Applied Sciences and Technology (HIAST) has recently inaugurated its Welding Training Centre. This training centre is in the process of seeking approval to become internationally recognized Certified

Training Provider according to the International Institute of Welding (IIW) guidelines. For this, the Centre has the patronage of HIAST, the Central Metallurgical Research and Development Institute-CMRDI (IIW-representative in Egypt and IIW-ATB) and the Austrian Welding Institute-SZA (IIW-ANB).

The scope of HIAST Welding Training Centre covers the following programmes: International Welding Engineer (IWE); International Welding Technologist (IWT); International Welding Specialist (IWS); International Welding Practitioner (IWP); International Welding Inspection Personnel (IWIP); and International Welder (IW).

The main objective of this Training Centre is to provide certified and internationally recognized training programmes for welding personnel within the scope mentioned above. This Centre is also assigned the mission of developing welding technology in Syria through:

- Providing technical support and consultancy to welding professionals;
- Conducting R&D programmes with national and international institutes;
- Helping to effectively promote and understand the modern welding technologies;
- Participating in fairs, seminars and specialized workshops; and
- Implementing projects with industries.

The workshop of the HIAST Welding Training Centre contains 12 training cabinets, equipped with exhaust system. The workshop's working tables allow the welder to train in different position and standard length (EN 287) of test pieces, welding power sources (from Air Liquide-SAF, ESAB, MIGATRONIC), virtual welding machine from Fronius, and all other necessary facilities.

RESEARCH THRUSTS OF ICENS-JAMAICA

The geochemistry of Jamaican soils and foods continues as the essential baseline activity of ICENS and the work is shifting significantly towards the levels and consequences of Jamaican population's exposures to trace-element. At ICENS, data is being gathered on as many elements as possible with a focus to assess the levels of potentially toxic elements, such as arsenic, cadmium, lead and mercury and essential elements like copper, iron, selenium and zinc, in the blood.

Professor Gerald Lalor, who has recently retired from the position of Director General ICENS in December, compiled a report summarizing the results of many years of research in this field, in which cadmium still represents a potential threat to trade although there is still no significant evidence of effects of cadmium on mortality in Jamaica.

As this circumstance runs counter to the accepted global opinion, more information is clearly required and ICENS' future plans include a major epidemiological study that will need substantial funding.

In the meantime, following the precautionary principle, ICENS has been better defining areas and foods that meet international requirements, or are likely substitutes for some that do not do so. The new Director General ICENS, Dr. Richard Annells, plans to investigate the influence of Jamaican bedrock geology on the distribution of the potentially toxic elements.

PRESIDENT OF RSS-JORDAN PARTICIPATES IN THE WORLD SCIENCE FORUM IN BUDAPEST

HRH Princess Sumaya bint El Hassan, President of Royal Scientific Society (RSS) and El Hassan Science City, Jordan, addressed the closing session of the World Science Forum in Budapest, Hungary, on November 19, 2011.

ANNOUNCEMENT

PH.D RESEARCH FELLOWSHIPS AT THE ROYAL SCIENTIFIC SOCIETY

In line with the vision of RSS to encourage regional scientific capacity-building and networking, and in order to support researchers and graduate students in the areas of basic sciences (Biology/Chemistry/Physics/Earth Sciences) and disciplines of engineering sciences (civil/architectural/electronic/computer/mechanical/industrial), RSS welcomes and encourages Ph.D students in Jordan or abroad to submit their doctoral thesis/proposals for evaluation and for possible affiliation with RSS. RSS has over 25 specialized laboratories in the areas of water, environment, energy and all major engineering sciences that can be used by the selected Ph.D students for their applied research.

The Ministry of Higher Education, Government of Hashemite Kingdom of Jordan, permits Graduate & Ph.D students studying abroad to carry out part of their scientific research in the country, and in agreement with their respective universities in order to contribute to the social and economic development of Jordan.

Selection will be made on the basis of competition, scientific research priorities of RSS and the available scientific facilities pertinent to applied scientific research areas mentioned above.

For further details:
URL: http://www.rss.jo/sites/default/files/023.pdf
Email: researchers@rss.jo
Tel: +962 6 5344701 Ext. 2825
Fax: +962 6 5340520

President of RSS at the World Science Forum in Budapest, Hungary

Speaking during the event that was held at the Hungarian Parliament in the presence of H.E. Dr. Pál Schmitt, President of Hungary, the Princess stated that only scientific ingenuity could respond to the defining challenges of this century. Stressing the need for scientific collaboration at international levels, the Princess opined that the development of science and technology at national, regional and global levels is increasingly being driven by highly educated researchers and a skilled workforce that is mobile and interactive.

BIOSAFETY LABORATORIES IN TÜBİTAK MRC-TURKEY

The Genetic Engineering and Biotechnology Institute (GEBI) of TÜBİTAK Marmara Research Center (MRC), Turkey, has a Biosafety Level 2 Laboratory, which has been used for twenty five years. TÜBİTAK MRC now aims to establish BSL-3 laboratory infrastructure containing Animal BSL-3 facility to study in safe and controlled conditions the pathogenic organisms that cause diseases. The BSL-3 facility will be certified by TÜV SÜD Cleancert GmbH (Germany). Research will be carried out in this facility on the identification of pathogenic bacteria and viruses that pose a threat to human and animal health, as well as on genetic resistance to these diseases and development of protection systems.

This facility will also focus on indigenous development of diagnostic kits and vaccines for zoonotic diseases, such as avian influenza (bird flu), rabies, brucellosis and tuberculosis. Especially, the development of molecular and serological diagnostic tests for zoonotic diseases will eliminate Turkey's dependence on foreign expertise, and thus economic benefits will be obtained. Furthermore, this project will facilitate new biotechnology related SMEs in Turkey on the development of vaccine and diagnostic kits.

CAPACITY BUILDING EVENTS AT NRC-EGYPT

The National Research Centre (NRC), Egypt, is organizing a three-day workshop, titled: Application of Nanotechnology in Industry, in Cairo, under the theme "Opportunity of Integration among IDB Member States", on January 29-31, 2012.

The workshop is designed to be a place for intensive co-working of specialists in the academic, administration and industrial sectors in all fields of interest related to the application of nanotechnology in science, technology and innovation. The event is aimed to give them an opportunity to discuss, exchange opinion and make recommendations on how to maximize the benefits and experiences in the application of nanotechnology in industry.

Events organized by NRC during the reporting period include two workshops: (i) 'Future of Water Resources and Global Challenges' and (ii) 'Repair & Maintenance of Scientific Engineering Equipment in Universities, Research Institutions & Small Scale Industries', held on 29-30 November 2011, and 13-17 December 2011, respectively.

DR. WAFAA OF NRC WINS GOLD PRIZE AT IIFME 2011, KUWAIT

Prof. Dr. Wafaa Mohamed Haggag, who is the Head of the Microbial Biotechnology Group of Agriculture and Biology Research Division at NRC, Egypt, won the Gold Prize at the 4th International Invention Fair in the Middle East 2011 (IIFME 2011), held in Kuwait on November 21-24, 2011.

OFFICIALS FROM LABEX EUROPE AND ROTHAMSTED RESEARCH VISIT EMBRAPA AGROBIOLOGIA - BRAZIL

A Brazilian researcher from LabEx Europe UK, Dr. Alexandre Amaral, and the Head of Department of Plant Pathology and Microbiology, Rothamsted Research, Prof. John Lucas, participated in a technical meeting at Embrapa Agrobiologia, Brazil, on November 11, 2011. The theme of the meeting was 'Molecular Interaction Microorganisms and Plant Genomics', and the goal was to bring together experts from the two UK based institutions at the Centre and discuss the possibility of research partnerships and collaborations in the focus areas.

During the meeting, these researchers presented their work in the segments of molecular biology and microbiology. In addition, the participants learnt a great deal about the programmes at LabEx Europe and Rothamsted Research – an organization that receives funding from the Biotechnology and Biological Sciences Research Council (BBSRC) and other institutions that handle research in biology and agricultural sciences in the United Kingdom.

SCIENCE, TECHNOLOGY AND DEVELOPMENT

NEW HEALTH TECHNOLOGIES

Timely diagnosis and treatment of deadly diseases is a major health issue in most of the developing world. The issue becomes more intense when we talk about remote and inaccessible areas. Any advancement in science and technology addressing these issues brings more hope and promise to the marginalized communities. Recently, two new researches have surfaced which indicate a great potential of helping the developing countries in the areas of diagnosis and treatment of diseases.

The first discovery, reported by *SciDev.Net*; 16th December 2011, relates to the rapid diagnosis of some deadly diseases like hepatitis, HIV and tuberculosis by using fabric 'chips' of woven silk. In addition, these 'chips' could conduct some metabolic tests. The fabric 'chip' provides a cheap alternative to plastic materials used for similar purposes. After treatment with antibodies on other chemicals, the silk fibres change colour when they come in contact with a specific disease. The scientists hope to develop a single fabric strip that will allow doctors to diagnose a wide range of illnesses at the patients' bedside in around five minutes. One such project to develop fabric strips has been funded by the Canadian Government and Bill & Melinda Gates Foundation which aims to bring rapid diagnostic tools that can perform multiple analyses to rural communities in the developing world.

Another discovery, reported by *Science News* (15th November 2011), shows how blood clots can be more effectively busted in the blood vessels using relevant drug wrapped in nanoparticle material. Nanosized gobs containing a blood clot dissolving drug seek out trouble spots in the body and break down blockages responsible for heart attacks. The microscopic packaging seems to improve the drug's potency and might greatly limit its main drawback that is usually the risk of internal bleeding, by focusing its effect precisely at the clot. The report says that this technology could bring back the use of a drug called 'tissue plasminogen activator' (tPA) for treatment of heart attacks, strokes and certain lung diseases arising out of blood clots. Presently this drug, per se, is avoided due to risk of internal bleeding. Tests on animals indicate that clot busting potency of nano-drug is 90 per cent as compared to the straight drug, which is only 10 per cent. Half of the people who have heart attacks die as they fail to get quick angioplasty and timely consultation with a cardiologist. The drug therapy with nano-clot busting drug could save the time of treatment and hence the precious lives.

SPEEDING UP TSUNAMI WARNINGS

Tsunamis and earthquakes are those categories of natural disasters that have created great fear and anxiety in the world – much more than tornados and hurricanes. This is mainly because earthquakes and tsunamis arrive without advance warning and create havoc by inflicting heavy losses to life and property. Since last few decades, scientists have been extensively studying the causes of earthquakes accompanied by tsunamis and the ways to improve the warning-times of these catastrophes. Any advancement in these studies would not only save many lives and properties but also reduce the most negative economic and social consequences associated with such natural calamities. Scientists have indicated that faster tsunami warnings could be issued using Global Positioning System (GPS) data alongside existing earthquake detection technology (*SciDev.Net*, 13th December 2011). GPS data, provided by a satellite navigation system, could help cut the time lag from 20 minutes to around 3 minutes. Seismic instruments, on which current warning systems are mostly based, are slow in processing data; in comparison GPS stations can measure the tsunami related data much more rapidly. Scientists are working to develop cheaper instruments in order to develop a hybrid system of both seismic and GPS components. Better results would be achieved if GPS-seismic integrated arrangements are employed at the well planned sites all around the world with efficient coordination and management. Japan and the USA are expected to take lead on such conducted programmes.

WONDERS OF BIOELECTRICITY

Regeneration of body organs for humans and animals has been an important area of medical research. Efforts have been made to find ways and means to re-grow the lost organs in order to relieve the animals and human kind of their handicapped states. This development can also have a tremendous positive socio-economic impact all around the world.

One significant step taken in this direction has been reported by the *Science News* (31st December 2011). According to this report, researchers have succeeded in growing an extra eye in the gut of tadpole by manipulating electric signals in the tadpole's gut cells. So the tadpole can literally watch what it eats. Bizarre as the finding sounds, it is a major advancement towards regenerating complex organs and limbs. Some day someone who loses an arm or leg might be able to slip on a special sleeve that will electrically stimulate cells at the wound site to re-grow the missing limb. The researchers have previously regrown a tadpole's tail by electrical stimulations. These out of the box experiments have shown that cell's developmental paths are influenced more significantly by the electric states as compared to their molecular properties. The report also indicates that biological electricity has been mostly ignored by scientists except for the ones studying nerves and muscles. Moreover, the unexpected findings in the new study may encourage other biologists to think about how electrical properties influence biological development processes. More promising advancement in this field is expected in the years to come.

PROFILE OF HEAD OF COMSATS' S&T CENTRE OF EXCELLENCE

PROF. DR. MUHAMMAD IQBAL CHOUDHARY, DIRECTOR ICCBS - PAKISTAN

Dr. M. Iqbal Choudhary is a Professor of Organic Chemistry and Director at International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research). He is among the most prominent scientists of Pakistan, recognized for his original contributions in the fields of natural products and bio-organic chemistry. He has authored and edited 27 books, most of which have been published in USA and Europe. He is also the author of over 600 research papers and chapters published in the renowned international science journals of the West. The cumulative impact factor of his publication is over 1,000. This by far is the largest number of quality publications from any scientist in Pakistan of his age-group. He has been the most cited scientist of Pakistan in last five years with citations exceeding 3,400.

He is the Volume Editor of many international book series journals. He has served as a visiting faculty in many prestigious universities of the world including Cornell University (New York), Purdue University (Indiana), Pennsylvania State University (Pennsylvania), and the Scripps Institution of Oceanography (San Diego, California).

Dr. Choudhary has skillfully used his deep understanding of chemical principles and biological processes in the discovery of a large number of fascinating molecules with potential therapeutic applications. More specifically his research group at ICCBS has studied and discovered new inhibitors of clinically important enzymes, which can be used to stop the disease processes involved in the enzyme-related disorders. As a result, several new classes of lead molecules were made known to the world of science along with associated understanding of their mechanism of action.

The most notable contribution of Dr. Choudhary is in broad area of Bio-organic Chemistry where he used structural diversity of natural and synthetic compounds combined with biological targets to discover lead molecules with a potential to be developed as effective pharmaceutical agents. Some of the internationally recognized discoveries of his research group include the discovery of novel classes of acetylcholinesterase, ureases, and α-glucosidase inhibitors. The results of these studies have been published in over 150 research papers in top international journals and have also been patented internationally. His research group has also discovered the two most potent antiepileptic natural products (Iso-oxylitones A and B) from a Pakistani medicinal plant *Delphinium denudatum*, which has attracted a major attention internationally. These compounds are now patented in USA and are in the process of pre-clinical studies.

His work has also resulted in a number of important scientific discoveries including the discovery of plant materials with pronounced antidiabetic, antileishmanial and cholesterol-lowering effects. Many of the structurally novel compounds, discovered by his research group were found to have interesting pharmacological profiles and are in different stages of development.

Prof. Choudhary has won several national and international awards. These include:

- Civil Award Hilal-i-Imtiaz by the President of Pakistan (2007);
- Civil Award Sitara-i-Imtiaz by the President of Pakistan (2001);
- Recipient of Civil Award Tamgha-e-Imtiaz by the President of Pakistan (1999);
- First Khwarizmi International Award and Prize from the President of Islamic Republic of Iran (2006);
- Economic Cooperation Organization (ECO) Award in Education by the President of Azerbaijan (2006);
- Doctor of Science (D.Sc.) University of Karachi (2005);
- Distinguished National Professor of the Higher Education Commission (2004);
- Prof. Abdus Salam (Nobel Laureate) Prize in Chemistry (1989);
- Prof. Raziuddin Siddiqui Gold Medal of Pakistan Academy of Sciences (1992);
- Third World Academy of Science Young Scientists Award (1994);
- National Book Foundation Prize (1995).

He is a member and fellow of many prestigious societies including:

- Fellow of the World Innovation Foundation (2006);
- Fellow of the Royal Society of Chemistry (2004);
- Fellow of the Third World Academy of Sciences (2003);
- Fellow of the Islamic Academy of Science (2003);
- Fellow of the Pakistan Academy of Sciences (2003);
- Fellow of the Chemical Society of Pakistan (2001);
- Senior Fulbright Fellow at the University of California at San Diego, USA (1999);
- Fellow of the LEAD-International (Leadership for Environment and Development) sponsored by the Rockefeller Foundation, USA (1998).

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COMSATS' BRIEF AND ANNOUNCEMENTS

SELECTED FORTHCOMING SCIENTIFIC EVENTS IN COMSATS' COUNTRIES

20-22 March 2012	Sustainable Development and Environmental Protection: Clean Technology Development and Environmental Sustainability for Developing Nations, Ota, Nigeria *(http://www.ierdafrica.org/resources/CONF2012.pdf)*
31 March - 03 April 2012	1st EOS Topical Meeting on Photonics for Sustainable Development - Focus on the Mediterranean (PSDM 2013), Tunis, Tunisia *(http://www.myeos.org/events/psdm2013)*
26-27 April 2012	GreenAge II - Sustainable Society and Green Economy, Istanbul, Turkey *(http://greenage2012.blogspot.com/)*
18-19 May 2012	International Conference on Informatics, Electronics & Vision (ICIEV12), Dhaka, Bangladesh *(http://aa.binbd.com/ICIEV/index.html)*

2ND COMMISSION MEETING OF COMSATS , ISLAMABAD, PAKISTAN (April 16-17, 2011)

The Chairperson of COMSATS, the Prime Minister of Pakistan, Syed Yusuf Raza Gilani, is convening the 2nd Commission Meeting of COMSATS on April 16-17, 2012 in Islamabad, Pakistan. The meeting is being held at the level of Ministers nominated by the Heads of State/Government. The Ministry of Science and Technology, Government of Pakistan, is the host institution of the Meeting.

CALL FOR PAPERS FOR COMSATS' JOURNAL – SCIENCE VISION

Science Vision is a biannual scientific journal of COMSATS. It primarily aims at highlighting the important scientific and technological developments that have a bearing on socio-economic conditions of the people. It invites research as well as review articles that have general scientific descriptions, with comprehensive elucidation of the impact of S&T discoveries and innovations for creating understanding of the contemporary issues and challenges. COMSATS invites scholarly contributions for its journal. Scientists, researchers, policy-makers and young scholars from S&T organizations and R&D institutions are encouraged to contribute articles on any scientific field of interest relevant to the focus of the journal. As per the policy of the journal, contributors are compensated for their time and efforts with a modest amount of honorarium. For more details, please visit COMSATS' official website: **www.comsats.org** or the journal's website: **www.sciencevision.org.pk**. Contributions may be sent to the Chief Editor at: **comsats@comsats.org.pk**.

EDITORS' NOTE

COMSATS Newsletter completes its third year of publication with this issue. During this period, three volumes comprising 18 bi-monthly issues have encompassed the activities of COMSATS - from its Secretariat in Islamabad to the its international S&T Centres of Excellence, from touching upon the forthcoming events in the Member States to the scientific developments influencing socio-economic development. Support received throughout this period from the Network members and within COMSATS Secretariat is highly appreciated. We also take this opportunity to invite feed-forward for the fourth volume of the Newsletter.

We find it pertinent to mention here that this last issue of the third volume is rather elaborate in terms of number of pages and the presentation of its content. The main highlights of this issue include coverage of Commission Meeting of COMSATS due in April 2012 and five capacity-building events sponsored by COMSATS that have taken place during the reporting period. Obituary of COMSATS Secretariat's Publications Consultant has also been given to acknowledge and honour his longstanding association with the organization.

A BRIEF ON COMSATS

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) is an inter-governmental organization, with its Secretariat located in Islamabad.

COMSATS, currently, has 21 countries as its members, spread across three continents, i.e., Latin America, Africa and Asia. A network, of 17 International Science and Technology Centres of Excellence, is also affiliated with COMSATS to contribute to scientific development of its Member States. For detailed information, please visit COMSATS' website: www.comsats.org.

COMSATS NETWORK OF INTERNATIONAL S&T CENTRES OF EXCELLENCE

- Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh
- Centro Internacional de Fisica (CIF), Colombia
- COMSATS Institute of Information Technology (CIIT), Pakistan
- Embrapa Agrobiologia, Brazil
- Higher Institute for Applied Sciences and Technology (HIAST), Syria
- Industrial Research and Consultancy Centre (IRCC), Sudan
- International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- International Center for Climate & Environment Sciences (ICCES), China
- International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica
- International Centre for Material Science and Technology (ICMST), Ghana
- Iranian Research Organization for Science and Technology (IROST), Iran
- National Mathematical Centre (NMC), Nigeria
- National Research Centre (NRC), Egypt
- Royal Scientific Society (RSS), Jordan
- Tanzania Industrial Research and Development Organization (TIRDO), Tanzania
- The Biosphere Reserve – Beni Biology Station (BBS), Bolivia
- TÜBİTAK Marmara Research Center (MRC), Turkey