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Patron

Dr. Imtihan Elahi Qureshi, *T.I.*
Executive Director

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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.

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From the Executive Director's Desk

The first decade of the 21st century has drawn to a close with dampened hopes of achieving all Millennium Development Goals (MDGs) across the globe. The UN Secretary General had earlier chosen to entitle his report to the General Assembly as "Keeping the Promise"; however, it presented a mixed picture of insufficient progress on some of the most important targets. Especially, the reduction of poverty and hunger still remains to be the most challenging goal in sub-Saharan Africa and Southern Asia. The global food and financial crises in 2008 further contributed to worsening living conditions of large segments of populations in developing countries. The number of undernourished people, all over the world, has registered significant increase with UN estimates, indicating an all-time high figure of over one billion people. Similarly, there remains much to be desired to achieve the MDG of ensuring environmental sustainability, where regressive trends emanating from climate change are posing new challenges. The devastation caused throughout the length and breadth of Pakistan, due to unprecedented floods in July-August 2010, was a grim reminder that the countries who have contributed least to the problem of global warming may be the most hard-hit victims. The ending of the year 2010 also witnessed a debacle on achieving the target of reducing biodiversity loss, as committed by the world leaders in Convention on Biological Diversity (2002).



The Vice Presidents and Directors of TÜBİTAK MRC during a presentation about COMSATS' programmes by the Executive Director COMSATS

The sustainable and equitable development would require massive reallocation of resources and intensive use of S&T to achieve a modicum of success by 2015. The countries of the South have no options but to invest heavily in developing appropriate technologies that address their pressing needs of socio-economic development. For this purpose, COMSATS is making all possible efforts within its means to garner support for its South-South cooperation programmes, implemented through COMSATS' affiliated Centres of Excellence in various countries. To achieve the same, a visit to the TÜBİTAK Marmara Research Centre (MRC) in Turkey was undertaken in December 2010 (page-2), and possibilities of trainings at this prestigious R&D Centre were explored for the benefit of scientists and technicians in other COMSATS' member countries, especially those in Africa and the Middle East.

With respect to the dissemination of relevant information through this Newsletter more effectively, it is planned to upgrade its format and contents with effect from the next volume. Any proposals in this respect would be very welcome.

NEWS/ACTIVITIES/HIGHLIGHTS FROM COMSATS SECRETARIAT

E.D. COMSATS VISITS REPUBLIC OF TURKEY

The Executive Director COMSATS, Dr. I.E. Qureshi, undertook visits to five Member States of COMSATS, Syria, Egypt, Iran, Jordan and China, in early 2010. In the 13th meeting of the Council held in May 2010 he was mandated to visit more Centres of Excellence, including Brazil and Turkey, whenever possible, to motivate their governments to become members of the Commission". The specific mention was made of Brazil and Turkey since COMSATS' Centres of Excellence exist in these countries; however, they have not signed the International Agreement to join the Commission. The purpose of the visit to Turkey was thus to: get first-hand information about the research work being undertaken in MRC's seven institutes; discuss avenues of greater participation of MRC in COMSATS' programmes; and meet higher officials of TÜBİTAK and to extend offer of COMSATS' Membership to Turkey. A brief report of the visit is as follows:

Visit to TÜBİTAK Marmara Research Centre (MRC)

The Executive Director COMSATS was invited to visit Marmara Research Centre (MRC) in Istanbul (Turkey), which is one of the major R&D centres operated by TÜBİTAK – the Scientific and Technological Research Council of Turkey. The TÜBİTAK MRC has been affiliated with COMSATS as its Centre of Excellence since 1994.

Dr. Qureshi's visit to laboratories of MRC was preceded by presentations about research and development work being conducted in its seven institutes: Energy Institute; Chemistry Institute; Materials Institute; Environment Institute; Food Institute; Genetic Engineering & Biotechnology Institute; and Earth & Marine Sciences Institute. Dr. Qureshi was shown around a few of the selected institutes. He asserted the need for greater participation of MRC in scientific activities of COMSATS. Appreciating the quality of R&D work taking place in the Centre, he deemed it a strong link in the

chain of COMSATS' Centres of Excellence.

Visit to TÜBİTAK Headquarters

In order to explore the possibility of Turkey joining COMSATS as a Member State, the Executive Director visited the Headquarters of TÜBİTAK in Ankara, where he met the Vice President of TÜBİTAK, H.E. Prof. Dr. Ömer Anlağan, and the senior officials of the Council relevant to international cooperation and bilateral/multilateral relations. A presentation was made about the organizational structure and role of TÜBİTAK for S&T development in Turkey by Prof. Anlağan.



Dr. I.E. Qureshi presenting COMSATS' shield to Dr. Ömer Anlağan, Vice President TÜBİTAK

In his multimedia presentation made in front of several senior officials of TÜBİTAK, the Executive Director highlighted the role played by COMSATS to foster South-South scientific cooperation since its inception in 1994. It was noted that Turkey is

already making intellectual contributions towards COMSATS' programmes through its Marmara Research Centre, however it would be helpful if Turkey joins the organization as a Member State. It was pointed out that Turkey can play a leadership role for scientific development of the South. The use of COMSATS' platform for enhancing Turkey's involvement in S&T projects in the region would be in the best interest of Turkey's industrial and scientific institutions. During the meeting, the scope of COMSATS' activities was thoroughly discussed and an offer of COMSATS' Membership was extended to Prof. Anlağan for the consideration of approval by relevant bodies.

Visit to Istanbul University

In his capacity as the Chairman Board of Governors of COMSATS Institute of Information Technology (CIIT), Dr. Qureshi also visited Istanbul University, where he met its Vice Rector, Prof. Dr. Çiğdem Kaycan, and Chairman of the International Relations Committee, Dr. Mehmet Şükrü Tekbaş. The University's history dates back to 1453, when Sultan Mehmet conquered Constantinople (Turkey). Its present campus, founded in 1865-1866, accommodates over 70,000



Dr. I.E. Qureshi with Vice Presidents of TÜBİTAK MRC, Dr. Mehmet Demirel and Dr. Sunullah Ozbek

students and 15,000 administrative and academic staff. Possibilities of academic cooperation between CIIT and Istanbul University were discussed during the meeting.

ACTIVITIES OF THEMATIC RESEARCH GROUPS

During the months of November and December 2010, COMSATS' developmental activities by means of its thematic research groups have been initiated by the designated lead Centres. The idea of the establishment of these research groups was initially coined in the 10th meeting of the Council, held in Egypt, in 2007. Subsequently, eight thematic research groups were created with an objective to achieve South-South cooperation by undertaking well-defined joint research projects in various fields with the participation of research workers belonging to different institutions of COMSATS' member countries.

As mandated by the 13th Coordinating Council meeting held in Italy during May 2010, these thematic research groups are to hold foundation meetings to consider technical feasibility of carrying out joint research projects. The foundation meetings of the groups deliberated on: the title and broad outlines of the joint research project(s); distribution of the assignments for project formulation and execution; follow-up meeting(s) of researchers; and requirements of trainings, etc. During the reporting period, foundation meetings of two thematic research groups and a preparatory meeting of one were held. A brief on these is as follows:

Foundation Meeting of Thematic Research Group on 'Climate Change and Environmental Protection'

COMSATS and the International Centre for Climate and Environment Sciences (ICCES), Beijing, China, jointly held the Foundation Meeting of the thematic research group on 'Climate Change and Environmental Protection', in Beijing, on November 20, 2010. This meeting was held in conjunction with CTWF International Workshop on 'Climate and Environmental Change', held on 17-19 November, 2010. The group comprises two Centres of Excellence of COMSATS, ICCES-China (designated Lead Centre) and CIIT-Pakistan, as well as six other organizations from Pakistan, Sudan, Zimbabwe and Nepal.

The meeting resulted in the identification of common areas of research of the participating institutions, and the selection of a joint research project titled: 'Multi-scale Climate Variations and its Relation with Atmospheric Circulations'. The collaborating partners of the joint research project from amongst the participating institutions were identified and broad outlines of the joint research project were defined. The participating institutions agreed to share the available laboratory resources within the group and to provide necessary training to the researchers in order to meet the needs of the project. CIIT-Pakistan offered to host the second meeting of this thematic research group.

Foundation Meeting of Thematic Research Group on 'Natural Products Sciences'

COMSATS in collaboration with the International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, held the Foundation Meeting of the thematic research group on 'Natural Product Sciences', on November 26, 2010, in Karachi. ICCBS hosted this meeting in conjunction with its 12th International Symposium on Natural Product Chemistry (page-5). ICCBS is the designated Lead Centre for this thematic research group that has five collaborating institutions as its members: NRC-Egypt; IRCC-Sudan; TIRDO-Tanzania; RSS-Jordan; and IROST-Iran. Other participating institutions of the meeting included: Department of Science Laboratory Technology of the Federal Polytechnic (Nigeria); Institute of Fundamental Studies (Sri Lanka); Department of Biochemistry and Molecular Biology, University of Dhaka; Department of Biology, Ege University (Turkey); and Lorestan University of Medical Sciences (Iran). In all, nineteen participants from eight countries, Bangladesh, Egypt, Iran, Jordan, Nigeria, Pakistan, Sudan and Turkey, attended the meeting.

The establishment of the group was formalized during the Foundation Meeting through a Memorandum of Understanding (MoU) with a view to develop cooperation and build a group of researchers from developing countries to conduct joint research, as well as share their expertise and lab resources. Besides endorsing the establishment of the thematic research group, the MoU defined the specific area of collaboration as 'Phytochemical and Pharmacological Studies on Medicinal Plants and Standardization of Herbal Plants of Indus and Nile Valleys'. During the meeting, Prof. Dr. M. Iqbal Choudhary, Director ICCBS, announced five scholarships for COMSATS' Member States; three for post-doctoral research and two for technical training.

Preparatory Meeting of the Thematic Research Group on 'Information and Communication Technologies'

A preparatory meeting of the Thematic Research Group on Information and Communication Technologies was held on the sidelines of the International Conference on Frontiers of Information Technology (page-5), organized by COMSATS Institute of Information Technology (CIIT) in Islamabad (Dec. 21-23, 2010). The meeting was chaired by the Rector CIIT, Dr. S. M. Junaid Zaidi, and was attended by Pakistani experts from local universities, as well as those working abroad. CIIT is to convene an exclusive meeting of the thematic research group on ICTs during the first quarter of 2011 to deliberate on matters relating to the launching of a joint research project. The members of this group are: TIRDO-Tanzania; RSS-Jordan; IRCC-Sudan; and NMC-Nigeria. The purpose of this preparatory meeting was to discuss the preliminary matters relating to identification of a project proposal, project leader, participating organizations, date, venue, and tentative agenda.

ACTIVITIES/NEWS OF COMSATS' CENTRES OF EXCELLENCE

ESCWA'S NEW REGIONAL TECHNOLOGY CENTRE TO BE LOCATED AT RSS, JORDAN

The new regional Technology Centre of the United Nations' Economic and Social Commission for Western Asia (ESCWA) would be placed at the Royal Scientific Society (RSS), Jordan. An agreement to this effect was signed on 26th December 2010. The placement of ESCWA Technology Centre in RSS, Jordan, is a follow-up on the decision of the UNO, under which Hashemite Kingdom of Jordan was selected as the host country for the ESCWA Technology Centre, in August 2009. In May 2010, the twenty-sixth ESCWA Ministerial Session adopted the resolution and the Statute of the Centre to be established in Jordan after signing of the required Host Country Agreement. Speaking on the signing ceremony of the Host Country Agreement, the President of RSS, HRH Princess Sumaya bint El Hassan, praised the work of ESCWA in helping to build institutional links in the region. "Both ESCWA and the Royal Scientific Society", stated Princess Sumaya, "are seeking to improve the lives of many by facilitating the innovative and entrepreneurial gifts of the few. The ESCWA Technology Centre's vision of technology nurtured for socio-economic development matches our own."

RSS-JORDAN AND RACEF-SPAIN DISCUSS COOPERATION IN EDUCATION, ECONOMICS AND MIGRATION POLICIES

Barcelona-based Real Academia de Ciencias Económicas y Financieras (RACEF) and RSS-Jordan, co-hosted a meeting titled 'The Gathering of Nations through Culture and Science'. Held under the patronage of their Majesties, King Abdullah-II ibn Al Hussein and King D. Juan Carlos-I, the event took place in Amman on November 8, 2010.

Princess Sumaya bint El Hassan, President of RSS; Sr. D. Jaime Gil Aluja, President of the RACEF; and Sr. D. Javier Sangro de Liniers, the Spanish Ambassador to Jordan, delivered the welcome addresses. His Excellency Dr. Walid Maani, Jordanian Minister of Higher Education and Scientific Research, delivered the first lecture on 'Education: Beginning of Mutual Understanding Among Nations'. Lectures on economic cooperation were delivered by Ambassador Hassan Abu Nimah; and H.E. Antonio Pont Amenós, Permanent Member of the RACEF, while H.E. Lorenzo Gascón, Vice President and Permanent Member of the RACEF; and Dr. Musa Shteiwi, Department of Sociology,

University of Jordan, discussed migration policies. The plenary sessions were followed by a roundtable discussion and closing remarks by Princess Sumaya.

HIAST ORGANIZES A WORKSHOP FOR DIGITAL ENHANCEMENT OF ARABIC WEB CONTENT

The Higher Institute for Applied Sciences and Technology (HIAST), Syria, in collaboration with the Syrian Ministry of Higher Education, the Arab League Educational Cultural and Scientific Organization (ALECSO), and King Abdulaziz City for Science and Technology (KACST), organized a workshop on "Enhancement of Digital Arab Content" (October 16-19, 2010). Held under the patronage of the Vice President of the Syrian Arab Republic, Dr. Najah Alattar, who had been representing the Minister of Higher Education, Dr. Ghias Barakat, the workshop was organized at HIAST. The Syrian Minister of Communication and Technology, Dr. Imad Sabouni, was also present on the occasion. About 120

researchers representing universities and research centres of Algeria, Britain, Czech Republic, Egypt, France, Greece, Lebanon, Libya, Morocco, Palestine, Saudi Arabia, Syria, Tunis and United Arab Emirates attended the workshop.

The workshop aimed to explore the latest developments in the field of automated processing of the Arabic language, and to identify the on-going academic research programmes at universities and research centres in Arab countries and worldwide. The workshop

covered the following topics: Arabic Ontology and Semantic Networks; Search Engines; Grammatical Analysis; Information Retrieval; Automated Configuration and Spelling.

TÜBİTAK MRC, TURKEY, TO HELP ADDRESS NATIONAL BIODIVERSITY CONCERNS

Under the National Biological Diversity Strategy and Action Plan of the Turkish Government, all the large mammal species of Turkey are being genotyped by three different DNA markers for the first time. In addition, DNA and cell-banks will be established for these species. The field studies for photo-trapping and collar-fitting will be conducted by the Ministry of Environment and Forestry, General Directorate of Nature Protection and Natural Parks, while the laboratory analysis will be conducted by Genetic Engineering and Biotechnology Institute of the TÜBİTAK Marmara Research



President of RSS and other participants at the signing ceremony of the Host Country Agreement

Center (MRC) and Selçuk University. The ecological and genetic data will be used to revise the conservation and management plans. The banks will be used in the future research studies to identify existing biodiversity, as well as in biotechnological research studies (e.g. cloning wild animals, detection of disease-resistant genes, gene-transfer to domestic animals, etc.). Moreover, it is aimed that the outcomes will help in: estimating hunting quotas; wild-life criminology studies; and preparing a reference book on large mammals of Turkey.

ICCBS-PAKISTAN ORGANIZES INTERNATIONAL SYMPOSIUM ON NATURAL PRODUCT CHEMISTRY

The International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, held the 12th International Symposium on Natural Product Chemistry, during November 22-25, 2010. The aim of this symposium was to bring together the leading experts in the field of natural product sciences from all around the world and build a global partnership for sustainable utilization of natural resources for the benefit of humanity and rapid development of the countries of the South. Over 500 scientists, including 50 researchers from over 30 countries, participated in this event, making it one of the largest science conferences in Pakistan during the recent years.

The symposium included invited and session lectures from many eminent international scientists covering topics on: Isolation and Structure Elucidation of Natural Products; Synthesis of Natural Products; Pharmacology and Bioassays on Natural Products, Biotechnology for Natural Product Developments; Development in Spectroscopic Techniques; Rational Drug Designing; Medicinal Plants Cultivation and Conservation; Chemistry of Marine and Micro-organisms; and Molecular Medicine.

CIIT-ABBOTTABAD ORGANIZES 8TH CONFERENCE ON FRONTIERS OF INFORMATION TECHNOLOGY

COMSATS Institute of Information Technology (CIIT)-Abbottabad organized the 8th Conference on Frontiers of Information Technology (FIT-2010) in Islamabad, on December 21-23, 2010. The event was organized in collaboration with IEEE's Technical Committee on Scalable Computing (TCSC), Association for Computer Machinery (ACM), the Higher Education Commission (HEC) of Pakistan, Inter-Islamic Network on Information Technology

(INIT) and National Testing Service (NTS). Former Vice-Chancellor of Lahore University of Management Sciences (LUMS), Professor Dr. Syed Zahoor Hassan, delivered the keynote address on 'IT and Innovation: Opportunities and Challenges' at the opening ceremony. More than 188 research papers from 27 countries were received for FIT-2010, out of which 55 were selected for oral presentation after a thorough review process. A total of 25 sessions were organized for the subject presentations with the world renowned researchers/scholars as chairpersons and co-chairpersons of the technical session.

A total of 26 invited talks were included during the technical sessions. The invited speakers represented various universities from the US: Iowa State University, University of Central Florida, University of Minnesota, State University of New York, and National University San Diego; Johannes Kepler University, Austria; Kuwait University, Kuwait; University of Burgundy, France; and University of Warwick and Oxford University, the UK; as well as those from within

Pakistan – Lahore University of Management Sciences (LUMS), National University of Science and Technology (NUST), Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI), NED University of Engineering & Technology; Foundation for Advancement of Science and Technology (FAST); Sir Syed University of Science and Technology; and other campuses of COMSATS Institute of Information Technology.

The proceedings of this event included: PhD Symposia, exhibition of undergraduate projects, and tutorial sessions. Five PhD symposia provided the young scholars an opportunity to present their research work to the academicians apart from their supervisors and seek feedback from a whole range of leading scientists and fellow students in their respective fields. The exhibition of research projects was organized to promote innovation at the undergraduate-level. A total of 29 projects were showcased by undergraduate students of different CIIT campuses. The projects included 16 from the field of Computer Sciences and 13 from that of Electrical Engineering. Young developers discussed the technicalities with experts and received advice for improvements and development of new projects. During the concluding panel discussion, the participating Information Technology experts deliberated on the untapped potential of ICTs and elaborated on ways and mechanisms to better benefit from it.



Participants of the inaugural ceremony of CIIT's 8th Conference on Frontiers of Information Technology

SCIENCE, TECHNOLOGY AND DEVELOPMENT

HEARTENING NEWS FOR HEART AND LUNG PATIENTS

The increasing death toll in the poor and developing countries due to tuberculosis and heart diseases is alarming and almost uncontrollable by the governments or NGOs. These two life-threats have enormous impact on the economic and social well-being of the societies all over the globe. Two breakthroughs in this context have been reported recently in the scientific literature.

The first discovery relates to a blood test, which is diagnostic of heart risks (*Science News*, 7 December 2010). It is known that factors such as obesity, diabetes or high blood pressure increase a person's proneness to heart diseases. Efforts to identify other early-warning signs have largely focused on C-reactive protein and B-type natriuretic peptide (BNP), which have been tested as potential tip-off biomarkers. Only BNP blood level has shown some predictive ability. New studies have shown that measurements on a blood compound called cardiac troponin-T may outperform the previous tests as a heart-risk indicator. It has been inferred that people carrying high levels of troponin-T are more likely to have deaths due to heart failure. Predictive blood tests for troponin-T would provide reliable means to having an early warning against heart diseases and its timely treatment for saving precious human lives.

The second good news is about a new test, which detects more than 90 per cent of TB cases, including drug-resistant TB and TB in HIV patients (*SciDev.Net*, 10 December 2010). This new test represents a major milestone for global TB diagnosis and care. The test will cut down diagnosis time from upto 2 months to just 100 minutes. Efforts are being made to reduce the cost of equipment required for the testing purpose. The price for a single test will cost around US\$ 17. It is said that this price may further go down to US\$ 14 within a year and to US\$ 10 within 3 years. Considerable socio-economic gains are expected from this scientific advancement in medicine.

HOLOGRAPHIC VIDEOS

The emergence of holographic videos has been reported by *Eureka! Science News* (3 November 2010), referring to a research leading to the development of a holographic system that can transmit a series of 3-D images in near real-time mode. This would serve as a precursor to holographic video-conferencing. The system includes a novel photorefractive polymer coupled to a unique system for recording and transmitting 3-D images of individuals and objects via Ethernet. This breakthrough opens new opportunities for optics as a means to transport images in real time. Such a system can have an important impact on telepresence, telemedicine, engineering design, manufacturing and other applications. It can also contribute to global efforts aimed at creating a cleaner environment for

the present and coming generations.

CLIMATE ALERT

Climate change vulnerabilities and disasters have been a major cause of concern for the world for the past several years. The Climate Change Conference held recently in Cancun (Mexico) has released a report, which indicates that one million people may be dying per year from 2030 onward due to causes relating to climate change (*SciDev.Net*, 7 December 2010). The report details 53 cost-effective ways to avoid these deaths, after examining vulnerabilities in 184 countries. The impacts of climate change are mostly on children and the poor and, thus, it could be a major cause of under-development. The report also reviews the performance of more than 50 different kinds of actions that could limit the negative effects of climate change. The setting up of early-warning systems locally for coming disasters was considered the most cost-effective and relevant to low-income countries, where 90 per cent deaths occur due to natural disasters. Will the developing countries take note of this 'Climate Alert' and make use of the knowledge, contained in this scientific study for the benefit of their people, is yet to be seen.

SMART FARMING

World economic crisis, increasing food prices, natural disasters due to climate change, energy insecurity and prevalence of epidemics over the past several years have increased poverty and hunger in the developing countries. According to FAO estimates, around 1 billion people in the world are under-nourished. The prospects of hunger reduction are bleak due to alarming increase in the world population. Two encouraging findings address this problem. The first one published in *SciDev.Net* (22 December 2010) talks about smart farming that is gaining popularity in the West. Farmers in the US and UK are using precision farming techniques to increase crop-yields: employ economic but effective irrigation methods; and reduce water and fertilizer wastage, etc. with state-of-the-art technologies. The gains are expected to be considerably high and full of promise for the agriculturists around the world. The second news advocates farming in the cities by cell-culture instead of agriculture to help feed the world (*SciDev.Net*, 2 December 2010). It involves growing GM crops in small spaces using high-tech tools, generating clean products 24 hours a day, every day, regardless of the external climate factors. This urban-biofarming is suitable for big cities. The researchers have reported success of cell-culture in certain daily use products and several more are under investigation. Due to expanding population and rapid urbanization, the cell-culture may become a more economically feasible option. If developing countries start investing in cell-culture agri-production at the present stage of development, they may attain significant food-security in the coming years.

PROFILE OF COMSATS' INTERNATIONAL S&T CENTRE OF EXCELLENCE

INTERNATIONAL CENTRE FOR ENVIRONMENTAL AND NUCLEAR SCIENCES (ICENS), JAMAICA

Introduction

International Centre for Environmental and Nuclear Sciences (ICENS) based in Jamaica is one of the important members of COMSATS' Network of Centres of Excellence since 1994. The Centre is located at Mona Campus of the University of the West Indies. It occupies an attractive modern building on 950 sq. m.

ICENS is a multi-disciplinary research centre whose work is based largely on the applications of the "Peaceful Uses of the Atom". At present, the main programmes of the Centre revolve around environmental geochemistry and health, with an overall objective of contributing to critical socio-economic issues, including environmental protection, and the development and retention of local scientific talent of Jamaica.

Goals

The primary goals of ICENS are to: conduct multi-disciplinary research related to environment; help provide solutions to developmental problems; contribute to the growth and retention of a cadre of excellent scientists and technologists of Jamaica

Services

Services provided at ICENS include:

- Elemental Analysis specializing in trace metals
- Blood lead analyses
- Radiation monitoring
- Personal Dosimetry
- Mineral exploration
- Consultations related to trace metals and their effects

Research and Development Activities

The Centre's focus on environmental geochemistry provides data that are applicable to agriculture, natural resources identification, environmental assessment and preservation, man-made and natural hazards, water-resource management, and the marine and coastal zones. These areas are fundamental to sustainable socio-economic development and reflect many of the priority areas of the Jamaica's National Science and Technology Policy. The specific areas of Interest of ICENS include:

- Geochemical Baselines;
- Relationship between the Geochemistry of the Natural Environment and Health;
- Agriculture and Food Security;
- Global Environmental Change and Potential Threats to Jamaica;
- Spatial Geoscience;
- Water Resources Management; and
- Peaceful Applications of the Atom.

Analytical and Support Facilities

ICENS has a diverse range of modern laboratories covering several aspects of the geochemical and nuclear sciences. The analytical and support facilities the Centre possess are as follows:

Nuclear Laboratory: The Nuclear Laboratory at ICENS operates two very powerful complementary nuclear techniques that provides for enormous analytical needs for a wide range of elements. These techniques are Neutron Activation Analysis and X-Ray Fluorescence.

Solutions Analysis Laboratory: In addition to the instrumental techniques, this laboratory carries out standard wet chemistry methods, such as titrations and pH measurements to analyse samples in solution as required.

Sample Preparation: Prior to analysis, all samples collected by ICENS are logged, processed, labelled and stored in the sample preparation facility. The facility processes a range of materials including rocks, sediments, soils, food, solutions and human tissues.

Information Systems: The Information Systems Unit was established in 1986 with a mandate to capture, maintain and make available in a digital medium, all the georeferenced data collected and generated from the various projects along with any other relevant information.

Thermoluminescence Dosimetry (TLD): The TLD unit at ICENS provides thermoluminescence detection services to ICENS and external users of ionizing radiation (e.g. dentists, X-Ray technicians).

Local and International Cooperation

The research work undertaken at ICENS renders numerous opportunities for local and international cooperation. Funding for the research and development activities of ICENS comes from many sources. The major donors have been: Environmental Foundation of Jamaica; Government of Jamaica; Inter-American Development Bank; International Atomic Energy Agency; and University of the West Indies.

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SELECTED FORTHCOMING SCIENTIFIC EVENTS IN COMSATS' COUNTRIES

07-11 February 2011	Anglophone African Regional Writeshop to Support Developing Country Publications on Disaster Risk Reduction and Adaptation to Climate Change, Accra, Ghana (http://preventionweb.net/go/17184)
03-05 March 2011	International Conference on Communications, Computing and Control Applications (CCCA' 11), Hammamet, Tunisia (http://www.hypersciences.org/ccca11/)
07-08 March 2011	International Conference on Water Resources Engineering and Management (ICWREM-2011), Lahore, Pakistan (http://www.uet.edu.pk/Conferences/icwrem2011/)
11-12 March 2011	MENA Oncology Conference, Cairo, Egypt (http://www.fleminggulf.com/life-science/middle-east/mena-oncology-conference)
24-31 March 2011	5 th International Conference on Community Based Adaptation (CBA) to Climate Change, Dhaka, Bangladesh (http://preventionweb.net/go/16967)
29-31 March 2011	International Conference on Communications and Information Technology (ICCIT 2011), Aqaba, Jordan (http://iccit-conf.org/)
25-30 April 2011	2 nd Symposium on BIT Life Sciences, Dalian, China (http://www.bitlifesciences.com/seb2011/)
04-07 May 2011	Maiden FAAMLS Scientific Conference on Quality Enhancement of Medical Laboratory Services in Africa, Abuja, Nigeria (http://www.faamls.org/)

CALL FOR PAPERS FOR COMSATS' JOURNAL – SCIENCE VISION

Science Vision is a biannual scientific journal of COMSATS. It primarily aims at highlighting the important scientific and technological developments that have a bearing on socio-economic conditions of the people. It invites research as well as review articles that have general scientific descriptions, with comprehensive elucidation of the impact of S&T discoveries and innovations for creating understanding of the contemporary issues and challenges. COMSATS invites scholarly contributions for the Vol. 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.

COMSATS would like to thank the authors (individuals and institutions) in all member States that have contributed to the resumption of Science Vision with their erudite scientific literary work.

For more details, please visit COMSATS' official website: www.comsats.org or the journal's website: www.sciencevision.org.pk. Contributions may be sent to the Chief Editor at: comsats@comsats.org.pk.

A BRIEF ON COMSATS

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

COMSATS, currently, has 21 countries as its members, spread across three continents, i.e., Latin America, Africa and Asia. A network, of 16 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.

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

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