



# COMSATS Newsletter

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

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Patron  
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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.



COMSATS' delegation led by the Executive Director  
COMSATS at CERN's LHC Tunnel

## Inside this Issue

From the Executive Director's Desk	01
News/Activites/Highlights from COMSATS Secretariat	02
Activities/News of COMSATS' Centres of Excellence	04
Science, Technology and Development	06
Profile of Head of Centre of Excellence: Dr. Richard Annells Director General ICENS - Jamaica	07
COMSATS' Brief and Announcements	08

## From the Executive Director's Desk

There are two places on Earth that stand out as most conspicuous monuments of mankind's scientific endeavours in terms of international cooperation. One of these is located in Geneva (Switzerland) across Franco-Swiss border with original French acronym of CERN, commonly known as the European Laboratory for Particle Physics. CERN is a hotbed of modern science and technology venturing boldly into the secrets of matter by creating conditions that existed at the time of the creation of the universe. Started as a joint European scientific project soon after World-War II, CERN has come to epitomize world peace and stability through scientific cooperation among nations with disparate historical backgrounds and political structures. The fact that CERN facilities are being used by scientists from 113 nationalities is a validation of the premise that Science is a common cause of all humanity, and scientific research is one of the tools to unite peoples of the world.

Another place where confluence of scientific community with diverse socio-political affiliations is found to work comfortably and productively is the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy. The ICTP is a working model of the philosophy that scientific knowledge is a common heritage of all mankind and the economic disparities around the globe can be eliminated by reducing knowledge-divide among nations. Being a truly international forum for dissemination of knowledge across the North and the South, ICTP has provided research and training opportunities to more than 116,000 scientists from 184 countries during the course of its 45 years of operations.

It is easy to see why these two places are among the most promising

sites devoted to mankind's progress and prosperity. Both of these consider scientific knowledge as the ultimate guarantor of human survival and regard international cooperation as an indispensable tool for enhancing this common asset. COMSATS is proud to maintain close ties with both CERN and ICTP. It is no coincidence that the three organizations have a common denominator. The Pakistani Nobel Laureate, Prof. Abdus Salam, whose electro-weak theory is being tested at CERN, was the founder of ICTP and a strong force behind the establishment of COMSATS in 1994.

In January-February 2012, when a delegation from COMSATS Headquarters and COMSATS Institute of Information Technology visited the laboratories of CERN and the offices of ICTP and the Academy of Science for the Developing World (TWAS), Salam's vision in action was palpable. In CERN, agreements were reached to participate in Grid activities relevant to ALICE collaboration and the development of new radiation detectors for ALICE. At ICTP and TWAS, understanding was reached on a number of joint initiatives, as reported in later pages of this Newsletter.

COMSATS is a platform for developing countries to enhance their scientific cooperation. Its Secretariat is based in Pakistan but its ownership belongs to all Member Countries. In the next quarter of this year, a historic meeting of the Commission will be held in Islamabad to enhance the thrust of this organization towards its core mission, i.e. to promote scientific capacity-building as a means of socio-economic progress of Member Countries.

Suggestions by the readers of this Newsletter are always welcome.

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## NEWS/ACTIVITIES/HIGHLIGHTS FROM COMSATS SECRETARIAT

### MINISTER FOR S&T, GOVERNMENT OF PAKISTAN HOSTS A DINNER-MEETING IN HONOUR OF AMBASSADORS OF COMSATS' MEMBER STATES

With an objective to sensitize the Ambassadors of COMSATS' Member States in Pakistan about the upcoming Commission Meeting of COMSATS, the Minister for Science and Technology, Government of Pakistan, H.E. Mir Changez Khan Jamali, hosted a dinner-meeting on 15<sup>th</sup> February 2012 at COMSATS Institute of Information Technology (CIIT). The dinner meeting was attended by envoys of 10 COMSATS' Member Countries, i.e. Bangladesh, China, Egypt, Iran, Kazakhstan, Nigeria, Philippines, Sri Lanka, Syria, and Tunisia. Invitations were also extended to dignitaries and high-level officials from various ministries and government departments, as well as from COMSATS Secretariat and CIIT. These included the Deputy Chairman Senate, Mr. Mir Jan Muhammad Khan Jamali; the Federal Secretary, Ministry of Science and Technology (MoST), Mr. Akhlaq Ahmad Tarar; Executive Director COMSATS, Dr. Imtinan Elahi Qureshi; Additional Secretary, Ministry of Foreign Affairs, Mr. Munawar Saeed Bhatti; Additional Secretary, MoST, Mr. Shaigan Shareef Malik; and Rector CIIT, Dr. S.M. Junaid Zaidi.

The Federal Secretary MoST urged the envoys of COMSATS' Member Countries to use their good offices for ensuring maximum participation from their respective countries to make the Commission Meeting a success in terms of future plans and activities of COMSATS. Speaking on the occasion, the Executive Director COMSATS briefed the participants of the dinner-meeting on the efforts made so far for convening the Commission Meeting informing them of the hospitality and security arrangements being made. Host of the dinner meeting, the Federal Minister for Science and Technology, who also is the Chancellor CIIT, welcomed the envoys of COMSATS' Member States. Sharing his views on the occasion, Mr. Jamali stated, "We are cognizant of the fact that COMSATS' Member States have several common socio-economic problems and most of these problems cannot be solved unless we break the barriers of isolation in science and technology".

The dinner concluded on a note of support for COMSATS on the part of the envoys of COMSATS' Member States, who pledged to do all in their capacity to ensure highest level participation of their countries in the Commission Meeting to be held on 16-17 April 2012.

### COMMITTEES FOR ORGANIZATION OF THE 2<sup>ND</sup> COMMISSION MEETING HOLD A JOINT MEETING

The first joint meeting of the Inter-Ministerial Coordination Committee (IMCC) and Organizing Committee for the convening of the Commission Meeting was held on February 16, 2012, at the Ministry of Science and Technology, Government of Pakistan. The joint meeting was



*Federal Secretary MoST chairing the First Joint Meeting of IMCC and Organizing Committee (Feb. 16, 2012)*

chaired by the Federal Secretary Ministry of Science and Technology (MoST), Mr. Akhlaq Ahmed Tarar.

The Federal Secretary briefly explicated the objectives of holding the joint meeting, which was to review the preparations made by the sub-committees of the Organizing Committee, to ensure timely completion of the organizational tasks related to the Commission Meeting. The Executive Director COMSATS informed the participants about the initiatives taken by COMSATS Secretariat in consultation with the MoST to ensure maximum participation from COMSATS' Member Countries. In the light of the reports presented by the conveners of the sub-committees working on various organizational tasks, important decisions of the meeting, inter alia, related to the following:

- Facilitation of discussions on matters of bilateral interest between the visiting country delegates and important officials belonging to S&T organizations of Pakistan;
- Holding of reception dinner and pre-meeting discussions and consultations with the foreign delegates on 15<sup>th</sup> April 2012;
- Media & publicity arrangements in close coordination with the private TV channels, media agencies and Press Information Department of Government of Pakistan;
- Suitable protocol and fool-proof security arrangements for the visiting country delegates and foreign dignitaries;
- Pak-China Business Forum Exhibition.

### VISITS OF COMSATS' OFFICIALS' TO CERN, ICTP AND TWAS

In order to further strengthen COMSATS' collaborative links with international organizations of the North, a delegation of COMSATS Secretariat and COMSATS Institute of Information Technology (CIIT) visited three European scientific institutions from 30<sup>th</sup> January to 3<sup>rd</sup> February 2012. Some highlights of these visits are as follows:

### Visit to CERN, Geneva (January 30-31, 2012)

Led by the Executive Director COMSATS, Dr. I.E. Qureshi, a delegation of COMSATS visited the European Organization for Nuclear Research (CERN), Geneva, Switzerland, on 30<sup>th</sup> and 31<sup>st</sup> January 2012. Members of the delegation included Rector CIIT, Dr. S.M. Junaid Zaidi; Dean of the Office of Research, Innovation and Commercialization, CIIT, Prof. Raheel Qamar; and Dean Faculty of Sciences, CIIT, Dr. Arshad S. Bhatti. The purpose of the visit was to explore avenues of CIIT's membership of A Large Ion Collider Experiment (ALICE) Collaboration of CERN.

A review of CIIT's contribution as Associate Member of ALICE Collaboration was organized on 30<sup>th</sup> January, where members of the visiting delegation were joined by Dr. Paolo Giubellino (Spokesperson, ALICE Collaboration), Dr. Wisla Carena (CERN Team Leader for ALICE), Dr. Luciano Musa and Catherine Decosse (Resource Coordinators ALICE Collaboration). In a preliminary briefing, the visiting delegates of COMSATS were informed about CERN's activities and recent scientific results obtained during the operation of Large Hadron Collider (LHC) at 7 TeV center-of-mass energy. The COMSATS' officials were then shown around CERN experimental areas, including LHC superconducting magnet test hall, CERN Control Centre (CCC) and LHC accelerator and tunnel. The officials were also escorted to ALICE surface exhibition and ALICE underground experimental area, where a briefing was given by ALICE Spokesperson, Dr. Paolo Giubellino.

A presentation was made on LHC Computing Grid Project of CERN by Dr. Robert Jones, Head of open lab-I.T Department CERN. Other CERN officials that facilitated the visit included Dr. Marta Bajko of Technology Department; Dr. Rende Steerenberg of Beams Department; Dr. Luciano Musa of ALICE & Inner Tracker System and Jean-Pierre Revol, COMSATS' Technical Advisory Committee member and former CERN Team Leader for ALICE.

### Visit to ICTP, Italy (February 2, 2012)

On February 02, 2012, the delegation of COMSATS visited the Abdus Salam International Centre for Theoretical Physics (ICTP) and held a meeting with its Director, Prof. Fernando Quevedo, at his office. The Director ICTP pledged the Centre's help towards COMSATS' Centre of Excellence in Pakistan, COMSATS Institute of Information Technology (CIIT), within its framework, inter alia, through its Federation Scheme and Training and Research in Italian Laboratories (TRIL) programme. CIIT is one of the 105 scientific institutes in 34 States to have an agreement with ICTP under its Federation Scheme. Furthermore, the Director ICTP assured the Executive Director COMSATS that ICTP's Aeronomy and Radiopropagation Laboratory (ARPL) will be glad to assist the COMSATS' International Thematic Research Group on ICTs in its research undertakings.

Separate meetings were also held with the heads and representatives of various groups of ICTP. During the discussions with the ICTP officials, understanding was reached that, inter alia, ICTP officials will provide assistance to CIIT in establishing departments/centres for meteorology and climate research, applied physics (particularly in Lasers and Optics) and biophysics, as well as to train the faculty of CIIT on Liaison with Industry.

### Visit to TWAS, Italy (February 3, 2012)

Visit to the Headquarters of the Academy of Sciences for the Developing World (TWAS) in Trieste, Italy, constituted the last leg of the visit of COMSATS' delegation to scientific institutions in Europe.

A presentation made by Dr. Qureshi on the organizational structure and programmes of COMSATS was attended by Prof. Romain Murenzi, Executive Director TWAS; Prof. M.H.A. Hassan, Treasurer TWAS; and Dr. Peter McGrath, In-charge TWAS Programmes. Prof. Murenzi appreciated COMSATS' endeavours for the cause of South-South collaboration in S&T capacity-building. A suggestion was made by the Executive Director TWAS for COMSATS to become TWAS' partner in its new programme entitled 'Science and Diplomacy'. Dr. McGrath appreciated the successful publication of the profile of COMSATS' Centre of Excellence, ICCBS, produced jointly by TWAS and COMSATS. Cooperation on the publication of other profiles under TWAS' series 'Excellence in Science' will be continued.

The Executive Director COMSATS presented his personal invitation letters to the Executive Director TWAS, as well as Prof. Hassan to participate in the upcoming 2<sup>nd</sup> Commission Meeting of COMSATS.



*The Executive Director TWAS and the Executive Director COMSATS during the latter's visit to Italy*

## ACTIVITIES/NEWS OF COMSATS' CENTRES OF EXCELLENCE

### CIIT-PAKISTAN SIGNS INTERNATIONAL MOUs WITH LEADING UNIVERSITIES

A Memorandum of Understanding (MoU) was recently signed between COMSATS Institute of Information Technology (CIIT) and Washington State University, Pullman, WA, USA. This cooperation is expected to usher a new era of cooperation for CIIT in its quest to attain academic and R&D excellence. Under the collaboration envisaged in this MoU, the two institutions will conduct programmes and activities on basic and applied research, education and training, technology and information-transfer and promote economic development. The MoU was signed by Dr. S. M. Junaid Zaidi, Rector, CIIT and Dr. Elson S. Floyd, President, WSU on behalf of their institutions.

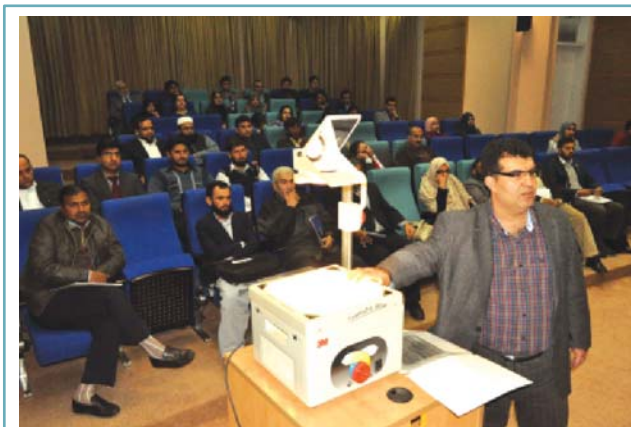
CIIT also signed an MoU with the University of Technology, Baghdad, Iraq on 9<sup>th</sup> January 2012. This is the first MoU of CIIT with an Arab university for mutual cooperation in the fields of Science, Engineering and Technology. The signing ceremony was held at CIIT during the visit of Prof. Ahmed Moosa, Vice Chancellor, University of Technology, Baghdad. On the occasion, the Rector CIIT stated that CIIT will provide all possible support to the Iraqi nation for improving its education sector.

Earlier, an MoU was signed between CIIT and the University of Rostock, Germany. Under the cooperation agreement, six students and two members of faculty have been invited to visit and work in the University's laboratory in Germany for short periods, ranging from three to eight months, on fully funded scholarships.

### DR. CENAP OZEL VISITS CIIT

Under the HEC Visiting Scholars Programme, Prof. Dr. Cenap Ozel from Abant Izzet Baysal University, Bolu, Turkey, visited the Department of Mathematics of CIIT, Islamabad from January 21, 2012 to February 9, 2012. During his visit, Dr. Ozel remained actively engaged in a number of activities. He delivered five seminars (three at CIIT Islamabad Campus, one at CIIT Lahore Campus and one at International Islamic University Islamabad) on the following topics: "Complex Cobordism of Hilbert Manifolds, Divided Power Algebras and Schubert Calculus", "Calculation of Integral Cohomology Algebra of Infinite Dimensional Flag manifolds", "Groebner-Shirshow basis of Affine Weyl Groups  $A_n$ ".

His proposed work for the future aims to: (i) Improve collaboration between the departments of mathematics at both the universities; (ii) Organize international conferences and summer schools each year on mathematics and mathematical sciences alternatively in Pakistan and Turkey; and (iii) Co-supervision of graduate students at CIIT.



*Dr. Cenap Ozel delivering a lecture during his visit to Mathematics Department of CIIT*

### CIIT SCHOLAR VISITS IMR-JAPAN

Dr. Mubarak Ali, Assistant Professor at Department of Physics/Material Science of CIIT paid a visit Institute for Materials Research (IMR), Tohoku University, Sendai, Japan. During his visit, Dr. Ali held a meeting with Prof. Yoshiyuki Kawazoe, world's top scientist and IT expert in simulation & modeling. Prof. Kawazoe showed interest in visiting CIIT.

The objectives of the visit were to: (i) to develop research collaboration between CIIT and IMR of Tohoku University; (ii) to characterize and analyze the samples at IMR; (iii) to tap various opportunities for CIIT at IMR.

### CAPACITY-BUILDING AND R&D ACTIVITIES OF BCSIR-BANGLADESH

In order to indigenously build the national S&T capacity, BCSIR has recently taken the following initiatives:

- Established the "Institute of Mining, Mineralogy and Metallurgy (IMMM)" at Joypurhat, which was inaugurated by the Honourable Prime Minister of Bangladesh, Sheikh Hasina, on 22<sup>nd</sup> January 2012;
- Established Instrumentation & Calibration Service laboratory as the distinctive reference laboratory of the country in chemical metrology;
- Launched "One-stop Analytical Service Cell" with an aim to facilitate and expedite the analytical services and to support effective coordination with clients;
- Established specialized laboratories in the Divisional Cities of Bangladesh.

Amidst the endeavours to enhance its scientific capacities, research undertakings on areas crucial to national development continued at BCSIR.

- Scientists of BCSIR have developed:

- i) A cost-effective and portable fibre-glass biogas digester to generate electricity using biogas technology;
  - ii) Solar grid hybridization technology to save electricity and get uninterrupted power supply in the urban area;
  - iii) Cost-effective and easy-to-use 'Arsenic testing kit' and 'Arsenic removal filter'; and
  - iv) 'Iodine test kit' to detect iodine in salt and 'formalin test kit' to detect formalin in fish and milk.
- BCSIR has received the ISO 17025 accreditation to analyze twelve (12) water-quality parameters.

### **NRC-EGYPT RESEARCH ON APPLICATION OF NANOTECHNOLOGY FOR ELECTRIC POWER GENERATION AND AUTISM**

Prof. Dr. Ahmed Abdel Hamid, Physical Chemistry Department of National Research Centre (NRC), Egypt, revealed a new method for production of electric power and generation of pure hydrogen by adopting nanotechnology procedures using sea-water electrolysis. By using nanometal electrodes, large amounts of pure hydrogen and oxygen are produced, which can be stored by various methods and used directly in a fuel cell. This new procedure has many useful industrial applications, such as treatment of organic industrial wastes, extraction of trace-minerals from salts, as well as sterilization of tap water, petrochemicals and pharmaceuticals.

Prof. Dr. Adel Ashour of Clinical Genetics Department (NRC) recorded the higher prevalence of autism in Egypt in comparison to the international records. Dr. Ashour's study shows that the disorder is prevalent four times more in boys than in girls. While no one gene was identified as causing autism, researchers at NRC are searching for irregular segments of genetic code that autistic children may have inherited. Autism has been shown to occur more frequently among individuals who have certain medical conditions including; fragile X syndrome, congenital rubella syndrome, and untreated phenylketonuria.

### **GENOME OF FIVE MORE PAKISTANIS TO BE SEQUENCED BY ICCBS-PAKISTAN**

Scientists at International Center for Chemical and Biological Sciences (ICCBS), Pakistan, are going to map the genome of five Pakistanis, belonging to Punjabi, Sindhi, Pathan, Baloch and Barohi races, during 2012. Former Chairman of the Higher Education Commission of Pakistan, Prof. Dr. Atta-ur-Rahman, was the first Pakistani whose genome had been mapped by the scientists at ICCBS, in 2011. This was stated by the Director ICCBS, Prof. Dr. M. Iqbal Choudhary, while speaking at the inaugural ceremony of a workshop on "Application of DNA-Sequencing in

Medicine and Biotechnology", at Dr. Panjwani Center for Molecular Medicine & Drug Research (PCMD) of ICCBS, from February 27 to 29, 2012.

The lectures in the workshop focused on principles and techniques of DNA-sequencing, data analysis using Beckman Sequence Analysis software, DNA Sequencing troubleshooting and sequence analysis using modern bioinformatic tools.

### **IRCC-SUDAN PARTICIPATES IN NATIONAL AND INTERNATIONAL SCIENTIFIC EVENTS**

The Sudanese Focal Point of the African Technology Policy Studies (ATPS) in collaboration with the Industrial Research & Consultancy Centre (IRCC), Sudan, organized the Parliamentary Round Table on Science Technology & Innovation (STI), on 16-17 January 2012. IRCC is the host of the national chapter under patronage of the Education & Scientific Research Committee (ERSC) of the National Assembly of Sudan.

The highlights of the event were policy briefings given by experts to mainstream STI in the National Policy agenda of Sudan. The main theme of the meeting was the role of STI in addressing national development agenda. The Round Table was designed to sensitize policy-makers, researchers, private sector actors and the civil society in Sudan on the role of STI for sustainable development; and to introduce the African Technology Policy Studies (ATPS) Network to the stakeholders

Dr. Itmad Awad of IRCC participated with three posters in the field of chemistry of medicinal plant natural products in the 14<sup>th</sup> Annual Congress of the Scientific Association of Colleges of Pharmacies in the Arab World and the 2<sup>nd</sup> International Conference of the Colleges of Pharmacy and Health Sciences, at the University of Science and Technology, Ajman, from 7-9 February 2012.



*Parliamentary Round Table on STI organized in collaboration with IRCC, Sudan*

## SCIENCE, TECHNOLOGY AND DEVELOPMENT

### PRESERVING VACCINES WITH NOVEL MATERIALS

Vaccines save millions of lives every year in the developing countries. However, difficulties arise when appropriate cooling conditions cannot be achieved during the storage and transportation of several temperature-sensitive vital vaccines. This usually happens in poor societies with inadequate refrigeration facilities, lack of ultra modern structures, vehicles and unannounced electricity outages. To retain their effectiveness, most vaccines have to be stored at a well maintained temperature range over a longer period of time. This requires special insulating materials to be used inside the cooling vessels, like icepacks. Such icepacks with novel insulating materials are going to be available soon (*SciDev.Net*, 15 Feb. 2012). The novel materials used in the storage vessels are based on a property called 'phase-change', which keeps the vaccines within the appropriate temperature range preventing them from spoilage. Often the temperature range remains between 2 to 8 degrees Celsius. Currently, icepacks are usually used for the vaccine supply chain to prevent them from heating but icepacks are colder than vaccines need to be, and improperly stored vaccines can freeze and fail to have the desired results. This has become more of an issue as most new vaccines are freeze-sensitive. Used in combination with ice, the phase changing materials could provide additional temperature range stability for vaccines without freezing them. Poor societies can benefit greatly with this new portable refrigeration technique.

### JAUNDICE TREATMENT OF INFANTS WITH L.E.D. LIGHTS

Jaundice in newborn babies, especially in the poor and developing world, is a cause of concern as it inflicts heavy socio-economic and psychological stress on the affected families and communities. The prevalence of jaundice in newborns is around 60 percent on global level. Jaundice is caused by the building up of bilirubin – the yellow coloured remains of old red blood cells – in the bloodstream which a newborn's liver cannot break down. In severe cases the bilirubin, can enter the brain, causing damage to the defense system and brain. Shining blue light incident on the baby for 2-3 days breaks down the bilirubin into a form that can be excreted. But this treatment is expensive and rarely available in remote and rural areas. However, hope for the jaundice affected newborns has greatly increased as two new devices for its treatment are expected to be rolled out very soon (*SciDev.Net*, 20 Feb. 2012). These two new machines use high-powered light emitting diode (LED) lights which are more energy efficient and long-lasting than the compact fluorescent lights already in use. The devices have been tested successfully and found satisfactory. Moreover, these devices are cheaper than the ones currently being used and are reported to be very useful for the poor and developing countries.

### NEW BUILDING MATERIALS FROM PLANT-BASED INGREDIENTS

High cost of construction materials in the developing countries is a major problem for the people and is responsible for obstructing economic progress. Buildings constructed from cement and concrete require enormous energy for cooling and heating purpose, especially in locations having extreme weather conditions. This, in turn, contributes to increased environmental problems. Researchers have now developed a low-cost construction material made of clay and sand mixed with fibres from Kenaf plant, which belongs to the cotton family (*SciDev.Net*, 28 Feb. 2012). The Kenaf based construction material is cheaper and stronger than ordinary building materials. It provides excellent insulation in the hot climate as well as for blocking out sound. The Kenaf plant has no detrimental effect on soil quality and has high yields even without fertilizers, making it a valuable and environmentally sustainable crop. This encouraging development has paved the way for rural farming communities to build comfortable, affordable homes for themselves and their families without causing damage to the environment.

### CHEAP SOLAR CELLS USING PLANT WASTE AND NANOTECHNOLOGY

Solar energy is the much sought-after alternative to the conventional fossil produced energy due to rising concerns of environmental pollution. Researchers around the world are endeavouring to produce cheap solar cells from materials which are easily available and can be conveniently processed to efficient and cost-effective end-products. The poor and developing countries need the supply of such products much more than the rich and industrialized societies. Such a possibility seems to be very near as reported by *SciDev.Net* (16 Feb. 2012). According to this report, remote communities could, in the foreseeable future, make their own solar cells using waste vegetation on the basis of a design developed by researchers in Switzerland and the USA. The technology was inspired by photosynthesis. Attempts, in the past, have been made to make solar cells by extracting some of the molecules responsible for photosynthesis from the plants, to produce electric current when exposed to sunlight. A new method has been found to expose more of the cell to the sun for better absorption by using zinc oxide nanowires and titanium dioxide sponges on a layer of glass coated with photosynthetic molecules. This system increases the conversion efficiency of sunlight to electrical current. It leads the way to enable the rural communities to mix waste vegetation, even grass clippings, into a bag containing the zinc and titanium, and paint the mixture onto their roofs to start generating electricity. This simple technology will have great benefits for the poor consumers and small enterprises.

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

### DR. RICHARD ANNELLS, DIRECTOR GENERAL ICENS – JAMAICA

Dr. Richard Annells was appointed Director-General of the International Centre for Environmental and Nuclear Sciences (ICENS) at the University of the West Indies, Kingston, Jamaica, on the retirement of Professor Gerald Lalor, in September 2011. In addition to continuing Professor Lalor's work on following trace-elements through the important chain: soils→ plants and animals→ humans, the new Director General ICENS plans to deepen the Centre's knowledge of mineral materials, particularly under new collaborative arrangements, to identify bedrock sources of potentially toxic trace elements or new occurrences of economic minerals and to recycle industrial wastes for use as new materials. Dr. Annells also plans to start new research work on some of the interests and unsolved problems from his main career.



Dr. Annells did his BSc (Hons) in Geology from the University of St. Andrews, Scotland, in 1965. In 1969, he was awarded a Ph.D degree from the same university for research in petrology initiated with the Icelandic Scientific and Industrial Research Institute, Reykjavik, on the root structures of a large extinct tertiary volcano exposed on the eastern side of the Mid-Atlantic Ridge in northern Iceland. The research resulted in tracing distinctive magma types from depth upwards to their points of eruption as lava flows. During a subsequent Postdoctoral Research Fellowship with the Geological Survey of Canada, he investigated Proterozoic copper-bearing volcanic rocks of the Mid-Continental Rift in the Canadian Shield, Lake Superior, a major belt of flood basalt eruptions. He discovered the remains of a major central volcano with large volumes of andesitic lava consisting of what was then the world's oldest known unaltered natural glass (1 billion years old). After eruption, this remarkable lava had clearly remained in a part of Earth's crust for 1 billion years with very low natural heat flow and was subsequently investigated as a potential material for safe long-term containment and storage of radioactive waste.

From 1972 to 2002, Dr. Annells worked with the International Division of the British Geological Survey (BGS) as a Principal Geologist, Project Manager and Consultant. During his long-haul professional career at BGS, Dr. Annells worked in field and laboratory under bilateral cooperation programmes for geological mapping, geochemical and mineral exploration of chromite, gold and base metals in widely different terrains in Bolivia, Colombia, Egypt, Iran, Laos and Oman, funded by the UK, EU, World Bank and Asian Development Bank. During this period, he also took part in CENTO expert visits to key mining areas in former ocean-floor terrains in Iran, Pakistan and Turkey. All of these projects ran on a 'learning by doing' basis, in which geologists from the British Geological Survey (BGS) and local counterpart organizations worked side-by-side to share all field, laboratory and office tasks. In 1991-1992, Dr. Annells oversaw the development of new geological projects for BGS in the Czech Republic, Slovakia, Kazakhstan and Ukraine, and was later involved in geoscience information systems and quality control of the new BGS 1:50,000 scale digital geological maps of the UK. From 1993 to 1995, he

served as the Director of the UK Research and Higher Education European Office in Brussels, which brokered partnerships, proposals and funding for new EU research projects between continental European and over 120 British universities and research institutes.

In 1996, Dr. Annells was appointed the first Secretary General of the association EuroGeoSurveys, a new non-profit organization formed by the Directors of the National Geological Surveys of all the EU member and associate countries (then 18 in number) with the aim of increasing geoscience inputs to all areas of EU policy-making. An important part of this work involved briefing the EU institutions on the sophisticated research required to develop economic mineral resources and also the need to understand the geological dimensions essential to solving environmental issues. He established a Bureau in Brussels, visited each member of BGS to find out their research priorities, and had several meetings at the European Commission, European Parliament and with other key officials to assist them with policy formulation, and to develop new research projects on mineral and water resources, geoinformation, remote sensing, natural hazards, marine geology and environmental topics including climate change. In 2002, Dr. Annells began a new career as an independent consultant, framing new R&D proposals on minerals technology, seismology and new construction materials. He moved back to practical geology in 2006 and carried out field and technical reviews of mineral exploration projects, mostly related to volcanic structures in eastern Armenia, Europe, Greenland, Guinea, Iran, Liberia, Madagascar and Niger, but also including searches for diamonds and uranium.

Dr. Annells is a Fellow of the Institute of Materials, Minerals and Mining (FIMMM) of London and a Chartered Engineer (CEng) with numerous publications, maps and reports on geology, mineral exploration, environmental and sustainable development topics and related policy. He has over 40-year world-wide experience in project management, mineral exploration, due diligence, training and quality management.

Dr. Annells speaks English, French and Spanish and is married with two children.

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## COMSATS' BRIEF AND ANNOUNCEMENTS

### SELECTED FORTHCOMING SCIENTIFIC EVENTS IN COMSATS' COUNTRIES

7-9 May 2012	International Conference on Health Informatics (ICHI-2012), Amman, Jordan ( <a href="http://www.arab-health.org/ichi2012/index.php">www.arab-health.org/ichi2012/index.php</a> )
29-30 May 2012	PAK-US Workshop on Applications of NanoTechnology (WANT-2012), Karachi, Pakistan ( <a href="http://www.iccs.edu/PakUsWorkShop.php">www.iccs.edu/PakUsWorkShop.php</a> )
05-06 July 2012	International Conference on Forest Mountain & People 2012, Colombo, Sri Lanka ( <a href="http://www.futureevents.org">www.futureevents.org</a> )
15 July-04 Aug. 2012	Second Biennial African School on Fundamental Physics and its Applications (ASP-2012), Kumasi, Ghana ( <a href="http://africanschoolofphysics.web.cern.ch/africanschoolofphysics/">http://africanschoolofphysics.web.cern.ch/africanschoolofphysics/</a> )

### 2<sup>ND</sup> COMMISSION MEETING OF COMSATS ISLAMABAD, PAKISTAN (April 16-17, 2012)

The Chairperson of COMSATS, the Prime Minister of Pakistan, Syed Yusuf Raza Gilani, is convening the 2<sup>nd</sup> 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. For queries, please write to: [comsats@comsats.org](mailto:comsats@comsats.org).

### 15<sup>TH</sup> MEETING OF COMSATS COORDINATING COUNCIL GEBZE/KOCAELI, TURKEY (May 24-25, 2012)

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) is pleased to announce the convening of 15<sup>th</sup> meeting of its Coordinating Council to be held in Gebze/Kocaeli, Turkey, on 24<sup>th</sup>-25<sup>th</sup> May 2012. The meeting is being hosted by COMSATS' Centre of Excellence in Turkey, TÜBİTAK Marmara Research Center (MRC). The Coordinating Council meets every year to: review the activities of COMSATS' Network; follow up on the decisions and recommendations made in the last meeting; and outline the future course of action.

### CALL FOR PAPERS FOR COMSATS' JOURNAL – SCIENCE VISION: VOL. 16

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 16 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 COMSATS' official website: [www.comsats.org](http://www.comsats.org) or 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 (HIASST), 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
- The Biosphere Reserve – Beni Biology Station (BBS), Bolivia
- TÜBİTAK Marmara Research Center (MRC), Turkey