



# COMSATS Newsletter

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Commission on Science and Technology for Sustainable Development in the South (COMSATS)

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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.



Members of COMSATS Coordinating Council  
at its 15<sup>th</sup> Meeting, Gebze Kocaeli,  
Turkey (24<sup>th</sup>-25<sup>th</sup> May 2012)

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## From the Executive Director's Desk

Historically, the industrial revolution of 18<sup>th</sup> Century led to a period of intense economic activity in the West, based on mechanized production processes. The energy sources of choice have been coal and other fossil fuels. Consequently, during the period 1850 - 2009, about 1.3 trillion tonnes of CO<sub>2</sub> was released in the atmosphere leading to Global Warming with horrendous possible consequences for the whole world. Additionally, the acidity of oceans has increased to more than 30% and is heading towards a level that could seriously affect the sea-based food chains. To top up the pollution of air and water, the industrial countries have been liberally using outer space to gain economic and military advantage. Resultantly, the space is polluted with debris of discarded satellites and other equipment in the low Earth-orbits to the extent that it is feared to become self-perpetuating, thus making the most useful part of space unsuitable for future use.

It was hoped that the leaders of rich nations, facing the rest of the world at the UN Conference on Sustainable Development (Rio+20), would consolidate the principle of common but differentiated responsibility to keep the world a habitable place for all humanity. But, the main conference proceedings indicate that strong diplomatic skills were deployed to side-step even those commitments that were agreed in the first Rio Conference of 1992; such as, technology-transfer and financial support for environment-friendly technologies to be adopted by developing countries. In the face of this situation, the future prospects for a healthy planet are apparently not too

promising. The consequences are predictable; environmental instabilities are bound to create social upheavals at international level. The 20% of the world's rich, who consume 86% of all goods and services as well as 80% of all energy, would no longer remain isolated in their islands of prosperity. The gulf of S&T capacity between the developed and developing countries and knowledge-divide, in general, means that an egalitarian world would remain an unattainable utopia even in the long run.

With a few exceptions, most of the COMSATS' member countries are mired in the vicious cycle of resource-deficit and political instability. The scientific community must bear the brunt of responsibility to bring about positive change in the society, through relentless efforts for popularizing science and its social impact in the form of liberal thinking and objective analysis. The international competition will not leave much room for the survival of defaulters. Happily, the 15<sup>th</sup> Coordinating Council Meeting of COMSATS (page 4) heard presentations of the leaders of R&D organizations spread across three continents, which indicated commendable progress of their projects and a strong will to make S&T a vehicle of development. In this context, the approval of a mega project of COMSATS – COMSATS Technology Park – is a welcome new step towards tangible socio-economic benefits. The extent to which COMSATS is successful in its mission will depend on the commitment and interest of its Council Members.

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## NEWS/ACTIVITIES/HIGHLIGHTS FROM COMSATS SECRETARIAT

### THE EXECUTIVE DIRECTOR COMSATS INAUGURATES REGIONAL EXPERTS' MEETING OF ISESCO

COMSATS and the Islamic Educational, Scientific and Cultural Organization (ISESCO) share with each other a strong tradition of collaboration in S&T and have similar mandates. Since 2004, the two organizations have been collaborating for capacity-building and knowledge-sharing for socio-economic development of their Member States.

On May 7, 2012, the Executive Director COMSATS, Dr. Imtihan Elahi Qureshi, participated in the opening ceremony of the Regional Experts' Meeting on 'Using E-Books and E-Libraries in Educational Institutions' as the Chief Guest. Held in Islamabad from May 7-9, 2012, the three-day event was organized on the occasion of the 30<sup>th</sup> Anniversary of ISESCO, in collaboration with the Ministry of Awqaf and Islamic Affairs, Kuwait, and the Pakistan National Commission for UNESCO (PNCU). Other guests of honour of the event were Mr. Muhammad Ikram, Secretary General PNCU; Mr. Muhammad Dawood, Deputy Secretary General PNCU; and Dr. Md. Yusnan Bin Yusof, Representative from ISESCO Headquarters, Morocco.

Delivering his Inaugural Address, Dr. Qureshi considered Information and Communication Technologies (ICTs) as the most important among the new technologies in terms of socio-economic impact on societies across the globe; e-libraries being an important offshoot of this new technology. He opined that the electronic management of the academic resources through e-libraries would become a norm in the near future, which is in line with the Plan of Action agreed by 175 countries during the World Summit on Information Society (2003), Geneva, Switzerland. As delineated by Dr. Qureshi, there are three-fold challenges for developing countries in this respect:

- i) to create enabling environment for access to e-books for a large fraction of their populations;
- ii) to develop new content or digitize their knowledge resources that preserve their social and economic interests; and
- iii) to ward off cultural invasion and negative stereotyping of their faiths and values.

Referring to COMSATS' collaborative activities with ISESCO and PNCU, Dr. Qureshi appreciated the excellent

working relations with the two organizations.

Earlier, the Secretary General PNCU in his Welcome Address thanked the honourable guests and the experts for their participation in the Meeting. Speaking on behalf of H.E. Dr. Abdulaziz Othman Altwajri, Director General ISESCO, Mr. Ikram highlighted the need for joint action to address the challenges faced in development of education, science, culture and communication.

Speaking on the occasion, Dr. Yusof considered it important for the developing countries to see e-books and e-libraries as good options for accessibility to important information resources, as many important books are not printed but are disseminated electronically. Dr. Yusof highlighted the digital library of classical Arabic literature – MAJALISS – that has been launched under ISESCO-UNESCO cooperation programme. Dr. Yusof also enumerated and elucidated the key objectives of the meeting on e-books and e-libraries.



*The Executive Director COMSATS Chairing Regional Experts' Meeting of ISESCO*

The objectives of the event included: determining a list of websites for authentication and integration of their e-book contents; creation of a guide for the library procedures and policies in acquiring e-books and e-libraries for educational institutions in the Asian countries; and promotion of new synergies among relevant stake-holders. Experts from Bangladesh, Malaysia, Maldives, Pakistan, Philippines, Sri Lanka, and Thailand participated in the event deliberating on various aspects of optimal utilization of e-

resources in the light of the experience gained in their countries.

### COMSATS' SYMPOSIUM COMMEMORATES WORLD ENVIRONMENT DAY 2012

A symposium on Sustainable Environment for Socio-economic Development was held on June 6, 2012, by COMSATS and one of its Centres of Excellence in Pakistan, the COMSATS Institute of Information Technology (CIIT). The event featured talks on topics relating to the World Environment Day 2012 observed globally.

Dr. Ishfaq Ahmad, Senior Advisor on Climate Change and Development, Planning Commission of Pakistan, graced the occasion as the Chief Guest. In his Keynote Address, Dr. Ahmad appreciated the holding of the symposium to highlight the global concern viz environmental degradation

and climate change. Giving a historical perspective of the efforts for this global concern in Pakistan, Dr. Ahmad noted that owing to the exacerbating environmental conditions, the world in general and Pakistan in particular is heading towards extreme weather conditions having serious implications on all sectors of life. He considered over population, and complex life styles as retarding factors to the efforts for amelioration of the worsening situation of environment and climate change. He underscored the need of social equity to realize sustainable development.

Speaking on the occasion, the Executive Director COMSATS welcomed the participants and hoped that the deliberations of this symposium would generate important recommendations for policy makers. Dr. Qureshi stated that COMSATS and CIIT are one step ahead of other institutions working in the environment and climate change studies, as apart from holding capacity building events, they are also conducting active research in collaboration with relevant organizations in other developing countries. One such initiative, Dr. Qureshi noted, was the establishment of International Thematic Research Group of COMSATS on 'Climate Change and Environmental Protection', which is being headed by the Director of the International Centre for Climate and Environment Sciences (ICCES), Beijing, China. The specific project, 'Characteristics and Mechanism of the Extreme Climate Events under the Climate Change Background', is being conducted with the participation of scientists from Iran, Jamaica, Nepal, Sudan and Thailand.

Dr. Qureshi acknowledged the enormous contributions made by Dr. Ishfaq Ahmad in the field, which includes the establishment of Global Change Impact Studies Centre (GCISC), which is the only research centre in Pakistan devoted to study the implications for global climate change.

Earlier in his welcome address Dr. Arshad Saleem Bhatti, Dean Faculty of Science, CIIT, gave the background of the World Environment Day and highlighted the importance of this year's theme of the Day, 'Green Economy: Does it Include you?'. He thanked the organizers and speakers for being a part of the event that showed their solidarity to the global efforts to address the concerns relating to environmental degradation and climate change.

Subsequently, four technical talks were delivered on key

topics relating to the theme of the event. These were:

- 'Green Economy' by Mr. Arif Goheer, Global Change Impact Studies Centre (GCISC);
- 'Impact of Global Climate Change on Pakistan's Environment' by Dr. Shahina Tariq, Department of Meteorology, CIIT;
- 'Winter Fog Variability over South Asia and its effects on Environment' by Dr. Faisal Saeed Syed, Pakistan Meteorological Department, Islamabad; and
- 'Land-Slide Hazards and Environmental Intensity Scale for Azad Kashmir, North-West Himalayas, Pakistan', by Dr. Mona Lisa, Department of Meteorology, CIIT.

It was noted in these presentations that natural resource wastage, population explosion, poor management and economic policies on the use of these resources may be the key aggravators of climate change leading to the degradation of environment. It was discussed that climate change manifests itself in the form of more frequent and powerful cyclones and hurricanes; frequent and intense floods and heavy snowfalls; severe and longer drought periods; unexpected climatic events and changes in weather patterns such as short winters, earlier springs and longer summers.

The technical talks also highlighted the correlation of landslides and earthquakes, and the increasing trend in fog frequencies over South Asia. These events adversely affect economy, water resources,

agriculture, forestry, biodiversity, health, and tourism among many other fields of life. The experts believed that green economy – characterized by low-carbon use, resource efficiency and social equity – may be an effective means to mitigate the effects of climate change and lead to socio-economic development by, inter alia, better food, water and energy security; ecosystems' stability; and alleviation of poverty by creation of new jobs.

In view of the climate change phenomenon and its impact on the lives of the people, the speakers generally called for shifting the focus from resource exploration to resource efficiency; lessening dependence on fossil fuels and using renewable energies; judicious use of natural resources, turning to simpler ways of living; enhanced role of academia in sensitizing the communities towards green economy; and creating public awareness on impact of climate change.



*Dr. Ishfaq Ahmed addressing the participants of COMSATS' Symposium on World Environment Day*

## SPECIAL REPORT: 15<sup>TH</sup> MEETING OF COMSATS COORDINATING COUNCIL

### INTRODUCTION

As a major platform for South-South scientific cooperation, the annual meetings of the Coordinating Council review the activities of COMSATS' Network; follow up on the decisions and recommendations made in its last meeting(s) and outline the future course of action for COMSATS' international projects and programmes. The 15<sup>th</sup> Meeting of COMSATS Coordinating Council was successfully held on May 24-25, 2012, at Gebze, Kocaeli, Turkey, under the Chairmanship of Prof. Eduardo Posada, Executive Director, International Centre of Physics (CIF), Colombia. The meeting was hosted by COMSATS' Centre of Excellence in Turkey, the TÜBİTAK Marmara Research Center (MAM). This meeting of the Council was of special importance as it took place immediately after the second Commission Meeting of COMSATS, which had been held in April 2012 at the level of Ministers nominated by the Heads of the member Government/State.

Apart from the high officials of COMSATS Headquarters, the meeting was attended by Council Members or their representatives from 13 Centres of Excellence of COMSATS; representatives of the University Cheikh Anta Diop (UCAD), Senegal, and the International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy, as an observer; as well as other senior officials of the host centre. On the occasion, presentations were given on the activities of the Centres of Excellence as well as COMSATS' three International Thematic Research Groups (ITRGs) during the period since last Coordinating Council Meeting. COMSATS' senior officials also made presentations on: Annual Activity Report by Executive Director COMSATS; Financial and Administrative Affairs of COMSATS by the Advisor-Programmes COMSATS; and the 2<sup>nd</sup> part of COMSATS' Strategy Document (Implementation and Monitoring) by Advisor (International Affairs) COMSATS.



*Dr. I.E. Qureshi, Dr. Eduardo Posada and Dr. Suat Genç during a technical session of the meeting*



*The Executive Director presenting COMSATS' Annual Activity Report to the Coordinating Council*

### Participants of the 15<sup>th</sup> Coordinating Council Meeting

- Prof. Dr. Ahmad Ismail Mustafa, Chairman BCSIR, Bangladesh
- Prof. Lin Zhaohui, Director ICCES, China
- Dr. Eduardo Posada F., Director CIF, Colombia
- Prof. Dr. Ashraf Shaalan, President NRC, Egypt
- Dr. Abdulai Baba Salifu, Director General CSIR, Ghana
- H.E. Dr. Ahmad Akbari, President IROST, Iran
- Dr. Richard Annells, Director General ICENS, Jamaica
- Dr. Nabeel Ibrahim Al-Fayoumi, Vice President for Testing, Quality & Technology, RSS, Jordan
- Mr. Clement Olajide Adeyemo, Registrar NMC, Nigeria
- Prof. Dr. M. Iqbal Choudhary, Director ICCBS, Pakistan
- Prof. Dr. Fatima Z. Basha, Professor of Chemistry, ICCBS, Pakistan
- Prof. Dr. Sajjad Mohsin, Dean, Faculty of Information Sciences & Technology, CIIT, Pakistan
- Dr. Azhari Mohamed Elbadawi, Director General IRCC, Sudan
- Prof. Aly Mbaye, Dean, School of Economics, UCAD, Senegal
- Prof. İbrahim Dinçer, Acting President TÜBİTAK MAM, Turkey
- Dr. Suat Genç, Acting Vice President, TÜBİTAK MAM, Turkey
- Dr. Sibel Sain Özdemir, Manager BDU, TÜBİTAK MAM, Turkey
- Ms. Demet Erenoğlu, Business Development Specialist, BDU, MAM, Turkey
- Mr. Cem Özbek, Corporate Communication Specialist, BDU, MAM, Turkey
- Mr. Decio Ripandelli, Director Administration and External Relations, ICGEB, Italy
- Dr. Amir Saeed Karami, Deputy Director General, Office of International Scientific Cooperation, Ministry of Science, Research and Technology, Iran
- Dr. Imtihan Elahi Qureshi, Executive Director COMSATS, Pakistan
- Mr. Tajammul Hussain, Advisor (Programmes), COMSATS, Pakistan
- Dr. Hasibullah, Advisor (International Affairs), COMSATS, Pakistan
- Mr. Farhan Ansari, Assistant Director (Programmes), COMSATS, Pakistan

The key decisions taken by the Coordinating Council in its 15<sup>th</sup> meeting include: re-designation of the Council for Scientific and Industrial Research (CSIR), Ghana, as COMSATS' Centre of Excellence in place of its constituent organization, Building and Road Research Institution (BRR); induction of UCAD-Senegal in COMSATS' Network; approval of the 2<sup>nd</sup> part of the COMSATS' Strategy Document; and constitution of a three-member Committee to make necessary amendments in the Charter of the Network. The Coordinating Council showed satisfaction on the administrative and financial affairs of COMSATS, and approved the organization's budget for 2012-13. The participants of the Meeting were also provided an opportunity to visit various institutes of the host Centre, TÜBİTAK MAM, as well as National Metrology Institute of TÜBİTAK.

## INAUGURATION

The meeting was inaugurated on May 24, 2012, at the Turkish Institute for Industrial Management (TÜSSİDE), Gebze, Kocaeli, Turkey, by the Advisor to the President TÜBİTAK, Mr. Çağatay Telli (also the Chief Economist at the Ministry of Development, Government of Turkey). Mr. Telli, in his presentation on 'Principles of R&D Policy: An International Perspective', emphasized the important role of the private sector in achieving economic prosperity through R&D. He also urged the governments of the developing countries to develop their research policies keeping in view their capabilities and resources. Earlier, the host of the meeting, Dr. İbrahim Dinçer, Acting President TÜBİTAK MAM, in his welcome speech, stressed the significance of making technological advancements in order to achieve socio-economic development. He regarded COMSATS' objectives aimed at promoting South-South cooperation as most laudable and offered the full cooperation of TÜBİTAK MAM in this respect.

In his Introductory Remarks, Dr. I. E. Qureshi, Executive



*A technical session of the meeting in progress*

Director COMSATS, recounted the outcomes of the recently held 2<sup>nd</sup> Commission Meeting of COMSATS (April 16-17, 2012, Islamabad, Pakistan), one of which was the election of Ghana as COMSATS' new Chair. He also informed that the Commission Meeting highly appreciated the vital role being played by COMSATS' Centres of Excellence towards the achievement of COMSATS' objectives.

"COMSATS is a body, which is full of possibilities for new initiatives and is ever ready to help in implementing plans that any country may have, in line with the organization's core objectives....The real strength of COMSATS, of course, lies here in this forum of the Coordinating Council. The intellectual input that is provided by the Member Countries and some non-member countries through interactions in the Council meetings is, in fact, worth more than any monetary contribution."

**Dr. Imtinan Elahi Qureshi**  
*Executive Director COMSATS*

The Chairperson of the Council during his address stressed the necessity of enhancing scientific collaboration among scientific/research institutions in the developing world, and pointed out some actions to be taken by the developing countries on urgent basis that included: development of policies for the promotion of science, technology and innovation; improvement in the standards of S&T education; and strengthening of linkages between R&D organizations and industries. He also suggested that a couple of capacity building activities of COMSATS may be held in Latin America during 2012-13, on the themes of common interest.

"...our participation in COMSATS has had an enormous importance in making us aware of the great challenges that the world faces today, which can only be successfully solved if we are able to work together. Research and development projects must be defined in the field, based on the diagnosis of problems, not on symptoms. The construction of sustainable solutions involves interdisciplinary work using local resources and international experiences, especially from countries of similar levels of development."

**Dr. Eduardo Posada Florez,**  
*Chairperson Coordinating Council*

The full texts of the speeches by Dr. Qureshi and Prof. Posada are available COMSATS' website: [www.comsats.org](http://www.comsats.org).

## TECHNICAL PROCEEDINGS

At the beginning of the Meeting, the 12-point Provisional Agenda was adopted unanimously by the Council. The Council expressed satisfaction over the implementation status of the decisions taken during the 14<sup>th</sup> Meeting of COMSATS Coordinating Council. As per the standard format of the meeting, the Executive Director COMSATS



Participants of the meeting receiving a presentation on the activities of Centres of Excellence



The participants of the meeting visiting TÜBİTAK National Metrology Institute

presented COMSATS' Annual Activity Report (May 2011 – April 2012). The comprehensive report presented by the Executive Director was highly appreciated, particularly with respect to the following major achievements among others: holding of 2<sup>nd</sup> Commission Meeting; Co-organization of nine international capacity building events; progress of three active ITRGs and COMSATS' flagship projects; and finalizing the document on implementation aspects of COMSATS' five-year strategy.

The 2<sup>nd</sup> part of the COMSATS' Strategy Document, presented for the Council's approval, comprises 9 strategic activities related to the Centres of Excellence, Focal Points, Donor Organizations and the Secretariat with the tentative timeline spanning from the year 2012 to 2016. These activities are: Project Formulation, Project Implementation and Monitoring, Programme Funding, Capacity Building Programmes, Amendments in the Charter, International Collaboration, Administrative Adjustments, Strengthening Membership, and Visibility and Public Awareness. Efforts for most of these are already underway. A new development, however, has been the constitution of a three-member Committee to take up matters relating to amendments in the Charter of the Network. The Council unanimously approved the Document.

Progress reports of the three operational ITRGs were presented to the Council by the respective Group Leaders, as well as the matters relating to launching of the remaining

ITRGs were discussed.

The Council highly appreciated the achievements of the incumbent Executive Director, and adopted a resolution recommending the continuation of his services for COMSATS. The resolution also mandated the Executive Director to, inter alia, implement the decisions of the 2<sup>nd</sup> Commission Meeting. A Communiqué (Page-7) was issued at the end of the Meeting.

### MAJOR OUTCOMES

The Council also discussed at length the possibility of new initiatives. After detailed discussions, it unanimously approved the following:

- Establishment of 'COMSATS Technology Park' at CIIT, Islamabad, Pakistan.
- Launching of a scheme whereby outstanding scientists in COMSATS' Centres of Excellence will be designated as 'COMSATS Distinguished Professors'.
- Establishment of a network of experts in the field of 'Science, Technology and Innovation Policy'.

The next (16<sup>th</sup>) meeting of the Coordinating Council will be hosted by the Council for Scientific and Industrial Research (CSIR), Ghana, while the Iranian Research Organization for Science & Technology (IROST), Iran, will be the alternative host.



**Communiqué**  
**15<sup>th</sup> Coordinating Council Meeting of COMSATS**  
**(24-25 May, 2012)**  
**TÜBİTAK Marmara Research Center – Turkey**

- The COMSATS' Coordinating Council in its 15<sup>th</sup> Meeting wishes to express its profound gratitude to the Government of Turkey and TÜBİTAK Marmara Research Center (MAM) for hosting the Meeting and making excellent arrangements in this regard.
- The members of the Council have learned with great appreciation, the high standards of scientific and technical research being conducted in TÜBİTAK MAM and the contributions this Centre of Excellence has made in promoting the objectives of COMSATS. The Council strongly feels that Turkey's early membership of COMSATS will expand and strengthen scientific and technical cooperative programmes among the member countries for their collective benefit.
- The progress made by COMSATS' Centres of Excellence in achieving their scientific and technical targets is praiseworthy. Utilizing this potential for the promotion of the International Thematic Research projects for accelerating the pace of socio-economic development in the member countries would be highly desirable.
- The Council expresses its great pleasure and satisfaction on successfully holding the 2<sup>nd</sup> Commission Meeting in Islamabad-Pakistan in April 2012 through the joint efforts of COMSATS' Secretariat, the Ministry of Science and Technology, Government of Pakistan and the Governments of the COMSATS' member countries. The Council welcomes the election of the Head of State of the Republic of Ghana as the new Chairperson of the Commission and assures him of Council's full cooperation in the promotion of COMSATS' future programmes.
- The Council endorses and supports the Resolution unanimously adopted during the 2<sup>nd</sup> Commission Meeting and expresses its willingness to cooperate with the Secretariat to implement the decisions taken therein.
- The Council appreciates the efforts of the Secretariat for enhancing the membership of COMSATS' Network, and welcomes the addition of the University Cheikh Anta Diop (UCAD), Senegal, and re-designation of the Council for Scientific and Industrial Research (CSIR), Ghana, as COMSATS' Centres of Excellence. The addition of these Centres has imparted great strength to COMSATS' Network and will expand the scope of its technical programmes in the countries of the South.
- The Council commends the role of COMSATS' Secretariat in completing the work on COMSATS' future strategy and feels convinced that the strategy will greatly help in facilitating the progress of International Thematic Research projects in an efficient and cost-effective manner.
- Scientific and technical capacity building in the COMSATS' member countries through South-South cooperation is a central objective of the Network of Centres of Excellence. The partnership of COMSATS with other international organizations such as ISESCO, UNESCO, NAM S&T Centre in promoting the capacity building programmes in COMSATS' member countries is highly encouraging. It is hoped that these esteemed organizations will continue supporting COMSATS in the future as well and more Centres of Excellence will be able to participate in such collaborative activities.
- The Council attached considerable importance to the pressing need of raising more funds for successful implementation of COMSATS' scientific programmes in the member countries. In this regard, it has been felt that systematic efforts need to be made by the member countries, Centres of Excellence and the Secretariat on priority basis.
- The Council, taking note of the substantive para 5 of the Resolution adopted by the 2<sup>nd</sup> Commission Meeting, requests the member countries to contribute generously towards the Endowment Fund of US \$ 10 Million, approved by the Commission.
- The Council reaffirms its full commitment to the objectives of the Network of the Centres of Excellence as laid down in its Charter and expresses its resolve to uphold the spirit and principles of South-South cooperation for sustainable socio-economic development of COMSATS' member countries. The Centres of Excellence renew their commitment to hold Capacity Building Programmes for COMSATS' Member Countries.
- Taking note of the substantive para 11 of the Resolution adopted by the 2<sup>nd</sup> Commission Meeting, the Council approves the constitution of a three member committee to harmonise the provisions of the International Agreement to Establish COMSATS and the Charter of the Network of International S&T Centres of Excellence, to be considered jointly as COMSATS Statutes.
- The Council strongly urges the governments of all developing countries, in general, and COMSATS' member countries, in particular, to allocate at least 2% of their GDP for developing and strengthening the systems of scientific education, S&T research and development, and innovation in their countries that would lead to socio-economic progress and prosperity in the developing world.



## ACTIVITIES/NEWS OF COMSATS' CENTRES OF EXCELLENCE

### CIIT-PAKISTAN HOSTS TWO-DAY VICE CHANCELLORS' FORUM

A two-day Vice Chancellors' Forum on 'Higher Education in the Islamic World: Challenges and Opportunities' was held on 11<sup>th</sup> and 12<sup>th</sup> of June 2012, in Islamabad, Pakistan. This first of its kind event in Pakistan was co-organized by the COMSATS Institute of Information Technology (CIIT); the Higher Education Commission (HEC) of Pakistan; the Ministry of Science and Technology, Government of Pakistan; the Islamic Educational, Scientific and Cultural Organization (ISESCO); and the Federation of Universities of the Islamic World (FUIW). The Forum was attended by about 200 Vice Chancellors, Rectors and University Presidents from 35 Islamic countries.

The Forum was inaugurated in Islamabad by the then Prime Minister of Pakistan, H.E. Syed Yusuf Raza Gilani, with the objective to: establish and strengthen linkages among universities in the Islamic World; promote pooling of human and technological resources; and increase the opportunities for scholarships, as well as exchange of students and faculty among the institutions of higher learning. The forum focused on four key themes: (a) Science, Technology and Innovation, (b) Knowledge Management, (c) Quality Assurance, and (d) University Governance.



*Inauguration of the Vice-Chancellor's Forum  
co-organized by CIIT*

The resolution adopted at the conclusion of the technical sessions of the Forum, inter alia, called for research findings of the scholars from Islamic countries to be widely disseminated and published in important journals worldwide. Some specific points of the resolution called for:

- Institutionalizing the Forum of Vice Chancellors by convening it annually or biannually;
- Publication of a journal for disseminating research and innovation results among the scientists and scholars of

the Islamic countries and important international institutes of learning and higher education; as well as the publication of a Directory of Islamic Universities;

- Promoting intellectual harmony among the universities of the Islamic World for advancement of knowledge and developing understanding among scholars of all the nationalities and disciplines irrespective of religion, or creed;
- Enhancing efforts for capacity building, exchange of scholars, academicians and researchers among these universities; creating opportunities of scholarships to students and researchers in the universities of the Islamic World; and collaboration for undertaking joint research in areas of common interest.

### OFFICIALS OF CIIT VISIT TSINGHUA UNIVERSITY, BEIJING-CHINA

A seventeen-member delegation comprising faculty members from the department of Physics, Chemistry and Mathematics of CIIT from its Islamabad, Lahore and Abbottabad campuses, led by Prof. Aslam Noor (Professor of the Department of Mathematics), Prof. Raheel Qamar (Dean, Office of Research Innovation & Commercialization) and Prof. Arshad Saleem Bhatti (Dean, Faculty of Sciences) visited Tsinghua University, Beijing-China from 20<sup>th</sup> to 25<sup>th</sup> May 2012.

During their visit, the delegation participated in Tsinghua-CIIT joint workshop that was organized by the School of Sciences, Tsinghua University; and the Faculty of Sciences, CIIT. The faculty members of CIIT had one-to-one interactions with their counterparts and also visited the research labs and facilities at the University and Institute of Chemistry at the Chinese Academy of Sciences (CAS).

During the sojourn in China, the Dean, Faculty of Sciences, also signed an MoU on behalf of CIIT for cooperation with the University in research, exchange of faculty and joint academic supervision, internships, faculty development, submission of joint research proposals for funding and organization of seminars and conferences. Moreover, the officials of CIIT held a meeting with the Director International Office of Tsinghua University and discussed more possibilities and opportunities to further enhance the linkages between the two institutions. They also visited Tsinghua University Science Park (TUSP) and had briefing on its establishment.

### NRC-EGYPT ANNOUNCES THE LAUNCH OF H1N1 VACCINE

The National Research Centre (NRC), Egypt, announced the launch of the first Egyptian vaccine for the prevention of H1N1 and its supply to local markets. Representatives from NRC held a press conference in the presence of the Minister



of Agriculture and Land Reclamation, Engr. Reda Ismail and the Minister of Scientific Research, Prof. Dr. Nadia Zakhari, in which they presented the steps taken by the research team of scientists at NRC for the development of this vaccine. The research team responsible for the development of this important vaccine included Prof. Dr. Abdel Aziz Kotkat, Professor of Poultry Diseases; and Prof. Dr. Mohamed Ahmed Ali, Professor of Virology. These researchers informed that the vaccine was prepared from two strains of the H1N1 virus, one found in hens and the other in ducks. The effectiveness of this vaccine is said to have excelled that of any imported vaccine.

#### **KHWARIZMI INTERNATIONAL AND KHALIFA AWARDS FOR THE RESEARCH DIRECTOR OF RSS-JORDAN**

Prof. Moh'd A. Al-Nimr, the Research Director at the Royal Scientific Society (RSS), Jordan, has been awarded the Khwarizmi International Award 2012 during its 25<sup>th</sup> Ceremony, as well as the Khalifa Award for the 'Distinguished Professors in Scientific Research (2012)'. Professor Al-Nimr received his Ph.D (1991) in Mechanical Engineering from the University of Michigan, Ann Arbor. He has published about 244 articles in the areas of heat transfer (micro- and macro-scale heat transfer, heat transfer in porous media, classical heat transfer models, thermal and hydrodynamics behaviour of micro-channels, etc.), mathematical modeling, and different fields of energy (energy storage, generation, conversion, management, saving, renewable, etc.). Apart from these recent awards, Dr. Nimr also holds King Abdullah II Award for Innovation (2010), Scopus Award for Distinguished Researchers (2009), the Abed-Alhameed Shoman Award for Arab Scientists (1994), the Jordan University of Science and Technology medal (two) for Distinguished Scientific and Academic Achievement (1997 & 2006), the Hisham Hijjawi Award (2003), the Jordanian Writers Society Award for Short Stories (2004), and the Mechanical Engineering Department Award from the University of Michigan, Ann Arbor (1991). He has the highest number of publications in

Jordan as mentioned in a study about the status of the scientific research in OIC (Organization of the Islamic Cooperation) member States. Dr. Nimr has served as the Project Coordinator to the Tempus European Joint Project and time and again provided consultancy to evaluate the EU projects of Tempus, FP7 and Erasmus Mundus programmes. He is also the Editor of the journal 'Energy Conversion and Management' and is on the editorial board of many similar journals.

#### **ACTIVITIES OF EMBRAPA AGROBIOLOGY, BRAZIL, FOR RIO+20**

The Executive Director of Embrapa Agrobiology, Eduardo Campello, represented the Brazilian Agricultural Research Corporation (Embrapa) at a seminar held as a precursor to the UN Conference on Sustainable Development, Rio+20 (June 21-22, 2012). The seminar was held on June 11, 2012, and aimed to discuss and anticipate gridlock and national and international uncertainties surrounding the Rio+20.

On the last day of the seminar, Dr. Campello delivered a lecture focusing on the modern trends in the Brazilian agriculture, which have shifted from culture of import to that of export in a very short span of time. The lecture also highlighted the research developments of Embrapa Agrobiology during the recent years. These included inoculants for legumes and grasses, use of elephant grass for biomass production, organic production systems, and re-vegetation of degraded areas. Dr. Campello concluded his lecture on the following note: "Agriculture is not a problem but a solution towards sustainable development".

On the occasion of Rio+20, Embrapa launched a campaign on 'Sustainable Agro', under the patronage of the Ministry of Agriculture, Livestock and Supply, to further promote the use of sustainable solutions developed by the research in the Brazilian agricultural sector. The campaign was meant to guide the participants of the Rio+20 and society in general, on sustainability in agriculture by highlighting the relevant solutions found by the Brazilian research organizations.

The campaign covered the following 12 major topics: Biological Nitrogen Fixation, Soil and Water; Agroenergy; Forests, Animal Waste Treatment; Recovery of Degraded Pastures; Tillage System, Biodiversity, Agrobiodiversity and Agroecology, Crop-livestock Integration-forest; Productive and Social Inclusion, Environment and Territorial Management; and Sustainable Production Systems.

Other actions of the campaign included the launch of the Sustainable Agro web-page: [www.agrosustentavel.com.br](http://www.agrosustentavel.com.br), where results of Brazilian research for sustainable agriculture are displayed by means of videos and other content. The web-page aims to sensitize the interlocutor companies and society to the leading role that the agricultural sector can play in building a green economy.



*Dr. Nimr of RSS receiving Khwarizmi International Award*

## SCIENCE, TECHNOLOGY AND DEVELOPMENT

### NANOTECHNOLOGY BREAKTHROUGH BRINGING DRAMATIC IMPROVEMENT IN DIAGNOSTICS

Laboratory tests to detect diseases and perform biological research could be made 3 million times more sensitive than before as indicated by researchers who combined standard biological tools with a breakthrough in nanotechnology. The increased performance could significantly improve the easy detection of cancer, Alzheimer's disease and other disorders, by allowing doctors to detect far lower concentration of relevant markers than was previously possible. This was reported by *e!Science News* on 1 June 2012. The breakthrough involves a common biological test called an immunoassay. When biomarkers are present in samples taken from the patients, the immunoassay test produces a fluorescent glow that can be measured in the laboratory. But intensity of the glow places limits on the detection capability of the test. Therefore, it was necessary that the glow of very low intensity should be detectable with high accuracy to show even the low concentrations of disease biomarkers.

Now, the researchers have succeeded in drastically increasing the detection limit of fluorescence signals to 3-million fold. The scientists have achieved this breakthrough by using nanotechnology and powerful electron microscope. The new nanotechnology material used for this method is called D2PA, which is a thin layer of gold nanostructures that surrounds glass structures just 60 nanometer in diameter. This unique material could also find its way into other applications that make use of fluorescence, such as drug discovery, biology, chemistry, engineering, light emitting displays, solar energy harvesting, etc. Further research is going on to include tests linked with early detection of breast and prostate cancer.

### DRAMATIC IMPROVEMENT IN ADVANCE TSUNAMI WARNINGS BY RADAR TECHNOLOGY

Tsunamis have caused horrible devastations in many parts of the world. In the recent past, Japan's nuclear power plants were so badly struck by the Tsunami that the foundations of this economically strong nation were shaken. In addition, the radiations and toxic effects caused by the damaged nuclear power plants have added further misery to the unprepared coastal population of the country. Just like earthquakes, Tsunamis are unpredictable. Protection from the devastations of Tsunamis can only be made by having advance warnings. A new formula that uses data from high frequency (HF) radar sites to detect incoming Tsunamis, could provide advance warnings upto an hour before their arrival at a coastline (*SciDev.Net*, 12 June 2012). Researchers have developed an algorithm that has been duly tested and can enable significant advance warning of Tsunamis in locations of shallow waters (less than 200 meters deep) that extend well off-shore, like areas belonging

to much of South-East Asia, the west coast of India and the east coast of USA. For this purpose, HF radar systems are used which are already installed at many coastal areas around the world.

### HEPATITIS-E VACCINE ARRIVING SOON

Hepatitis poses a major threat to human population, causing catastrophic consequences to the societies and the economies, especially to the poor countries of the world. The Hepatitis-E virus is responsible for around 20 million infections every year. These infections result in approximately 3 million acute illnesses and 70 thousand deaths annually. However, there appears to be a ray of hope for the patients of this dangerous virus. A vaccine of Hepatitis-E is to be launched by China this year (*SciDev.Net*, 19 June 2012). The vaccine's 100 per cent effectiveness in preventing the infection has been determined by Chinese scientists. It is anticipated that this vaccine will be the first in the world to go into production. Many researchers all around the world have commended the Chinese for this highly effective vaccine.

### BEWARE OF NANOTECHNOLOGY POLLUTION

Nanotechnology is rapidly increasing its sphere of influence in industry and research. Few people care about the potential health hazards of the expanding activity. A recent report in *e!Science News* of 11 June 2012, indicates that nanoparticles in polluted air, smoke and nanotechnology products have a serious impact on health. In a ground breaking research, the scientists have concluded that exposure to nanoparticles have a strong link with serious ailments like rheumatoid arthritis and certain autoimmune diseases. This research raises serious concerns in relation to similar health risks caused by nanotechnology products

The researchers have also investigated the common underlying mechanism contributing to the development of autoimmune diseases in humans and animals exposed to a wide range of nanoparticles containing different physical and chemical properties, employing nanomaterials like ultrafine carbon black, carbon nanotubes and silicon dioxide particles ranging from 20 to 400 nanometers. The result was clear and convincing. All types of nanoparticles were causing an identical response in human cells and the lungs of mice, manifesting in specific transformation of amino acid 'arginine' into 'citrulline', which is responsible for the development of autoimmune conditions like rheumatoid arthritis.

Poor and developing countries should take a serious note of this research as the capacity to control pollution is limited in these societies. Any new industrial and business activity having health risks in the poor countries would undoubtedly add unwelcome socio-economic burden on them.

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

### PROF. İBRAHİM DİNÇER, ACTING PRESIDENT TÜBİTAK MAM – TURKEY

Dr. İbrahim Dinçer is the Acting President of COMSATS' Centre of Excellence in Turkey, the Marmara Research Center (MAM), which is a multidisciplinary research and development unit of the Scientific and Technological Research Council of Turkey (TÜBİTAK).

After attaining BSc in Mechanical Engineering in 1987, from Selcuk University, Konya, Dr. Dinçer pursued higher education in the same field and completed his MSc in 1991 from Yildiz Technical University, Istanbul, and received his PhD degree from Istanbul Technical University, in 1993.

From 1994 to 1997, he worked at University of Victoria in Canada as Assistant Professor. Between 1997 and 2002, he worked at King Fahd University in Saudi Arabia where he was firstly promoted to associate professorship and then to full professorship. In 2003, he returned to Canada to join University of Ontario Institute of Technology (UOIT) as a faculty member. During his stay in Canada, he also did teaching and research at various prestigious universities such as Carleton University, University of Toronto, and University of Waterloo.

Dr. Dinçer is a Mechanical Engineer by profession having research interest in the following areas:

- Hydrogen and fuel cell technologies;
- Renewable energy systems and applications;
- Thermal energy storage systems and applications;
- Refrigeration systems and applications;
- Exergy analysis and thermodynamic optimization of thermal systems;
- Life cycle assessment;
- Energy conservation and management; and
- Power generation.

Dr. İbrahim Dinçer is an active member of various international scientific organizations and societies. He is a principal member of The Turkish Academy of Sciences (TUBA), and serves as the Vice President to the World Society of Sustainable Energy Technologies (WSSET), as well as to the International Association of Hydrogen Energy (IAHE).

Known for his pioneering works in the area of renewable/sustainable energy technologies, he has authored and co-authored numerous books and chapters. Dr. Dinçer has authored 7 books, including 'Exergy' (Elsevier 2006) and 'Sustainable Energy Systems and Applications' (Springer 2011).

He has more than 400 published papers and around 300 proceedings at international conferences on sustainable and renewable energy technologies, energy storage

methods, advanced cooling techniques, and exergy. His publications have been cited more than 5000 times, and in this regard he was introduced in the list of the top 1% highly cited scientists by Thomson Reuters in 2011. He has given more than 100 invited talks in his field at various universities and conferences. He has also been an active academic supervisor to more than 100 graduate students.



Dr. Dinçer serves as the Editor-in-Chief of 5 international academic journals, namely, International Journal of Energy Research; International Journal of Exergy; International Journal of Global Warming; the Open Environmental Engineering Journal; and Journal of Research, Innovation and Commercialization. He also holds different positions in the editorial boards of more than 30 scientific journals, including:

- Associate Editor, Entropy: An International Journal, MDPI, Switzerland;
- Member Editorial Board, International Journal of Green Energy, Marcel-Dekker, USA;
- Member Editorial Board, International Journal of Thermal Sciences, Elsevier Science Ltd., France;
- Member Editorial Board, International Journal of Energy, Environment and Economics, Nova Science Publishers, Inc., USA.

Dr. Dinçer has won a total of 13 international awards, including the Premier's Research Excellence Award by the Government of Ontario in Canada in 2004. His other awards and honors include:

- The 2005 Research Excellence Award, APMC, Ontario (2005).
- Distinguished Researcher Award, KFUPM (2003).
- The President's Special Award, Alumni Association International, Istanbul Technical University (2000).

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## COMSATS' BRIEF AND ANNOUNCEMENTS

### SELECTED FORTHCOMING SCIENTIFIC EVENTS IN COMSATS' COUNTRIES

26-28 September 2012	World Clean Technology Summit (WCTS) 2012, Kampala, Uganda ( <a href="http://pilotinternationalconferences.com">pilotinternationalconferences.com</a> )
25-27 October 2012	4 <sup>th</sup> IEEE International Conference on Adaptive Science & Technology (ICAST-2012), Kumasi, Ghana ( <a href="http://icast-conference.org/icast2012">icast-conference.org/icast2012</a> )
06-08 November 2012	Sixth International Symposium on Telecommunications (IST-2012), Tehran, Iran ( <a href="http://ist2012.itrc.ac.ir">ist2012.itrc.ac.ir</a> )
21-23 November 2012	The 3 <sup>rd</sup> International Symposium on Medicinal Plants, Their Cultivation and Aspects of Uses (3 <sup>rd</sup> ISMP), Petra, Jordan ( <a href="http://3ismp.bau.edu.jo">3ismp.bau.edu.jo</a> )

### Second COMSATS-ISESCO International Workshop on "INTERNET SECURITY: ENHANCING INFORMATION EXCHANGE SAFEGUARDS"

September 16-20, 2012, Amman, Jordan

COMSATS, in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO); COMSATS Institute of Information Technology (CIIT), Pakistan; Inter Islamic Network on Information Technology (INIT); and El Hassan Science City (EHSC), Jordan (the Royal Scientific Society & Princess Sumaya University of Technology), is organizing the second five-day International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' on September 16-20, 2012, in Amman, Jordan. The workshop aims to provide a forum to the young scientists/researchers from the developing countries to share and discuss the latest advancements in the field of Internet security, promote the use of state-of-the-art technologies for protection of network and network-accessible resources from different types of software attacks, and identify effective information/network security solutions for general public, government organizations and commercial ventures.

For more details, please contact Mr. Tajammul Hussain, Advisor (Programmes), COMSATS Headquarters ([husseint@comsats.net.pk](mailto:husseint@comsats.net.pk))

### CALL FOR PAPERS FOR COMSATS' JOURNAL – SCIENCE VISION: VOL. 17

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 the Volume 17 of 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 the journal's website: [www.sciencevision.org.pk](http://www.sciencevision.org.pk). Contributions may be sent to the Chief Editor at: [comsats@comsats.org](mailto:comsats@comsats.org).

### 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, Pakistan.

COMSATS, currently, has 21 countries as its members, spread across three continents, i.e. Africa, Asia and Latin America. 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](http://www.comsats.org).

### COMSATS NETWORK OF INTERNATIONAL S&T CENTRES OF EXCELLENCE

- Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh
- Centro Internacional de Física (CIF), Colombia
- COMSATS Institute of Information Technology (CIIT), Pakistan
- Council for Scientific and Industrial Research (CSIR), Ghana
- 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 (ICES), China
- International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica
- 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
- TÜBİTAK Marmara Research Center (MAM), Turkey
- University Cheikh Anta Diop (UCAD), Senegal
- The Biosphere Reserve – Beni Biology Station (BBS), Bolivia [Under Review]