

# COMSATS

## ANNUAL REPORT 2014



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

## COMSATS' MEMBER COUNTRIES



People's Republic of Bangladesh



People's Republic of China



Republic of Colombia



Arab Republic of Egypt



Republic of Ghana



Islamic Republic of Iran



Jamaica



Hashemite Kingdom of Jordan



Republic of Kazakhstan



Democratic People's Republic of Korea



Federal Republic of Nigeria



Islamic Republic of Pakistan



Republic of the Philippines



Republic of Senegal



Democratic Socialist Republic of Sri Lanka



Republic of the Sudan



Syrian Arab Republic



The United Republic of Tanzania



Republic of Tunisia



Republic of Uganda



Republic of Zimbabwe

**March 2015**

# **ANNUAL REPORT**

## **2014**



**Commission on Science and Technology for  
Sustainable Development in the South**





## COMSATS PROFILE

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) was created in October 1994 as an international/inter-governmental organization to act as a global forum for sustainable socio-economic uplift of the developing countries through the applications of science and technology. COMSATS current membership includes 21 countries located in the continents of Africa, Asia and Latin America, representing a population of over one-third of the world's total. These countries have diverse social, cultural, economic, political, educational and religious backgrounds, and also differ greatly in their scientific and technological potentials. Their common aspirations for development through cooperation in S&T capacity-building is the *raison d'être* of their membership of COMSATS. The Secretariat of COMSATS is permanently located in Islamabad, Pakistan, which is supported by the generous grants from the Government of Pakistan. The membership of COMSATS is open to all developing countries.

### MISSION

The mission of COMSATS is to help create a world where all nations/states are at peace with one another and capable of providing a good quality of life to their populations in a sustainable way, using modern scientific and technological means.

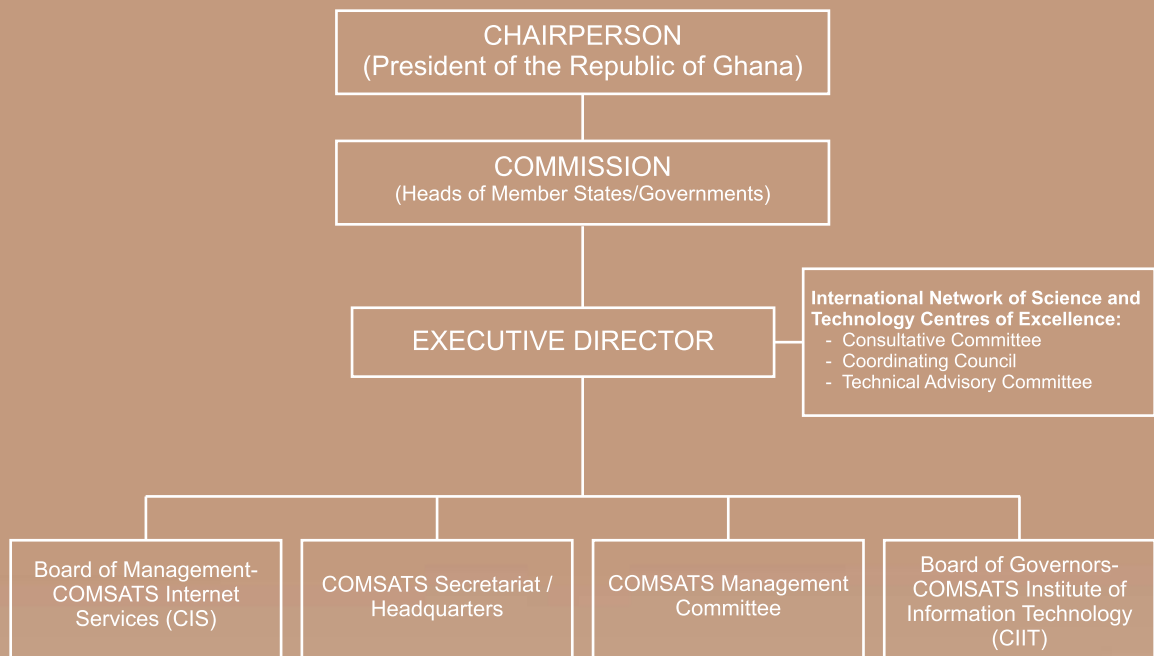
### OBJECTIVES AND FUNCTIONS

The major objectives and functions of COMSATS as envisioned in the Foundation Agreement are:

- To sensitize the countries of the South to the centrality of science and technology in the development process, to the adequate allocation of resources for research and development, and to the integration of science and technology in the national and regional development plans;
- To support the functioning and activities of the Network of International Science and Technology Centres for Sustainable Development in the South established under this agreement;
- To support other major initiatives designed to promote indigenous capacity-building in science and technology for science-led sustainable development, and to help mobilize long-term financial support from international donor agencies and from governments / institutions in the North and the South to supplement the financing of international scientific projects in the South;
- To provide leadership and support for North-South and South-South cooperative schemes in education, training and research; and
- To support the relevant programmes and initiatives of major international organizations working for the development and promotion of science and technology in the South.



## ORGANOGRAM



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Annual Report

2014



## FOREWORD

During the calendar year 2014, COMSATS reached an important milestone by celebrating the 20<sup>th</sup> anniversary of its inception. The event was marked by gratifying recounts of the achievements made by the organization over the last two decades and solemn introspection on the unrealized potentials. There was an aura of optimism about brighter future prospects and determination to retain the momentum for moving forward. The hallowed cause pursued by COMSATS is none other than bringing prosperity in the South through the indisputable mechanism of capacity-building in different areas of science and technology. The COMSATS family present on the occasion was joined by past Executive Directors and key personalities who played a vital role in the establishment and progress of the organization.



The wider community of COMSATS, including its stake-holders in Member Countries, is well aware that COMSATS Secretariat has never relented in its efforts to foster closer scientific cooperation among its Member Countries and facilitating mutually productive linkages. The leverage to achieve these objectives is provided by the excellent resource available to COMSATS in the form of an affiliated Network of Centres of Excellence, spread across four continents. The annual meetings of the Heads of these Centres, provide the quintessential scientist-to-scientist contact that facilitates exchange of information about scientific programmes and best practices. It is, indeed, very promising that the scientific human resources of COMSATS are on the rise, by virtue of the affiliation of more R&D institutions/organizations to COMSATS Network of Centres of Excellence. The induction of the Water Research and Technologies Centre (CERTE) of Tunisia is particularly encouraging, since it has brought invaluable expertise in the Network, relevant to an area of vital national interest in many developing countries.

As described in this annual report, the core objectives of COMSATS have been pursued through all resources available to the Secretariat, notwithstanding acute financial constraints. There has been continuity of capacity-building events held in Member States; persistence of International Thematic Research Groups activities; utilization of graduate study scholarships by Member Countries at COMSATS Institute of Information Technology (CIIT), launching of Distinguished Professorship scheme; and constitution of a Panel of Experts to advise on S&T policy issues. The advocacy role of COMSATS got a big boost with the initiation of Science Diplomacy related activities in 2014.

To further enhance the role and impact of COMSATS, the support of Chairperson of COMSATS, the Honorable President of Republic of Ghana, was sought during a meeting held in his office at Flagstaff House, Accra. The briefing on COMSATS ongoing and future programmes was followed by a discussion on how to garner





greater political patronage from Commission Members in support of COMSATS international activities. The President kindly agreed to send personal letters to his counterparts in this respect. Hopefully, the relevant Ministers in Member States would proactively engage with COMSATS Secretariat for strengthening financial resources of the organization. It is, however, well understood that COMSATS Member States, with a few exceptions, are currently undergoing major political and economic upheavals. The Middle East is in the grip of civil wars and many other countries are reeling under financial instability, as well as security threats. The situation on the ground is dire for a vast majority of underprivileged communities throughout the world. The sustainable and equitable development at global level remains, unfortunately, to be a distant dream. Nevertheless, the comity of developing countries at the platform of United Nations is looking forward to realizing their developmental aspirations through the achievement of Sustainable Development Goals to be adopted in 2015. The prerequisite for any meaningful socio-economic gains, of course, is the much needed peace and stability, which is the primary mandate of United Nations and collective responsibility of all countries.

Fortunately, there are a fairly large number of entities, big and small, international and local, which are addressing the same very issues that COMSATS is engaged with; particularly, human resource development relevant to science and technology. It is but natural that COMSATS often joins hands with other organizations to carry out its mission of disseminating S&T know-how, through South-South as well as North-South cooperation. Over the years, COMSATS has greatly benefited from the partnership with ISESCO. Some of the events, such as: Workshops on Repair and Maintenance of Scientific Equipment ; Internet Security Training Courses ; and, Symposia on National Innovation Systems and Intellectual Property Rights have become signature events under COMSATS-ISESCO cooperation, held repeatedly on annual basis. The relationships with The World Academy of Sciences (TWAS) and UNESCO have also seen major upturn during 2014. The invitation to COMSATS as an observer in the 25<sup>th</sup> General Meeting of TWAS was a new leaf in the relationship of the two organizations, both of which have their genesis in the global scientific movement of Prof. Abdus Salam a Pakistani Physics Nobel Laureate, who founded the International Centre for Theoretical Physics in Trieste, Italy. The synergy with UNESCO's programmes was highlighted through COMSATS co-sponsorship of a regional summit, in commemoration of the International Year of Crystallography.

In the end, I would like to register my profound appreciations for the hard work done by a small team of publications department at COMSATS Secretariat, for bringing out a highly informative write-up of COMSATS major engagements during the year 2014, in an attractive format. The diligence and devotion of COMSATS Secretariat staff has been instrumental in what has been achieved with so little resources, as documented here. The value of this document as well as other publications of COMSATS, of course, lies in the interactivity that it generates among COMSATS stakeholders, who are gratefully lauded for their support to COMSATS objectives.

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

## LETTER FROM THE CHAIRPERSON CONSULTATIVE COMMITTEE

Indeed there are a few organizations like COMSATS that are recognized both at the international and regional levels for working with dedication towards promotion of Science and Technology, especially for the betterment of developing countries. Having the Secretariat of such an organization in Islamabad is an honour for the Government of Pakistan, which has been providing all-out support to COMSATS for achieving the objectives that are mutually beneficial to the countries of the South.



The role being played by COMSATS for building the scientific and technical capacities of its Member States through a number of well thought-out initiatives is commendable. The same was noted by the members of the COMSATS Consultative Committee, having representation of highest level government officials responsible for the national S&T agenda, during its 2<sup>nd</sup> meeting held in conjunction with the meeting of the Coordinating Council in Ghana (May 2013).

The Consultative Committee is mainly responsible for matters relating to formulation of general policy of COMSATS Network of S&T Centres of Excellence and its sensitization towards the specific requirements of Member Countries. As the Chairperson Consultative Committee, I am pleased to note that COMSATS took a step in the right direction by formulating its Strategy Document that serves as a useful set of guidelines for steering the organization's technical cooperation programmes. Moreover, the announcement of convening of the 3<sup>rd</sup> Commission Meeting during 2015 by the Chairman COMSATS, the President of the Republic of Ghana, is a welcome news. The high-profile Meeting will help garner greater political support for the international programmes and initiatives of the organization that has adopted the mechanism of South-South cooperation to achieve its objectives.

Besides many other achievements, this comprehensive Report highlights the increased level of COMSATS interactions during 2014 with international organizations like CERN, TWAS, IAEA, and UNESCO. Such collaborations reflect the harmony and coherence that these organizations have on global agendas, such as sustainable development. The Ministry of Science and Technology, Government of Pakistan, has time and again benefited from such international interactions, and values the efforts being made by COMSATS for the socio-economic development of the host country of its Secretariat.



With initiatives like International Thematic Research Groups, I am confident that COMSATS will be able to achieve its envisaged goals in the coming years. As the Federal Secretary Ministry of Science and Technology, Government of Pakistan, I assure COMSATS of the Ministry's support in its future endeavours, and request other members of the Consultative Committee to play their due role in the success of the organization.

**Mr. Kamran Ali Qureshi**

Chairperson COMSATS Consultative Committee &  
Federal Secretary  
Ministry of Science and Technology  
Government of Pakistan



## LETTER FROM THE CHAIRPERSON COORDINATING COUNCIL

First of all, I wish to express my deepest gratitude to the Iranian Research Organization for Science & Technology (IROST) and the Government of Iran for their support towards the organization of 17<sup>th</sup> Meeting of COMSATS Coordinating Council held in Tehran in May 2014.

This annual report is an excellent summary of the activities carried out by COMSATS during 2014. The Report begins with a summary of the discussions and the decisions of the 17<sup>th</sup> Coordinating Council Meeting, which I had the honour of Chairing. Thanks to the support of IROST and the preparations done by COMSATS Secretariat, the meeting was indeed a great success.



One of the most important activities of the Secretariat included in this report pertain to COMSATS State and Network memberships. The capacity-building events organized by the Secretariat during the year have covered a wide range of important topics, like nanotechnology, climate change and applications of Information and Communication Technologies (ICTs), particularly in the context of developing countries. The last of these themes was also prominent in the activity of COMSATS International Thematic Research Group (ITRG) on ICTs, which is led by one of the Pakistani Centres of Excellence, COMSATS Institute of Information Technology (CIIT). I hope all the functional and planned ITRGs being led by COMSATS Centres of Excellence achieve the objectives of their joint research activities in the coming years. In this regard, it is encouraging to note that the National Mathematical Centre (NMC), Nigeria, has also initiated the activity of the ITRG on Mathematical Modeling .

Apart from coordinating activities among the Centres of Excellence, the Secretariat has been strengthening cooperation with national and international organizations. I hope the contacts and visits of the Executive Director to different institutions and countries made during the year are bearing fruits.

These activities and achievements show an increasing impact of COMSATS in the Third World countries and the importance of its work in favor of science in our nations.

Despite all the political problems at national/international levels, I am convinced that the only guarantee of a long-term growth for developing countries can come through prioritization of education, and Science and Technology. Science-based industrial and agricultural development is the only way to ensure a competitive and stable economy.



Finally, I would like to congratulate the Executive Director of COMSATS, Dr I. E. Qureshi, and his co-workers for the excellent organization of the 17<sup>th</sup> Coordinating Council meeting last year, and for their continuous contribution to the consolidation of our organization, COMSATS. Also, my deepest thanks to the Industrial Technology Institute (ITI), Sri Lanka, for its invitation and hosting the 18<sup>th</sup> Coordinating Council Meeting in Colombo in May 2015, which, I am certain, will be a great success.

**Dr. Eduardo Posada Flórez**

Chairperson COMSATS Coordinating Council &  
Director International Centre  
for Physics (CIF), Colombia





# 1

## ACTIVITIES OF COMSATS' ORGANIZATIONAL BODIES

- 17<sup>th</sup> Meeting of COMSATS Coordinating Council 02
- 35<sup>th</sup> and 36<sup>th</sup> Meetings of COMSATS Management Committee 11
- Preparations for the 3<sup>rd</sup> Commission Meeting of COMSATS 13

The Coordinating Council of COMSATS comprises the Heads of its 19 International S&T Centres of Excellence. The Council meets once annually to decide on matters relating to the membership of the Network, in consultation with the Consultative Committee. The Council also approves the programmes and budget of the COMSATS Network, as well as makes rules for governing its own procedures.

## 17<sup>TH</sup> MEETING OF COMSATS COORDINATING COUNCIL

One of the major activities of COMSATS during the year 2014 was the 17<sup>th</sup> Annual Meeting of COMSATS Coordinating Council, held in Tehran, Iran, on May 19-20, 2014, as decided during the previous meeting of the Council held in Ghana (2013). COMSATS Centre of Excellence in Iran, the Iranian Research Organization for Science and Technology (IROST) hosted the hectic two-day event in its spacious campus in Tehran. Apart from the Executive Director COMSATS, the meeting was attended by Council members or their representatives from 10 Centres of Excellence of COMSATS; namely BCSIR-Bangladesh, ICCES-China, CIF-Colombia, IROST-Iran, NMC-Nigeria, ICCBS-Pakistan, CIIT-Pakistan, UCAD-Senegal, ITI-Sri Lanka and TIRDO-Tanzania. Moreover, the meeting was attended by the representatives of the Water Research and Technologies Centre of Borj-Cedria (CERTE), Tunisia, in connection with CERTE's request for induction in COMSATS Network of International S&T Centres of Excellence. The representatives of ISESCO and UNESCO participated in the meeting as observers.

Officials of COMSATS Headquarters and Members of Organizing Committee from IROST facilitated the proceedings spread over three sessions. The meeting was inaugurated on May 19, 2014, by H.E. Dr. Hussain Salar Amoli, Acting Minister for International Cooperation, Ministry of Science, Research and Technology,



Government of Islamic Republic of Iran. In addition to the Council members and senior officials of the Iranian Ministry of Science, Research and Technology, the ceremony was attended by the officials of the diplomatic missions of Bangladesh, Korea (DPR), Ghana, Pakistan and Tunisia in Tehran; as well as officials of universities and R&D institutions in the capital.

In his inaugural address, Dr. Amoli stressed the need for stronger cooperation among developing countries for scientific capacity building. While sharing the current status of higher education in Iran, he called for provision of equal opportunities of higher education regardless of gender. Dr. Amoli also urged the governments of the developing countries to make sincere efforts for increasing their exports of high-technology products and finished goods rather than raw materials. He underscored Iran's efforts for enhancing public awareness regarding the benefits of science and technology for socio-economic development, as well as to transform its policies into effective strategies and action plans. Dr. Amoli also shared a message from the Iranian Minister for Science, Research and Technology, H.E. Prof. Reza Faraji-Dana, stating that Iran attaches great importance to the COMSATS platform for collaboration in various fields of science and technology among Member States. The honourable Minister reiterated his government's commitment to support activities of the organization.

Earlier, in his welcome speech, Prof. Dr. Ahmad Akbari, President IROST, welcomed the distinguished participants, and stated that Iran considers science and technology as a main force for achieving socio-economic development. He expressed pleasure on hosting the Council meeting at IROST, participated by the leaders of S&T organizations in the developing countries. Speaking on the occasion, the Executive Director COMSATS, Dr. Imtihan Elahi Qureshi, opined that Iran has a prosperous economic future owing to its vast natural resources and the resourcefulness of its young dynamic population. He considered the patronage of the Government of Iran, important for COMSATS and urged the Government to facilitate IROST in playing a leadership role in the programmes and activities of COMSATS. Dr. Qureshi considered investment in human



As a COMSATS member, Islamic Republic of Iran attaches great importance to COMSATS as a science and technology organization contributing to the promotion of cooperation in this field among the Member States.

**H.E. Prof. Reza Faraji-Dana, Hon. Minister of Science, Research and Technology of I.R. Iran**

I am glad to say that COMSATS is fully geared towards helping Member States to achieve its objectives. The founding countries of COMSATS, including Islamic Republic of Iran, were convinced that S&T development is the most reliable path to economic progress and they were also sure that this path can be traversed more rapidly if the developing countries join hands and support each other in their respective national endeavours.

**Dr. I.E. Qureshi, Executive Director COMSATS**

COMSATS Network of Centres of Excellence includes members from four continents. Our purpose for the near future must be to increase the number of affiliated centres, in particular from other Latin-American countries, and to strengthen the links with institutions that share similar purposes.

**Prof. Eduardo Posada F., Chairperson COMSATS Coordinating Council**

The Islamic Republic of Iran highly regards science and technology at the international level as the main principle for development. Organizing such meetings is one of the approaches to science advocacy.

**Prof. Dr. Ahmad Akbari, President IROST, Iran**







resources; formulation of effective policies and State-level patronage; allocation of sufficient resources for R&D infrastructure; and a drive towards international interactivity and scientific cooperation, the main success factors for development plans of the countries in the South.

The Chairperson of COMSATS Coordinating Council, Prof. Eduardo Posada F., Director Centro

Internacional de Física (CIF), Colombia, informed that from amongst the developing countries, only Iran and Brazil have been able to duly acknowledge the role of science and technology as an important driver of economic growth, while the rest remain below the investment level of 1% of GNP in S&T, as prescribed by UNESCO. He called for consistency in the policies and priorities of the governments in developing countries. He stated that innovation has its roots in long-term scientific research processes, without which neither the electronics industry nor the modern agriculture would exist. He, therefore, urged for improvement of the quality of education at all levels and development of science and technology, including basic science at the highest level, and applied science oriented towards the solutions of indigenous problems, as well as to the creation of a strong and innovative industrial sector.

The three technical sessions spread over two days were chaired by Dr. Posada. The 13-point agenda of the meeting covered a variety of matters, including:

- Presentation of COMSATS Annual Activity Report (May 2013 – April 2014) by the Executive Director COMSATS, highlighting the major programmes, activities and achievements of COMSATS Headquarters;

- Review of the implementation status of the decisions taken by the Council in its previous meeting, by Advisor (Programmes) COMSATS;

- Presentations by Centres of Excellence on their activities and achievements since the previous Council meeting, which enable the Network members to initiate collaborative projects in the areas of mutual interest;

- Presentation by the Director-General of the Water Research and Technologies Centre of Borj-Cedria (CERTE), Tunisia, in connection with its request for induction in the Network, technical evaluation report on the suitability of CERTE to join COMSATS Network by Executive Director COMSATS, and Council's decision in this regard;

- Presentations by the representatives of international partner organizations participating in the meeting as observers, outlining ways in which the Council members can collaborate with their respective organizations and benefit from





their ongoing programmes; Presentations by the Lead Centres of International Thematic Research Groups (ITRGs), highlighting the research progress and achievements of their respective groups since the last Council meeting, as well as discussion on matters related to the launching of the inactive ITRGs;

Approval of the necessary revisions and amendments in the Charter of the Network with a view to harmonize the same with the International Agreement to Establish COMSATS to be considered jointly as Statutes of COMSATS. The draft Statutes of COMSATS are being prepared as per the advice of the Commission's second meeting (April 16-17, 2012, Pakistan), and will be submitted to the Commission's third meeting for its final approval;

Reconstitution of COMSATS Technical Advisory Committee (TAC), as the three-year tenure of the existing TAC members had completed;

Approval of COMSATS Panel of Experts on Science, Technology and Innovation (ST&I) Policy, which would provide free consultancy to the Member Countries in formulating/reviewing their policies related to science, technology and innovation;

Discussion on future programmes and projects of COMSATS; and

### Members/Representatives attending the 17<sup>th</sup> Coordinating Council Meeting

Dr. Eduardo Posada F., Director CIF, Colombia (Chairperson COMSATS Coordinating Council);  
 Dr. Imtihan Elahi Qureshi, Executive Director COMSATS (Secretary to the Coordinating Council);  
 Mr. F. M. M. Jalaluddin Al-Quaderi, Member (Additional Secretary), BCSIR, Bangladesh;  
 Prof. Lin Zhao-hui, Director ICCES, China;  
 Dr. Ahmad Akbari, President IROST, Iran;  
 Prof. Adewale Roland Tunde Solarin, Director/Chief Executive, NMC, Nigeria;  
 Prof. Dr. M. Iqbal Choudhary, Director ICCBS, Pakistan;  
 Dr. Haroon Rashid, Pro Rector, CIIT, Pakistan;  
 Dr. G. A. S. Premakumara, Director/CEO, ITI, Sri Lanka;  
 Prof. Tahir Diop, Incharge, Biotechnology and Mushroom Laboratories, Department of Bio-Vegetables, Faculty of Science and Technology, UCAD, Senegal;  
 Dr. Manege L. C., Director of Industrial Research, TIRDO, Tanzania.  
 Prof. Mohamed Ben Youssef, Director General, Water Research and Technologies Centre of Borj-Cedria (CERTE), Tunisia;  
 Mr. Mohamed Ben Amor, Professor of Higher Education, Water Research and Technologies Centre of Borj-Cedria (CERTE), Tunisia.  
 Ms. Tong Ting, Secretary of International Affairs, ICCES, China;  
 Dr. M. Molanejad, Acting President for International Cooperation, IROST, Iran;  
 Mr. Olutunji Oladejo, Principal Programmer, NMC, Nigeria;  
 Mr. Olukayode Gregory Obayomi, Special Assistant to Director, NMC, Nigeria; and  
 Dr. Farzana Shaheen, Associate Professor, ICCBS, Pakistan.  
 Dr. Yoslan Nur, Programme Specialist, Science Policy Studies and Foresight Section, UNESCO, France (Nominee of the Natural Sciences Directorate of UNESCO);  
 Ms. Niloofar Sadeghi, Officer-in-charge of Science Matters, UNESCO Office in Tehran, Iran;  
 Dr. Abbas Sadri, Director, ISESCO Regional Office, Islamic Educational, Scientific and Cultural Organization (ISESCO), Tehran, Iran; and  
 H.E. Mr. Bawah Gilbert Ayembillah, Ambassador, Embassy of the Republic of Ghana, Tehran, Iran (Representative of Chairperson COMSATS).







Presentation of the administrative and financial matters of COMSATS by the Advisor (Programmes) COMSATS.

The provisional agenda of the meeting was unanimously adopted and minutes of the 16<sup>th</sup> Meeting of COMSATS Coordinating Council were approved. Both the documents had been shared earlier with all the members of the Council.

The presentation on the implementation status of the previous meeting of the Council was made by the Advisor Programmes, Mr. Tajammul Hussain. He elaborated on the continued efforts of COMSATS Secretariat to enhance the membership of the Commission, for which contacts were made with Brazil, Ethiopia, Indonesia, Iraq, Malaysia, Nepal and Thailand. He informed the Council of the efforts made, regarding the ratification of Accession Agreement signed by the Turkish Ambassador in Islamabad on August 31, 2012, by the Government of Turkey. It was noted that in order to further strengthen the Network within the Member States, Tunisia, Kazakhstan, Philippines, Uganda and Zimbabwe were approached, inviting them to nominate suitable institutions for inclusion in the Network. An outcome of these efforts was observed through the nomination of Water Research and Technologies Centre of Borj-Cedria (CERTE) by the Tunisian Government. The case of CERTE's induction in the Network was later presented during the meeting.

The presentation also covered matters related to the progress made with regard to the Council's decision concerning deputation of officials from Centres of Excellence to work at COMSATS Secretariat on secondment, and also took stock of the level of contributions from COMSATS Centres of Excellence towards COMSATS publications.

Some relatively newer initiatives of COMSATS, such as COMSATS Distinguished Professorship Scheme; and COMSATS Panel of Experts on Science, Technology and Innovation Policy, were also discussed, with due focus on the consultations made in this regard with The World Academy of Sciences (TWAS).

The progress of the active International Thematic Research Groups, as well as the efforts made for encouraging the Lead Centres of the other Groups were also reviewed by the Council. The proposals of other ITRGs on Renewable Energy, Natural Hazards and Mineral Resources were also discussed.

The visit of the Executive Director COMSATS to UNESCO Headquarters in Paris (6<sup>th</sup> May 2013), and participation in 37<sup>th</sup> General Conference of UNESCO (November 17-22, 2013) were also seen as effective steps for strengthening cooperation with UNESCO. These steps, it was noted, had paved way for the finalization of a cooperation agreement between COMSATS and UNESCO. It was also informed that

COMSATS facilitation of students of member countries resulted in a total of 27 Nigerian students availing the opportunity of postgraduate studies at CIIT.

The Council appreciated the efforts made by the Secretariat and showed satisfaction over the implementation status of the decisions of the 16<sup>th</sup> Coordinating Council Meeting.

A comprehensive review, of COMSATS year long activities, undertaken during the intervening period between the last two Council meetings, was presented by the Executive Director COMSATS. Some key activities reviewed during the presentation were:

Capacity building events held during 2013-14;

Efforts made to complete the administrative and legal formalities for establishing the COMSATS Endowment Fund in consultation with the relevant Ministries of Pakistan;

Actions taken in the light of the decisions of the 34<sup>th</sup> and 35<sup>th</sup> meetings of COMSATS Management Committee;

Actions taken by COMSATS Secretariat with regard to the designation of COMSATS Distinguished Professors, identification of suitable members of COMSATS Panel of Experts on Science, Technology and Innovation Policy, re-constitution of COMSATS Technical Advisory Committee (TAC), and preparation of draft Statutes of COMSATS;

Interactions with the Government of Pakistan (host country);

Outcomes of Executive Director's visits to Tunisia (December 9-12, 2013), Brazil (November 25-27, 2013), Bangladesh (April 1-3, 2014) and UNESCO Headquarters in France (May 06, 2013 & November 17-22, 2013);

Progress of COMSATS Flagship Projects, namely COMSATS Internet Services (CIS), COMSATS Institute of Information Technology (CIIT) and COMSATS Telehealth Programme;

Collaboration with international partner organizations; and

Publications of COMSATS, including COMSATS Newsletter (bi-monthly), COMSATS Journal Science Vision (bi-annual), COMSATS Annual Report (yearly), and COMSATS Series of Publication on Science and Technology, Membership Documents, Nanotechnology in the Edge of Convergence and COMSATS-TWAS Joint Publication: Excellence in Science.







On the basis of the comments and views from the participants of the meeting that emerged during the open floor discussion, the consensus was reached on the following points:

On suggestion from Dr. G. A. S. Premakumara, Director/CEO, Industrial Technology Institute (ITI), Sri Lanka, it was agreed that the Heads of Centres of Excellence will facilitate in the process of payment of Annual Membership Contribution (AMC) to COMSATS by their respective countries.

Prof. Choudhary advocated supplementing financial support for effective functioning of COMSATS ITRGs, and offered ICCBS support to other Centres of Excellence for trainings on the operation, repair and maintenance of scientific instruments.

Dr. Yoslan Nur, Programme Specialist, Science Policy Studies and Foresight Section, UNESCO, France, offered his assistance with regard to the approval of COMSATS proposed Regional (Asia-Pacific) Technical Cooperation Programme for the biennium 2014-2015, which had been submitted under UNESCO Participation Programme. Dr. Nur's offer was gratefully accepted by the Council. The meeting accorded unanimous approval to the induction of CERTE-Tunisia in COMSATS Network of International S&T Centres of Excellence.

Considering its desire to harmonize the International Agreement to Establish COMSATS and the Charter of the Network to be jointly considered as COMSATS Statutes, the Coordinating Council approved the necessary revisions and amendments in the Charter of the Network; the consolidated Statutes would be submitted for the approval of COMSATS Commission in its 3<sup>rd</sup> Meeting planned for 2015.

The Coordinating Council accorded approval to the replacement of five out of ten TAC members with the officials nominated by The World Academy of Sciences (TWAS), belonging to Brazil, Egypt, Ethiopia, Iran and Malaysia.

Approval was granted for induction of senior officials of UNESCO, TWAS, CIF-Colombia, COMSATS Secretariat, as well as Sri Lankan Government in COMSATS Panel of Experts on Science, Technology and Innovation Policy.

The Director/Chief Executive NMC-Nigeria announced the launching of the ITRG on Mathematical Modeling during the second half of 2014.

Establishment of a new ITRG on Renewable Energy to be led by IROST, Iran, was approved.

The Centres of Excellence pledged to regularly contribute towards COMSATS publications, particularly the Newsletter and the journal, Science Vision.

The Executive Director COMSATS was authorized to sign an MoU between UNESCO and COMSATS.

IROST's proposal for establishing a Centre on Human Resource Development in

The efforts made by COMSATS staff in executing scientific activities in Member States and achieving over-all objectives of the organization are worth appreciating.

**Prof. Dr. M. Iqbal Choudhary, Director  
ICCBS, Pakistan**

Advanced Science and Technology was appreciated by the Council. It was agreed that the activities of this Centre at IROST will be supported by COMSATS. COMSATS Headquarters was authorized to collaborate with TWAS in the field of Science Diplomacy.

It was decided that CIF-Colombia would explore the possibility of organizing a joint meeting of countries belonging to the Forum for East Asia-Latin America Cooperation (FEALAC) and COMSATS with support from the Colombian Government.

H.E. Mr. Bawah Gilbert Ayembillah, Ambassador of the Republic of Ghana in Tehran, who was invited to participate in the meeting as representative of the Chairperson COMSATS, lauded the role being played by COMSATS for socio-economic uplift of the South. He encouraged the Network members to continue promoting international cooperation in the larger interest of mankind.

The meeting issued a Communiqué that calls for stronger efforts for South-South Cooperation mechanism for the promotion of S&T in Member States (Page 10).

The meeting concluded on a note of appreciation for the efforts made it by COMSATS Secretariat to fulfill the objectives of the organization, and encouraged it to continue its concerted efforts towards the implementation of COMSATS five-year strategy. In their votes of thanks, Dr. Akbari, Dr. Qureshi and Dr. Posada expressed satisfaction with the ongoing activities of the organization, deliberations and the outcomes of the meeting, and hoped for stronger collaborations among the Network members. Dr. Qureshi considered initiation of collaboration among Centres of Excellence the very essence of the Council Meetings. Three such agreements were formalized during the 17<sup>th</sup> Coordinating Council Meeting through MoUs between (i) IROST-Iran and CIF-Colombia; (ii) IROST-Iran and CIIT-Pakistan; and (iii) IROST-Iran, ICCES-China and Soil Conservation and Watershed Management Research Institute (SCWMRI), Iran. It was decided that the next (18<sup>th</sup>) meeting of the Coordinating Council will be hosted by the Industrial Technology Institute (ITI), Sri Lanka, while the Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh, was chosen as an alternative host.



**Communiqué of the  
17<sup>th</sup> Coordinating Council Meeting of COMSATS  
(19-20 May, 2014, Tehran, Islamic Republic of Iran)**

The Members of the Coordinating Council of COMSATS participating in the 17<sup>th</sup> meeting of the Council organized by the COMSATS' Centre of Excellence in Iran, the Iranian Research Organization for Science and Technology (IROST), after deliberating upon the agenda of the meeting on 19<sup>th</sup> and 20<sup>th</sup> of May 2014 in Tehran, wish to express their common views as under:

1. The Members of COMSATS Coordinating Council highly appreciate the excellent arrangements made by IROST administration for holding the 17<sup>th</sup> Council meeting in Tehran.
2. The patronage of the parent Ministry of IROST, the Ministry of Science, Research and Technology, and the Government of Islamic Republic of Iran, for the hospitality provided to Council Members is acknowledged with gratitude.
3. The administrative support provided to IROST by COMSATS Secretariat and the preparation of necessary documentation required for the successful organization of the meeting is noted with satisfaction.
4. The Council Members are pleased to learn about the high quality of multi-disciplinary research work being undertaken at IROST and thank the administration for arranging visits to its various laboratories.
5. The Council welcomes the induction of the Water Research and Technologies Centre, Centre de Recherches et des Technologies des Eaux (CERTE), as a new Member of the Network of Centres of Excellence and hope that this Centre will be able to make research partnerships with similar Centres in Member States.
6. Appreciating the dedicated efforts of COMSATS Secretariat to fulfil the objectives of the organization, the Council takes note of the following major developments:
  - (i) continued expansion of the Network of Centres of Excellence;
  - (ii) persistence of International Thematic Research Groups activities;
  - (iii) steady stream of capacity-building events in Member States, with the participation of other international organizations;
  - (iv) consolidation of COMSATS Statutes;
  - (v) relative increase in the Annual Membership Contributions;
  - (vi) launching of Distinguished Professorship Scheme;
  - (vii) utilization of graduate-study scholarships for Member countries at COMSATS Institute of Information Technology;
  - (viii) constitution of a Panel of Experts to advise on S&T policy issues;
  - (ix) concerted efforts for the regular publication of COMSATS Newsletter and other information material about the organization.
  - (x) continuation of the publication of Science Vision and support to TWAS for the publication of profiles of Centres of Excellence.
7. The Council gratefully acknowledges the support of partner organizations, especially ISESCO, for the implementation of COMSATS programmes in Member States.
8. The Council records with gratitude the financial and in-kind contributions by Member Countries towards the promotion of South-South cooperation through joint S&T activities and stresses the need to increase the number of contributing countries.
9. The Council recognizes the need and necessity of the following actions on the part of Network Member organizations:
  - (i) to proactively engage Network partners for undertaking collaborative research programmes;
  - (ii) to make serious efforts for launching new Thematic Research Groups;
  - (iii) to make maximum utilization of scholarships offered by China, Pakistan and Iran and consider the possibility of similar offers from their Centres;
  - (iv) to create hotlines with COMSATS Headquarters through Skype or other information exchange channels for prompt communications;
  - (v) to keep the COMSATS Headquarters aware of new developments or major achievements of their organizations for appropriate projection at international level through COMSATS Newsletter;
  - (vi) to encourage their researchers to submit scholarly scientific articles for publication in COMSATS bi-annual journal, the Science Vision;
  - (vii) to consider placement of their officers at COMSATS Headquarters on secondment.
10. The participation of the Executive Director in meetings organized by international organizations such as UNESCO and World Science Forum, and his visits to Centres of Excellence, are in line with COMSATS interactive approach in support of its mission. He is encouraged to continue his devoted efforts towards the implementation of COMSATS five-year strategy.
11. COMSATS Coordinating Council stands by its observation that the public spending on R&D in developing countries is below the desired level. It calls upon Member States to increase their level of GERD component to a level of 2% of GDP and enhance financial support for international bodies that provide S&T capacity-building opportunities.



The COMSATS Management Committee assists the Secretariat in the implementation of policy-decisions taken by the Coordinating Council and other organs of COMSATS; recommends programmes and budget of COMSATS; monitors financial activities of COMSATS, considers and examines audited reports of COMSATS Secretariat and other projects; evaluates rules and regulations of COMSATS Secretariat; and deliberates upon any other administrative issue proposed by the Executive Director.

## 35<sup>TH</sup> AND 36<sup>TH</sup> MEETINGS OF COMSATS MANAGEMENT COMMITTEE

As a standard practice of COMSATS Secretariat, to effectively govern the administrative and financial affairs of COMSATS, two meetings (35<sup>th</sup> and 36<sup>th</sup>) of COMSATS Management Committee were convened during the year 2014, under the Chairpersonship of the Executive Director COMSATS, Dr. I.E. Qureshi. The 35<sup>th</sup> meeting of the Management Committee took place on 2<sup>nd</sup> May 2014, whereas the 36<sup>th</sup> meeting was held on 4<sup>th</sup> December 2014.

Members or their representatives, as well as co-opted members of the Committee participated in these meetings. These were: Mr. Tajammul Hussain, Advisor (Programms), COMSATS; Dr. Haroon Rashid, Pro-Rector, COMSATS Institute of Information Technology (CIIT), (Representing Rector CIIT); Dr. Tariq-ur-Rahman, Ex-Chairman, Pakistan Council of Science and Technology (PCST); Mr. Muhammad Hassan, General Manager (Admin & HR) COMSATS Internet Services (CIS); Mr. Zhang Haihua, Science Attaché, Chinese Embassy, Islamabad; Mr. Sabih ur Rahman, Advisor (Home Country Affairs), COMSATS; Mr. M. Bilal Chouhan, Dy. Director (A&E), COMSATS; and Mr. Amanullah Khattak, Dy. Director (F&A), COMSATS. For the 35<sup>th</sup> meeting, Mr. Hassan represented the then CEO CIS, Mr. Asim S. Husain, and participated as a member in the 36<sup>th</sup> meeting replacing Mr. Asim Husain, who resigned from his post to assume charge as the Managing Director, Pakistan Software Export Board (PSEB).



The 35<sup>th</sup> meeting of the Managing Committee was especially important as it took stock of various matters related to the then upcoming 17<sup>th</sup> meeting of COMSATS Coordinating Council. In the meeting the Membership of Board of Governors (BoG) of CIIT was discussed as the tenure of a few members of the Board, expired on February 24, 2014. The Executive Director COMSATS re-nominated three of the members: Prof. Dr. Atta-ur-Rahman, Former Coordinator General COMSTECH; Mr. Anwar H. Rammal; Chairman Asiatic Public Relations Network, Karachi; and Dr. Inam-ur-Rahman, Scientist Emeritus, Pakistan Atomic Energy Commission (PAEC), for another term of three years. While a new nomination of Mr. Sabih-ur-Rahman, Advisor (Host Country Affairs), COMSATS Secretariat was also agreed by the Committee. Mr. Sabih was included as a replacement of Dr. M. Yaseen, Former Chairman Pakistan Telecommunication Authority (PTA), who had communicated his inability to serve for the second term. CIIT was notified of the above-mentioned nominations during March 2014, which were approved in due course. The budget estimate for the financial year 2014-15 and status of the Annual Membership Contribution (AMC) from member countries was also shared with the participants of the 35<sup>th</sup> meeting of COMSATS Management Committee.

During the 36<sup>th</sup> meeting, the Management Committee approved a number of Standing Orders regarding Grant of Ad hoc Relief Allowance to COMSATS Secretariat's employees with effect from 1<sup>st</sup> July 2014, as well as revision of conveyance and maintenance allowance; and revision of House Rent ceiling. The meeting also discussed and came to consensus over the proposed Procurement Rules for smooth running of administrative and financial affairs of Secretariat.

The Deputy Director (F&A) COMSATS, also apprised the participants of the meeting about the major financial matters of COMSATS Secretariat, including its recent external audit for the financial year that ended on 30 June 2014, as well as the status of Annual Membership Contributions.

Major highlights of the meetings were the status reports of the on-going projects in the host country.



The Commission is the highest forum of COMSATS, which is represented by the Heads of State/Government of COMSATS twenty-one member countries. The first meeting of the Commission was held in 1994 that led to the establishment of COMSATS itself, while the 2<sup>nd</sup> Commission Meeting was held in April 2012 at the level of Ministers/officials nominated by the Heads of State/Government.

## PREPARATIONS FOR THE 3<sup>RD</sup> COMMISSION MEETING OF COMSATS

In accordance with the relevant clause of the International Agreement of COMSATS, which mandates the Chairperson of COMSATS to convene at least one meeting of the Commission every three years, the incumbent Chairperson of COMSATS, the President of the Republic of Ghana, has convened the 3<sup>rd</sup> Commission Meeting. In consultation with the focal Ministry of COMSATS in Ghana, the Ministry of Environment, Science, Technology and Innovation (MESTI), the meeting has been tentatively scheduled for October 2015, in Accra, Ghana.

Since the Chair of COMSATS was rotated from Pakistan to Ghana during the 2<sup>nd</sup> Commission Meeting, in April 2012, COMSATS Secretariat has been maintaining strong liaison with MESTI to coordinate the activities of various statutory bodies of COMSATS, as well as to keep the Chairperson of COMSATS fully informed about the activities of the Secretariat. Coordination with MESTI was further given a thrust after the announcement of the holding of 3<sup>rd</sup> Commission Meeting, which came as an outcome of a meeting held between the Chairperson of COMSATS, H.E. Mr. John Dramani Mahama, the President of Ghana, and the Executive Director COMSATS, Dr. I.E. Qureshi, that took place on 9<sup>th</sup> June 2014, at Flagstaff House in Kanda, Accra (Page 89). As per the instructions of the Chairperson, MESTI-Ghana has taken up the matter of setting-up a Planning Committee to oversee the organizational and administrative aspects of the Meeting.





While the organizational arrangements in Ghana for the 3<sup>rd</sup> Commission Meeting and coordination from COMSATS Secretariat continue, the latter is also preparing comprehensive report on the progress made by COMSATS Secretariat since the 2<sup>nd</sup> Commission Meeting, as well as the organization's future plans, to be presented during the Meeting.



The 3<sup>rd</sup> Commission Meeting is planned to be held at the Ministerial-level representatives of the Heads of Government/State of the Member Countries. The important agenda-items of the Commission Meeting, inter alia, include: Overview of COMSATS Activities and Future Plans ; Statements by the Heads of Delegations of the Member Countries; Discussion on cooperation issues and COMSATS future Programmes; Mobilization of Financial Resources for COMSATS; Approval of Statutes of COMSATS; Placement of representatives of Member States at COMSATS Headquarters; and Election/re-election of the new Chairperson of COMSATS for the next three-year term.

The preparations for the Commission Meeting also include the finalizing of follow-up actions on the decisions and recommendations of the 2<sup>nd</sup> Commission Meeting held in Islamabad, Pakistan. Some of the accomplishments in this respect are listed below:

- i) COMSATS Secretariat continued its efforts to enhance the membership of the Commission as well as the Network of Centres of Excellence. As a result, the following four organizations have been inducted in COMSATS Network of Centres of Excellence since the 2<sup>nd</sup> Commission Meeting:

University Cheikh Anta Diop (UCAD), Senegal May 2012;  
 Council for Scientific and Industrial Research (CSIR), Ghana (re-designated in place of BRRI-Ghana) May 2012;  
 Industrial Technology Institute (ITI), Sri Lanka May 2013; and  
 Water Research and Technologies Centre of Borj-Cedria (CERTE), Tunisia May 2014.

During the same period, the affiliation of a Network member located in Bolivia was withdrawn on account of the discontinuation of its R&D activities. The agenda of the 18<sup>th</sup> Coordinating Council Meeting, to be held in Colombo, Sri Lanka, in May 2015, includes the case of induction of Al-Farabi Kazakh National University (KazNU), Kazakhstan, in COMSATS Network. KazNU has been nominated by COMSATS focal point in Kazakhstan, the Ministry of Education and Science. Once approved, it will become the 20<sup>th</sup> member of COMSATS



Network of Centres of Excellence. Moreover, as a result of the contacts made with the senior Government officials of potential member countries, the Ambassador of Turkey to Pakistan, H.E. Mr. M. Babur Hizlan, on behalf of the Republic of Turkey, signed COMSATS



Accession Agreement on August 31, 2012, in connection with the induction of Turkey as the 22<sup>nd</sup> Member State of COMSATS. The agreement will come into force subsequent to its ratification by the Government of Turkey expected in near future.

- ii) As advised by the 2<sup>nd</sup> Commission Meeting, COMSATS Secretariat has been making strenuous efforts to achieve the overall objectives of the organization with support from the Member States. In this regard, a number of new initiatives were launched, which include: Establishment of COMSATS Technology Park at CIIT, Pakistan; COMSATS Distinguished Professorship Scheme; and COMSATS Panel of Experts on Science, Technology and Innovation Policy. COMSATS also continued to promote scientific capacity-building through the exchange of young students, scientists and experts. In this regard, 37 capacity building events and meetings were organized by COMSATS in collaboration with its partner organizations, since the 2<sup>nd</sup> Commission Meeting. Moreover, academic facilitation of students from COMSATS Member States through scholarships offered by some COMSATS Centres of Excellence also continued during the last three years.
- iii) As per the Commission Meeting Resolution, COMSATS strengthened its programme of International Thematic Research Groups (ITRGs) in order to provide maximum socio-economic benefits to the member countries utilizing the technical and human resources from COMSATS Centres of Excellence and relevant institutions from the developing world for joint applied research in scientific areas of crucial developmental importance. In this regard, COMSATS was successful in launching its fourth ITRG on Mathematical Modeling on 2<sup>nd</sup> December 2014 (in Abuja, Nigeria), while two more ITRGs on Agriculture, Food Security and Biotechnology and Renewable Energy are scheduled to be launched during 2015. Also, the research activity continued for other active ITRGs on: Information and Communication Technologies (ICTs); 'Natural Products Sciences'; and 'Climate Change and Environmental Protection'.
- iv) In order to improve the financial health of the organization, the incumbent Chairperson of COMSATS, the honourable President of Ghana has sent formal letters to his counterparts in Member States, requesting them to contribute towards COMSATS Endowment Fund, which during the 2<sup>nd</sup> Commission Meeting was announced to be established. The invitations for the Commission Meeting will be sent by the Government of Ghana to the Commission Members in COMSATS Member States after the approval of the Summary to be moved by the Minister, Ministry of Environment, Science, Technology and Innovation, Government of Ghana, in early 2015.





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## ACTIVITIES OF COMSATS SECRETARIAT

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COMSATS Secretariat serves a dual role of being the Secretariat of the Commission and the Headquarters of its Network of affiliated Centres of Excellence. It is responsible for regularly holding statutory body meetings, as well as take a wide range of actions under their direction. The Secretariat implements the organization's international programmes and activities in partnership with other intergovernmental agencies, national S&T institutions, R&D organizations, members of academia and scientific community across the world. The core activities of the Secretariat also include: pooling financial resources in the form of grants, Annual Membership Contributions and other earnings; enhancing the membership of COMSATS and its Network of International S&T Centres of Excellence; and dissemination of information to its stakeholders.

## ACTIVITIES OF COMSATS SECRETARIAT

### Administrative Functions

COMSATS Secretariat is headed by an Executive Director, who along with his small team at the Secretariat, makes continuous efforts round the year to ensure that the Secretariat conducts its responsibilities in accordance with the statutes of the organization.

In line with its organizational objectives, COMSATS during 2014 was able to make headways in terms of the following segments, which have been highlighted in other sections:

- Organization/sponsorship of 13 national/international scientific conferences/workshop/ meetings, including 5 in partnership with ISESCO;
- Co-organization of 2 International Thematic Research Group (ITRG) Meetings;
- Launching of a new ITRG on Mathematical Modeling with funding under COMSATS-ISESCO research grant scheme;
- Induction of a new member to the Network of International S&T Centres of Excellence in the form of CERTE-Tunisia;
- Signing of an MoU with ICCBS-Karachi;
- Strengthening of linkages with Governments and S&T institutions of 7 developing



countries (4 Members and 3 potential Member States) through international visits of Executive Director and other senior officials of COMSATS Secretariat;  
 Offer of COMSATS membership made to 7 developing countries in meetings with their high-level government officials and through other intermediary means;  
 Visits of Executive Director to 4 Centres of Excellence of COMSATS, TIRDO-Tanzania, IROST-Iran, CSIR-Ghana and BCSIR-Bangladesh;  
 Reconstitution of COMSATS Technical Advisory Committee (Replacement of 5 members);  
 Publication of 6 issues of COMSATS Newsletter, and two editions of COMSATS journal, Science Vision;  
 Important meetings with Heads of 4 international organizations, CERN, TWAS, IAEA and UNESCO, to discuss cooperation matters during their visits to Pakistan;  
 Award of postgraduate scholarships at CIIT to 8 students belonging to Nigeria (6), Bangladesh (1) and Sudan (1);  
 Signing of 3 MoUs under COMSATS umbrella between (i) IROST-Iran and CIF-Colombia; (ii) IROST-Iran and CIIT-Pakistan; and (iii) IROST-Iran, ICCES-China and Soil Conservation and Watershed Management Research Institute (SCWMRI), Iran;  
 Annual Membership Contributions received from 3 Member States during 2014, Pakistan, China and Iran;  
 Holding of 2 meetings of the Management Committee.

## Enhancement of Membership of COMSATS' Commission

Consultation for enhancement of the membership of COMSATS is an ongoing persistent activity of COMSATS Secretariat. The Secretariat gives top priority to the activity in order to help widen the organization's outreach, and enlarge the scope of benefits the membership accrues for developing countries. Throughout the year, efforts have been made to strengthen ties with developing countries already having working relations with COMSATS by means of their institutions' joint activities with the organization, as well as contacts made with government officials at various forums. In this regard, the governments of Brazil, Ethiopia, Malaysia, Morocco, Nepal, Oman and Thailand were approached with offers of COMSATS membership, during the year 2014.

In that connection, the Executive Director COMSATS held a meeting with H.E. Dr. Rawiya Al Busaidi, Minister of Higher Education, Sultanate of Oman, and Mr. Talal Al Balushi, Director of International Relations, the Research Council of Oman, during his visit to this country. He had been invited to attend the 25<sup>th</sup> General Meeting of TWAS, held in Muscat, on 25<sup>th</sup>-28<sup>th</sup> October 2014 (Page 79). During the meeting, the Executive Director handed over to the honorable Minister a dossier containing the summary of membership requests, and previous correspondence between COMSATS and the Government of Oman. H.E. Dr. Rawiya apprised that the matter of Oman's accession to COMSATS as a Member State may be pursued with Oman's Research Council, which is the national authority that acts as a focal point for research and innovation, and liaises with various institutions engaged in R&D. A membership offer letter was also extended to the Chairman of Oman's Research Council, H.E. Dr. Sayyid Shehab Bin Tariq Al Said.

In view of the presence of relevant people in the TWAS meeting, the matter of Brazilian and Malaysian membership were also pursued by Executive Director



COMSATS with Prof. Glaucius Oliva, Member COMSATS Technical Advisory Committee and President, National Council for Scientific and Technological Development (CNPq), Brazil; and Prof. Khatijah Yusoff, Member COMSATS Technical Advisory Committee and Dean Faculty of Biotechnology and Biomolecular Sciences, University of Putra Malaysia, Malaysia, respectively. As a follow-up of the meeting, COMSATS accession documents and previous correspondence were sent to these officials for onward submission to the relevant ministries of the two countries.

Similar efforts were made on the side-lines of 2<sup>nd</sup> COMSATS-ISESCO Regional Consultative Workshop on National Innovation System (NIS) and Intellectual Property (African Region), held in 25<sup>th</sup>-27<sup>th</sup> November 2014. A meeting was held between Advisor (Programmes) COMSATS and the Ambassador of Pakistan to Morocco, H.E. Mr. M. Waheed-ul-Hasan, in order to seek his assistance regarding Morocco's membership to COMSATS. The necessary documents concerning offer of Membership to COMSATS were handed over to the Ambassador. Acknowledging the usefulness of COMSATS membership for Morocco, the honourable Ambassador expressed hope that a decision to join COMSATS as a Member State will soon be taken by the Moroccan Government. The potential benefits for Morocco after joining COMSATS are evident from the organization's long-haul working relations with ISESCO, an organization based in the country.

For Nepal's membership to COMSATS, a request was sent to Dr. Deba Bahadur Khadka, Vice President of the Chemical Society of Tribhuvan University, Nepal, seeking his assistance in ascertaining the position of Nepal regarding the matter. Moreover, new membership offer letters were extended to the Ministry of Science and Technology of Ethiopia and Thailand.

### **Enhancement of Membership of COMSATS' Network of International S&T Centres of Excellence**

As a constant endeavor to broaden its horizon of South-South technical cooperation among the scientific institutions of developing countries, COMSATS makes continuous efforts for expanding its Network of International S&T Centres of Excellence by inducting new member institutions. The Network constitutes the technical resource base of the organization and has been gradually expanding over the years. Efforts in this regard have been a key priority of COMSATS, as set out in its Strategic Plan (2012-2016).



During the year 2014, COMSATS welcomed Water Research and Technologies Centre of Borj-Cedria (CERTE), Tunisia, to its Network. In a presentation made by Prof. Mohamed Ben Youssef, Director General CERTE, to the 17<sup>th</sup> Coordinating Council Meeting, it was noted that the Centre has 94 researchers and 97 support staff, employed in its three laboratories: Geo-resources Laboratory; Natural Water Treatment Laboratory; and Waste Water Treatment laboratory, as well as a Pilot Station for waste water treatment. Prof. Youssef also shed light on the activities and facilities of each of the afore-mentioned laboratories. It was informed that the Centre had produced 67 scientific papers in 2012. The number of Ph.D and MS students being supervised by the Centre is also increasing, with 25 Ph.D and 37 MS theses supervised during 2012. Since 2009, the Centre has filed 10 patents. CERTE is, currently, executing 11 national and 8 international research programmes. Apart from



collaboration and cooperative arrangements with national universities and companies, CERTE is collaborating with scientific organizations belonging to Japan, France, Italy, Spain, Belgium, Greece, Austria, Portugal, Germany, UK, Turkey, Malta, Morocco, Algeria, Egypt, Niger and Jordan. The Centre is also engaged in organizing and participating in scientific events, and is a member of various scientific associations.

The decision to induct CERTE in the Network was also backed with the technical evaluation report by the Executive Director COMSATS, based on his visit to different laboratories of CERTE in December 2013, as an ex-officio member of COMSATS Technical Advisory Committee (TAC). With CERTE's induction in the Network, Prof. Ben Youssef, has become the member of Coordinating Council.

Another recent outcome of these efforts is the interest shown by the Government of Kazakhstan by nominating Al-Farabi Kazakh National University (KazNU), as a potential member of COMSATS Network. The Council in its 18<sup>th</sup> Meeting in Sri Lanka will review the case, in light of the presentation made by officials of the University during the meeting, as well as technical evaluation report and recommendations made by two members of the Technical Advisory Committee.



For further expansion of the Network, Zimbabwe, and Uganda as the member countries with no institutions affiliated with COMSATS Network are being approached for seeking nominations.

## Follow-up on the Decisions of the 17<sup>th</sup> Coordinating Council Meeting of COMSATS

A major ongoing activity of COMSATS Secretariat in a calendar year starts after the holding of annual Coordinating Council Meetings, whereby policy decisions taken by the Council are operationalized and executed. The post meeting scenario of Council's deliberations in 2014 has been no different.

The 17<sup>th</sup> meeting of COMSATS Coordinating Council, covered in earlier parts of this Report, having made a number of important decisions regarding the membership of the Network, as well as effective implementation of COMSATS International programmes and activities in the Member States, also resulted in generation of a set of recommendations and actions for COMSATS Secretariat to follow up on. Some key follow-ups of the meeting are as follows.

Upon the unanimous approval of the Council to induct the Tunisia's Water Research and Technologies Centre of Borj-Cedria (CERTe) as the 19<sup>th</sup> member of the COMSATS' Network of International S&T Centres of Excellence, the Centre was issued a Certificate of Membership to COMSATS Network on 9<sup>th</sup> July 2014.

The 17<sup>th</sup> Coordinating Council accorded approval for the replacement of five Technical Advisory Committee (TAC) members with the officials, belonging to Brazil, Egypt,

Ethiopia, Iran, and Malaysia, nominated by The World Academy of Sciences (TWAS). On 4<sup>th</sup> June 2014, COMSATS Secretariat issued letters of appointment to the new TAC members: Prof. Glaucius Oliva, Instituto de Fisica de Sao Carlos, Universidade de Sao Paulo, Sao Carlos, Brazil; Prof. Dr. Adel El Sayed Tawfik El-Beltagy, Chair, International Drylands Development Commission (IDDC), Egypt; Prof. Wendimagegn Mammo Deneke, Professor, Department of Chemistry, Addis Ababa University, Ethiopia; Dr. Seyed Habib Firouzabadi, Emeritus Distinguished Professor, Department of Chemistry, Shiraz University, Iran; and Prof. Khatijah Mohamad Yusoff, Dean, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, Malaysia.

The Council's decision regarding constitution of COMSATS Panel of Experts on Science, Technology and Innovation Policy was followed-up by issuing formal letters of appointment to the members of TAC from UNESCO, TWAS, CIF-Colombia, and Government of Sri Lanka. An announcement was also circulated to all Focal Points of COMSATS encouraging them to seek free consultancy from COMSATS Panel of Experts on formulating/reviewing their national policies related to science, technology and innovation.

Efforts were continued to ensure that the Member Countries and Centres of Excellence make use of the standing offer of CIIT's 100 post-graduate scholarships to study at the Institute's various campuses in Pakistan (Page 137).

The Council had recommended that COMSATS should collaborate with TWAS in the area of Science Diplomacy. In this regard, COMSATS Secretariat sent a proposal to TWAS to reach a Cooperation Agreement. The proposal has been accepted by TWAS and an MoU will soon be signed between COMSATS and TWAS to initiate collaboration in Science Diplomacy.

Following the approval of the Council on the draft Memorandum of Understanding to be signed between COMSATS and UNESCO, the same was submitted to the UNESCO Executive Board at its 195<sup>th</sup> session (15<sup>th</sup> – 30<sup>th</sup> October 2014, Paris) for approval. The proposal was approved by the Board that also authorized the Director-General of UNESCO to sign the MoU with COMSATS. An understanding was reached that the MoU will be signed during the first quarter of 2015.

The announcement of NMC-Nigeria to hold the foundation meeting of the ITRG on Mathematical Modelling during 2014 was substantiated, when the Foundation meeting of the Group was successfully held on 2<sup>nd</sup> December 2014 in Abuja (Page 64). COMSATS sponsored the air travel of ITRG members from Sri Lanka, Tanzania, and Pakistan, for attending the meeting.

### **Disbursement of Annual Membership Contribution (AMC)**

To ensure the much needed financial mobilization from the stakeholders, and to garner ownership and political and financial support of the Member States, COMSATS Secretariat's year-long activities also focus on encouraging them to make regular payments of their Annual Membership Contributions (AMC). Voluntary in nature, these contributions are maintained as country-wise Trust Fund. AMC provides COMSATS with some financial freedom to suitably conduct technical activities and programmes in the contributing member countries in general, as well as to assist their

researchers and scientists to actively participate in COMSATS international capacity-building events and programmes.

During the calendar year 2014, COMSATS Secretariat corresponded/followed-up with the focal points in Member States, including Colombia, Egypt, Jamaica, Nigeria, Pakistan, Sri Lanka, Tanzania, Uganda, and Zimbabwe to expedite the payment of AMC as per earlier commitments made during meetings of COMSATS statutory bodies in recent years.

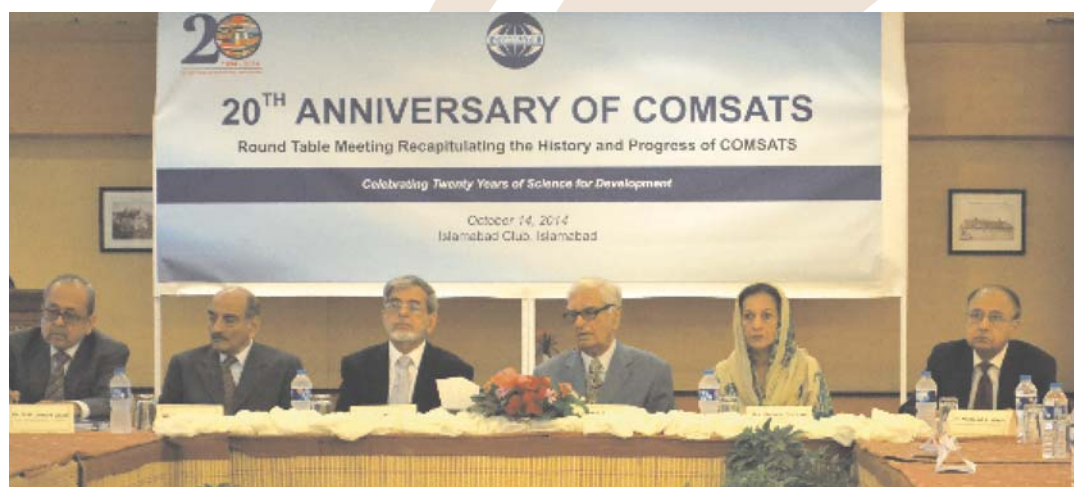
More follow-ups were made by COMSATS officials during their international visits. In his visits to Ghana, Iran, and Tanzania, the Executive Director COMSATS established the importance of these voluntary contributions and their benefits for Member States, as well as urged COMSATS Focal Points to make these contributions on regular basis. As a result of the efforts, satisfactory inflow of AMC was observed during 2014. A brief account of the AMC received during the reporting period is given in the Section 11 of this Report.

## 20<sup>th</sup> Anniversary of COMSATS

The year 2014 marked the 20<sup>th</sup> anniversary of COMSATS. In order to celebrate the two decades of successful operations, COMSATS Secretariat held a graceful ceremony in Islamabad on October 14, 2014. The event not only served as aide-mémoire of an important landmark for the organization, but also as a means of a candid interaction between the machinery and stakeholders of the organizations.

The meeting was presided over by Dr. Ishfaq Ahmad, former Advisor to the Prime Minister of Pakistan on Science and Technology, and founding member of COMSATS International Technical Advisory Committee. Ms. Shahnaz Wazir Ali, President of the Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST, Pakistan) and former Special Assistant to the Prime Minister of Pakistan, also graced the occasion with her presence. Ms. Wazir Ali also holds the distinction of signing the intergovernmental agreement on behalf of the Government of Pakistan to establish COMSATS in 1994.

The event had representation of officials from COMSATS Secretariat, COMSATS Institute of Information Technology (CIIT), COMSATS Internet Services (CIS), COMSATS focal Ministry in Pakistan, the Ministry of Science and Technology (MoST) and its affiliated institutions. Also present on the occasion were the former Executive Directors and employees of COMSATS; representatives of COMSATS Member







State embassies in Islamabad, including China, Egypt, Kazakhstan, Korea D.P.R., Sri Lanka, Sudan and Tunisia; as well as representatives of COMSATS international partner organizations.

In his welcome address, the Executive Director COMSATS, Dr. Imtihan Elahi Qureshi made a presentation covering the scope, activities, and future aspirations of the organization. He also gratefully acknowledged the presence of worthy guests, some of whom had played key role in the establishment and progress of COMSATS. He elaborated on the multifaceted strategy adopted by COMSATS, including advocacy of S&T's centrality in development process; S&T capacity-building, and South-South cooperation. Dr. Qureshi paid rich tribute to the small team of COMSATS employees, who over the years have been putting their best efforts to the success of the organization. A special mention was made of those who have been associated with COMSATS and have since passed away. During his presentation, he also outlined the key priority areas for the next ten years, which included strengthening of COMSATS Endowment Fund, attaining desired momentum for the International Thematic Research Groups; strengthening advocacy of S&T-led development in Member States; and realizing substantial outcomes for the new and planned initiatives of the organization, such as COMSATS Distinguished Professorship Scheme; ST&I Panel of Experts, and COMSATS Technology Park.

On the occasion, Dr. Ishfaq Ahmad gave an account of his personal interaction with Prof. Dr. Abdus Salam and considered the establishment of COMSATS as one of Prof. Salam's desires that were fulfilled by Pakistan. He recalled how fondly Prof. Salam used to discuss the idea of establishing an organization that would gather a number of developing countries at an international forum created for advocacy of S&T for development.

**Message from Mr. Charles Grant  
Director General, International Centre for  
Environmental  
and Nuclear Sciences (ICENS), Jamaica**

"The 20<sup>th</sup> anniversary of COMSATS is the occasion of great celebration by the progressive scientific Community of the 21 Member States who have truly embraced the philosophy of South-South cooperation. The first 20 years have been a resounding success; we have seen the number of designated COMSATS Centres of Excellence almost double from the original 10, which included ICENS, to 19, with numerous linkages to international institutions being established (North-South collaboration). The important milestones reached to date could not have been achieved without strong Governmental commitment and a well-organized secretariat; to this end we must all congratulate the Government of Pakistan and the COMSATS Secretariat for their steadfast support of the vision.



On behalf of ICENS and the Government of Jamaica, I wish the organization a bright and prosperous future. I am sure the next 20 years will be even more impressive. No celebratory statement of COMSATS could be complete without mention of one of its most outstanding founders, the late Prof. Abdus Salam, who conceived the idea of COMSATS and who recognized that the socio-economic development of nations of the South is inextricably linked to their indigenous capacities in science and technology. While we celebrate the legacy of the esteemed late Prof. Salam, we should be mindful to note that the journey is by no means complete, let us all take this opportunity to redouble our efforts, both nationally and institutionally, to achieving our common goal so aptly enshrined in COMSATS' mission statement: "To help create a world where all nations are at peace with each other and capable of providing a good quality of life to their populations in a sustainable way, using modern scientific and technological resources."



Ms. Shahnaz Wazir Ali deliberated upon the political and social scene of Pakistan at the time of the creation of COMSATS. Referring to COMSATS as Prof. Salam's brainchild, she considered his untimely departure a great loss to the scientific panorama of the country. She was of the opinion that Pakistan has gradually lost the much needed advocacy of S&T. She offered her personal and political support for promoting the cause of COMSATS to the relevant quarters of the Government of Pakistan.

The three former Executive Directors present on the occasion noted that the organization has come a long way in realizing the vision of Prof. Salam and showed confidence in the present leadership and programmes of COMSATS. Mr. Parvez Ahmed Butt, the founding Executive Director, especially felt intrigued by COMSATS initiative of International Thematic Research Groups (ITRGs), which he believed is prompting the use of scientific research by pooling intellectual resources from the countries of the South for national development. In order to improve the efficacy of COMSATS programmes, Mr. Butt proposed some key initiatives that, inter alia, included: measuring and mapping of scientific resources in the Member States for honouring the deserving scientists and availability of relevant data for use; and efforts for promoting the correlation between government functionaries, entrepreneurs and researchers, which he referred to as Technology Triangle, for passing the benefits of S&T advancements to the various strata of the society.

In his remarks on the occasion, Dr. Junaid Zaidi, the founding Rector CIIT shared some of the historic episodes that took place during the Foundation Meeting of COMSATS, and appreciated the catalytic role played by H.E. Mr. B. W. Mkapa, the then Tanzanian Minister for Science, Technology and Higher Education in establishing COMSATS. He noted with pleasure his early contributions towards the organization that included drafting the concept papers on COMSATS Internet Service (CIS) and COMSATS Institute of Information Technology (CIIT). Noting the humble beginning of CIIT in 1998, he shared the success of CIIT over the years, that is manifested through its students enrolment of 35,000, more than 700 research

**Message from Dr. Bahadır Tunaboğlu  
President, TÜBİTAK Marmara Research  
Center (MAM), Turkey**

"Over the recent decades, developing countries have emerged as the engine of global economic growth. Projections show that this significant role of the emerging economies will make a distinctive mark within the next decades, as well.



In that regard, COMSATS which set off with the purpose of accompanying the developmental adventure of the countries of the South, adopted an unerring mission 20 years ago. Having successfully promoted cooperative activities among the countries of interest, COMSATS has proven itself as an esteemed inter-governmental organization in the area of science and technology.

As TÜBİTAK MAM, we are proud to be a part of the COMSATS' Network of Centers of Excellence. We hereby congratulate COMSATS on 20 years of superlative efforts to enhance the South-South cooperation and strongly believe that our relations will further develop in the years to come".







publications during 2014, and the operational budget of 4.7 Billion PKR, most of which is generated by the Institute itself. He also shared a brief account of the Founding Meeting of the Board of Governors of CIIT in 2000, and appreciated the guidance of the then members. He considered CIIT as an important Centre of Excellence of COMSATS, which bears the organization's name and called for a special support from COMSATS Coordinating Council.

Dr. Hameed Ahmed Khan, gave a brief account of some of the activities undertaken during his tenure as the Executive Director COMSATS from 2000-2008. He acknowledged the contributions of his predecessors and the incumbent Executive Director in making COMSATS a success. He also advocated a good balance between basic and applied research, as well as the sharing of facilities, experience and manpower among the developing countries, which he believed is what COMSATS has been trying to achieve over the years.

In his video recorded message, Prof. M. H. A. Hassan, the former Executive Director TWAS, recapitulated the efforts of Prof. Salam in the years of run up to the establishment of COMSATS. He recalled with highest regard that Prof. Abdus Salam was driven by the intense passion of achieving the highest standard of excellence in scientific research, and improving the working conditions of scientists, especially physicists and mathematicians living in countries having poor conditions for research. He noted that Salam after having earned the Nobel Prize in 1979, adopted a broader agenda of setting-up a global academy of sciences for scientists working in any of the basic sciences, which led to the creation of TWAS in 1983.

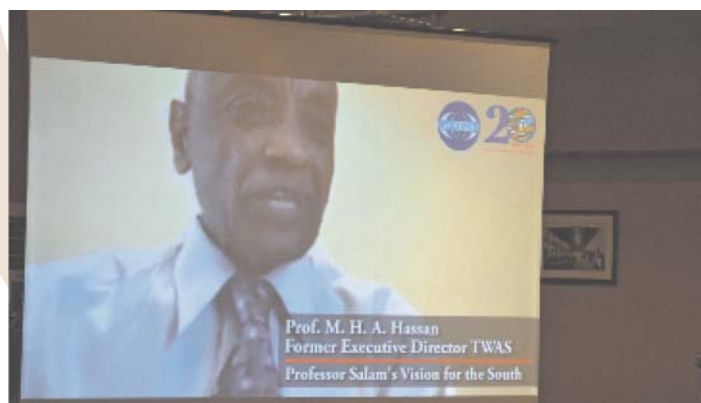
Salam was also fascinated by the Network of Centers of Excellence under the

**Message from Dr. A.K.M. Asaduzzaman  
Chairman, Bangladesh Council of Scientific and  
Industrial Research (BCSIR), Bangladesh**

"On the occasion of the 20<sup>th</sup> Anniversary of COMSATS, on behalf of BCSIR and the people of Bangladesh, I would like to express my heartfelt felicitations to all the stakeholders from the member countries who have been contributing in developing COMSATS as an important regional platform for cooperation in science, technology and innovation which is essential for the South in building knowledge and technology based economies focused at sustainable development.



As in the past, BCSIR as a technical partner of COMSATS is committed to continue and enhance its role in all the relevant areas of science, innovation and technologies with an ultimate aim to improve the quality of living of the people in the South through effective transfer of technologies among the Member States so as to reduce the gap between the North and the South".





umbrella of what is now known as CGIAR (previously Consultative Group on International Agricultural Research). He wanted to establish a similar network of Centres of Excellence in all areas of Science and Technology. A proposal to create such a Network of 20 Centres of Excellence in S&T, modeled on CGIAR, was mooted by him in 1990/91. He wanted the World Bank to aid the creation of such a network for developing countries, which was not possible at the time, as such a project did not fall under the purview of the World Bank. Building on his learning from the World Bank's oversight of the proposal, Salam started to mobilize the heads of governments in developing countries, not only to support the idea of a Network of Centres of Excellence but also to support Science and Technology at a broader scale. The idea now was to make a Head-of-the-State level Commission, which had the necessary political backing to implement its programmes and strengthen institutions within each member country with the funds of the country. This was to give each country a sense of ownership to the Centres of Excellence (CoEs) rather than making new institutions and trying to find funding from abroad. Prof. Hassan said that COMSATS should be really proud of being able to identify a number of such institutions that are doing extremely well in scientific research at an international level, and making them sustainable using funds provided by their respective governments.

Dr. Eduardo Posada Florez, Director of International Centre of Physics, Colombia and the Chairperson COMSATS Coordinating Council had earlier shared his remarks for the occasion that were read by the Advisor (Programmes) COMSATS, Mr. Tajammul Hussain. Dr. Posada expressed gratitude to the Government of Pakistan for generously supporting COMSATS Secretariat and the organization's programmes, and showed full confidence in Dr. Qureshi for his enthusiastic leadership.

**Message from Prof. Eduardo Posada  
Director International Centre for Physics (CIF),  
Colombia, and Chairperson, COMSATS  
Coordinating Council**

"I have been the Chairperson of COMSATS Coordinating Council since 2010. It is indeed an honour to chair the annual meetings of the forum that comprises of reputed scientists, who are the Heads of high-profile R&D institutions in their respective countries. I feel elated when I see these scientific leaders interacting with each other, with a view to exchange scientific information, to explore new collaboration avenues, and to consider possibilities of launching new scientific research programmes.



The real-time cooperation in terms of learning from each other's experiences, best practices and success stories that is provided through Council meeting is indeed something to be proud about. The translation of these discussions into MoUs and agreements during the Council meeting is a unique contribution of COMSATS towards promoting South-South Cooperation.

Equally important is the first-hand observation of how the laboratories of a particular Centre of Excellence are organized, what facilities are available and how enthusiastic are the researchers. This possibility is provided by organizing the Council meeting in a different country every year, hosted by a different Centre of Excellence, which invites Council Member to have a tour of its laboratories.

And finally, we are all particularly grateful to Dr. Qureshi for his enthusiastic leadership of COMSATS. He and his team are dedicated and hardworking people, with whom it has been my pleasure to work. COMSATS is lucky to have successive Executive Directors, who have done remarkable work during all these years in the consolidation of one of the most important initiatives of Prof. Abdus Salam, the outstanding son of Pakistan. My own Centre in Colombia, CIF, was established in Dec. 1985 with the support of ICTP and Prof. Abdus Salam. The Centre has become internationally known as a prime institution for high quality training and advanced research. I take this opportunity to express my deep gratitude to COMSATS and TWAS, who have jointly published a booklet on the scientific programmes of CIF. This booklet is widely distributed and has played an important role in our international visibility.

Happy anniversary and my best wishes for many more years of successful achievements."





Dr. Arshad Saleem Bhatti, Dean Faculty of Sciences at CIIT, also shared his views on the occasion. With internationalization of science and technology in Pakistan as the central theme of his talk, Dr. Bhatti emphasized using science diplomacy as the means to achieving breakthroughs and creating headways for international scientific cooperation. Dr. Bhatti noted that a paradigm shift has taken place in Pakistan, whereby the universities are nowadays better placed to play a bigger role in the national development of the country, especially due to suitable funding and the greater freedom to make their own international agreements and MoUs for scientific collaboration. He cited the examples of CIIT that with the support of Ministry of Science and Technology (MoST), Government of Pakistan, is benefiting from the agreements reached with institutions like University of Illinois Urbana-Champaign (UIUC), USA, and Tsinghua University School of Sciences (TUSS), China. Dr. Bhatti also noted that as part of its internationalization activities, CIIT has a standing offer of 100 scholarships to students from COMSATS member countries, and at present has around 50 foreign students in its various campuses. He also emphasized the need to be a part of multilateral research activities, such as experiments in CERN and SESME, where a large number of countries participate and bring benefits of their experiences to their scientific communities.

Steered by Dr. Ishfaq Ahmad and Ms. Wazir Ali, a short concluding interactive discussion session touched upon issues like North-South divide, open knowledge sharing, and role of S&T in addressing key development issues. Highlighting the relationship between Science and Society, Ms. Wazir Ali called for flexible and adaptive approaches, free of stereo-typing. Dr. Zaidi asserted that COMSATS full potential can be reached if the financial restraints are somewhat relieved.

Mr. Tajammul Hussain considered COMSATS Network a great asset and a possible means to addressing various key issues of the developing countries.

Dr. Ahmad concluded the session with his remarks. He encouraged all to follow Prof. Salam's passion for identifying problems and finding their solutions.



## SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS' SUPPORT

• International Workshop on Applications of ICTs in Education, Healthcare and Agriculture (15-16 December 2014, Islamabad, Pakistan)	30
• 4 <sup>th</sup> International Workshop and Conference on Nano-materials and Nano-devices (8-9 December 2014, Cairo, Egypt)	32
• 2 <sup>nd</sup> Regional Consultative Workshop on National Innovation System and Intellectual Property (African Region) (25-27 November 2014, Rabat, Morocco)	34
• World Science Day Seminar on Quality Science Education: Securing a Sustainable Future for All (12 November 2014, Islamabad, Pakistan)	38
• 4 <sup>th</sup> International Workshop on Internet Security: Enhancing Information Exchange Safeguards (19-23 October 2014, Dar-es-Salaam, Tanzania)	40
• 50 <sup>th</sup> Anniversary of ICTP in Islamabad (18 October 2014, Islamabad, Pakistan)	43
• National Training Workshop on Repair and Maintenance of Scientific Equipment in Universities, Research Institutions and Small Scale Industries (28 September - 2 October 2014, Karaj, Iran)	44
• 13 <sup>th</sup> CTWF International Symposium on Extreme Weather and Climate: Past, Present, Future (8-11 September 2014, Beijing, China)	46
• IYCr2014 South Asia Summit Meeting on Vistas in Structural Chemistry (28-30 April 2014, Karachi, Pakistan)	47
• Seminar on Science Communication and Journalism (8 April 2014, Islamabad, Pakistan)	50
• International Scientific Spring 2014 (10-14 March 2014, Islamabad, Pakistan)	52
• International Seminar/Workshop cum Exhibition on Sustainable Utilization of Natural Products for Human Health and Well Being (20-23 January 2014, Tehran, Iran)	54
• International Conference on Asian Monsoon and Climate Change (20-21 January 2014, Islamabad, Pakistan)	54



Capacity-building events make a prominent part of COMSATS activities aimed at South-South Cooperation. In spite of its limited financial resources, the organization has been persistently organizing scientific events in areas of crucial importance to strengthen scientific linkages; build indigenous capacities; and promote S&T as a tool for development. Since its establishment, COMSATS has organized and sponsored over 220 national and international events on various subjects. Such events have provided a useful platform to the members of the scientific community, development experts, donor and development agencies, and the decision-makers in particular from Member States, to share their views and experiences on contemporary issues of importance for S&T-led socio-economic development.

## SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS SUPPORT

### International Workshop on Applications of ICTs in Education, Healthcare and Agriculture (15-16 December 2014, Islamabad, Pakistan)

The International Workshop on Applications of ICTs in Education, Healthcare and Agriculture was organized by COMSATS in collaboration with Islamic Educational, Scientific and Cultural Organization (ISESCO); Inter Islamic Network on Information Technology (INIT), and COMSATS Institute of Information Technology (CIIT) in Islamabad, on December 15-16, 2014.

The 2-day international Workshop was inaugurated on December 15, 2014. Dr. Tahir Hijazi, Member (Governance, Innovation and Reform), Ministry of Planning, Development & Reforms, Government of Pakistan, graced the occasion with his presence as the Chief Guest. The inaugural ceremony was also presided over by Dr. Imtinan Elahi Qureshi, Executive Director COMSATS; Dr. S. M. Junaid Zaidi, Rector CIIT and President INIT; and Mr. Ismael Abdel-Hamid, Expert, Science Directorate ISESCO.

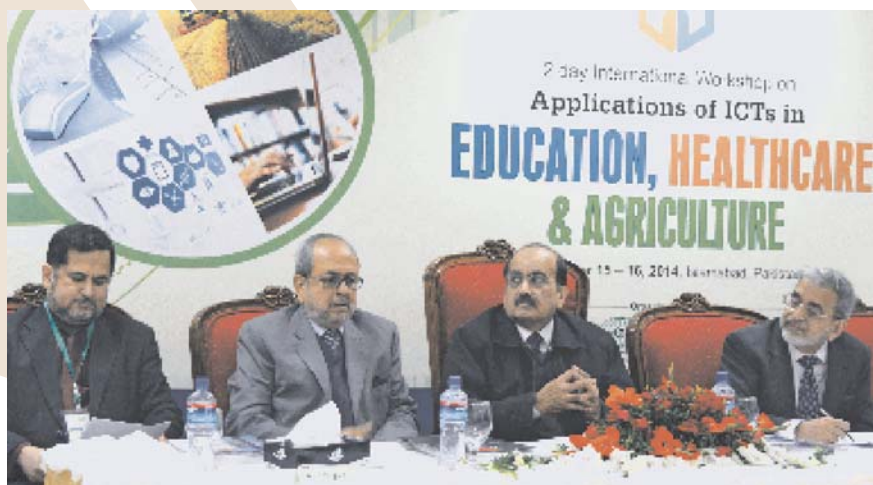
Over 50 scholars, researchers, subject-experts

The technological revolution is bringing a paradigm shift in today's world. If a nation wishes to develop and grow at a fast pace, it has to opt for latest technologies that are creating headways.

**Dr. Tahir Hijazi, Member (Governance, Innovation and Reform), Ministry of Planning, Development & Reforms, Govt. of Pakistan**

The IT revolution is dominated by the developed countries and the starting point for the developing countries to gain from this revolution would be to contribute to the content element, which is in conformity with the local needs and social values.

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





and academicians from Bangladesh, Egypt, Iran, Jordan, Morocco, Pakistan, Senegal, Sudan, and Tanzania, participated in the workshop. The workshop was aimed at highlighting the potential of ICTs in revolutionizing various sectors of the economy.

In all 17 presentations were made in the three thematic sessions of the workshop, which focused on the applications of ICTs in Education, Healthcare and Agriculture. Deliberations focused on the different ways of building competitiveness amid growing challenges of globalization and rapid technological advancements. The presenters shared their experiences and expertise in the light of their successful projects and initiatives in their respective countries.

In his address, Dr. Hijazi acknowledged the efforts being made by organizations like ISESCO and COMSATS in promoting the use of latest technologies in its Member States. He emphasized the need for the developing countries to give due attention to diffusion of new technologies in their development plans. In this regard, he expressed Government of Pakistan's commitment to exploit potential of various technologies, especially those related to Information and Communications.

Dr. I.E. Qureshi noted with satisfaction his organization's strong working relations with ISESCO and INIT. Sharing some key aspects of I.T revolution the world has experienced in the recent years, he stated there were three major aspects to it: the I.T ecosystems, accessibility, and the content. He hoped that the participants of the workshop would lay greater emphasis on the content aspect of the I.T revolution.

Mr. I.A. Hamid in his remarks appreciated the support and cooperation of COMSATS in jointly organizing a number of international capacity-building events over the years. He considered these events as good examples of the South-South cooperation benefiting the common Member States of the two organizations.

Dr. S. M. Junaid Zaidi noted in his remarks that the organizers have very wisely chosen the theme of the workshop, which can help improve the socio-economic conditions of masses.



Earlier, an introduction to the event, its various themes, and expected outcomes were touched upon by Dr. Sajjad Mohsin, Dean, Faculty of Information Sciences and Technology, CIIT.



The presentations made during the first technical session ICTs in Education focused on ICTs for modern skill acquisition; diffusion of ICTs in early schooling; digital watermarking system for e-Education; monitoring and learning education scenarios in Senegal; and persuasive techniques for effective education. Deliberations on the use of mobile phone technology for healthcare; COMSATS Tele-health project; Tanzanian Tele-health case study; Dengue monitoring in Pakistan; as well as psychotherapy through digitization, were made during the second technical session titled ICTs in Healthcare. While on the second day, the participant of the workshop benefited from technical deliberations focusing on decision support system for agriculture; digital soil mapping of newly reclaimed areas for agricultural uses in Egypt; irrigation optimization for improving crop production; use of agriculture research management information system in Bangladesh, as well as the various ICT applications in agriculture in Sudan.

The event concluded on December 16, 2014, on the note of commitment to exploit the full potential of ICTs for improving the day-to-day life of a common man in the developing world. While giving Vote of Thanks, Mr. Tahir Naeem, the Executive Director INIT, noted that the inspiration gained from the technical talks and experiences of subject experts, strengthens our belief in the multifaceted ways ICTs can be beneficial in education, healthcare and agriculture. At the end, certificates of participation were distributed by Dr. Junaid Zaidi, Mr. Ismael Abdel-Hamid and Mr. Tajammul Hussain, the Advisor (Programmes) COMSATS Headquarters.



#### **4<sup>th</sup> International Workshop and Conference on Nano-materials and Nano-devices (8-9 December 2014, Cairo, Egypt)**

On 8<sup>th</sup> - 9<sup>th</sup> December 2014, 4<sup>th</sup> International Workshop and Conference on Nano-materials and Nano-devices (4<sup>th</sup> IWCN-2014) was held in Cairo, Egypt. The event that brought together a diverse group of scientists with a wide range of expertise in various related fields was organized by the COMSATS in collaboration with ISESCO. The event was hosted by COMSATS Centre of Excellence in Cairo, the National Research Centre (NRC).

The event featured presentations and discussions on the latest novel developments made in the fields of nano-education, nano-medicine, nano-energy, nano-filtration,

nano-sensors, and nano-tech strategies and policies. Around 300 experts in the field of nano-materials, representing academia, research institutes, policy makers, industry and private sector, participated in the event.

Prof. Dr. Maged Al-Kreme, President of Cairo University, inaugurated IWCN-2014. He underscored the importance and usefulness of the new nano-devices and products. Prof. Dr. Ashraf Shalaan, President NRC, briefed about the application of nanotechnology in his inaugural address. He considered Nanotechnology, Biotechnology, and Information Technology to be the most influential sectors of the twenty-first century and the deciding factors in determining nations prosperity, dignity and well-being.



Dr. Ismail Abdel-Hamid, Expert at Science Directorate ISESCO, delivering a message from Director-General ISESCO, noted that nano-science is one of the fastest growing fields of science, which has a potential to ensure food, health and ecological security. Dr. Ismail informed that as per the mid-term and long-term action plans of ISESCO, the organization seeks to enhance the capacities of its Member States, enabling them to innovate and develop new technologies with the objective to achieve socio-economic development.

In his message read out on the occasion by Dr. Arshad Saleem Bhatti, Dean Faculty of Science, COMSATS Institute of Information Technology (CIIT), Pakistan, the Executive Director COMSATS, Dr. I.E. Qureshi, noted that nanoscience and nanotechnology are forming a bridge between all disciplines of science and engineering. He believed that even though the Islamic countries have embarked upon ambitious research programmes in nanotechnology, the full potential of this field is yet to be realized. He also gratefully acknowledged ISESCO's consistent support towards COMSATS programmes and activities in the common Member States.

The workshop spanned two days and consisted of 8 technical sessions, featuring 35 technical talks. Nine subject-experts belonging to reputed academic institutions of Bangladesh, China, Jordan, Malaysia, Pakistan, and Saudi Arabia, delivered lectures on key topics related to the theme of the event. The key areas touched upon during the technical talks included: nanoparticles and applications; carbon nano structures





and devices; environmental application; nano-medicine; drug delivery and therapeutics; composites and interfaces; micro and nano fluidics; bio-nano materials and tissues; modeling micro/nanosystems; nanotechnology for oil and gas industry; and micro and nano fabrication. From the platform of the workshop, academicians and researchers also discussed how to address various developmental challenges through relevant R&D in nano-materials and nano-devices.



A number of suggestions were made by the experts and participants of the Conference. Following are a few of the recommendations of the event that provided broad action plan for collaborating organizations of the event to pursue:

- Winter/summer schools on nano-science and technology should be arranged as an annual activity for students and young researchers in collaboration with some national organization;

- Increased number of scholarships for graduate students in the field of advanced materials and nanotechnology should be provided by the funding organizations;

- The research institutions and governments of the common Member States of COMSATS and ISESCO should be urged to form nanotech societies and hold joint meetings with the nanotechnologists of industrially developed countries;

- Institutionalizing ISESCO-COMSATS annual prize for the organizations/institutions with highest achievement in one of the fields of nanotechnology;

- Mega projects according to the national priorities should be initiated by the relevant research institutions in the common Member States and under the patronage of their governments.

The workshop illustrated well the strategic objectives of COMSATS, to serve as a hub for building capacity in the area of nanotechnology. The expected outcomes of workshop were greatly achieved viz-a-viz to support building and strengthening linkages among R&D organizations working for developing new materials and devices, while adopting the South-South cooperation mechanism; and to enhance scientific capacity in Islamic and COMSATS Member States.

## **2<sup>nd</sup> Regional Consultative Workshop on National Innovation System and Intellectual Property (African Region) (25-27 November 2014, Rabat, Morocco)**

The second of the series of 3-day Regional Consultative Workshops on National Innovation System and Intellectual Property was co-organized by COMSATS, ISESCO, and the Inter Islamic Network on Information Technology (INIT) in Rabat,

Morocco, on 25-27 November 2014. Having focused on Asian countries in its first event held in Islamabad during 2013, the 2<sup>nd</sup> workshop of the series aimed at countries belonging to the African Region.

H.E. Dr. Amina Al Hajri, Deputy Director-General ISESCO, inaugurated the workshop on November 25, 2014, at ISESCO Headquarters in Rabat, Morocco. Mr. Tahir Naeem, Executive Director INIT and Mr. Tajammul Hussain, Advisor Programmes, COMSATS, also presided over the inaugural ceremony and made statements on behalf of their respective organizations. Over 40 policy-makers, practitioners, academicians and government functionaries working in the field of National Innovation System and Intellectual Property from 15 countries, Benin, Burkina Faso, China, Côte d'Ivoire, Gabon, Ghana, Guinea, Morocco, Niger, Pakistan, Senegal, Tanzania, Togo, Uganda and United States, participated in the inaugural function.

In her welcome address, Dr. Al Hajri stressed the importance of innovation and research. She informed that ISESCO Centre for promotion of Scientific Research (ICPSR) is a specialized body of ISESCO with a mandate to contribute towards advancing the quality of scientific research in the Muslim World.

Addressing the gathering at the inauguration, the Executive Director INIT, highlighted the conceptual background of national innovation system. He noted that Africa has grand opportunities for economic transformation and development.

Expounding the concept of innovation as a system, Dr. I.E. Qureshi, Executive Director COMSATS, in his message read out on the occasion by Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, commented that in today's rapidly changing socio-economic environment, governments have to play a key role in creating enabling environment for innovation, by harnessing the creativity of their people and enterprises, developing good management practices particularly in small and medium sized firms, and facilitating linkages among different stakeholders. He also pointed out that a new international understanding is also emerging to protect

In this globalized world, Science, Technology and Innovation (ST&I) have become a key element for industrial competitiveness amid intense competition and a fast changing market environment..... it is hoped that this workshop will be instrumental in sharing best practices, and highlighting strengths and weaknesses in the areas of national innovation system and intellectual property in ISESCO' African Member countries.

**Deputy Director-General ISESCO,  
Dr. Amina Al Hajri**

Knowledge production and its valorization are crucial for transformation into a stable intellectual property regime, and South-South cooperation could provide a good mechanism in this regard.

**Executive Director INIT, Mr. Tahir Naeem**

Rapid development in all areas of science and technology has created a greater need for understanding and modeling national innovation processes and systems. Regional linkages aimed at building effective national innovation systems are important.

**Executive Director COMSATS, Dr. I.E. Qureshi**





intangible cultural heritage and to bring traditional knowledge and Folklore under the ambit of Intellectual Property Rights.

The technical proceedings of the event spread over six sessions of the workshop comprising of talks and presentations that introduced innovation; highlighted the impact and effect of innovation on national economies, particularly those of Africa; and presented intellectual property as a means to securing the future of smaller economies. Several models of African innovation systems and frameworks of intellectual property (IP), and their role in making an economy knowledge-driven with strong linkages among universities, industries and R&D institutions, were discussed. Key issues relating to patent filing, indigenous knowledge and need for greater awareness of IP rights were also highlighted. An insight into the innovation policies of developing countries was also provided during the event through the country-specific presentations made by participants from China, Pakistan, Senegal, Tanzania, Burkina Faso, Niger, Uganda and Ghana.

The essential components of the discussions and deliberations of the event are as follows:

It was agreed that a holistic and open economic policy for building a national innovation system, technology policies, relevant education is desirable.

Each country should try and adopt strategies to develop relevant skills required to instill a culture of learning.

ISESCO and COMSATS were urged to encourage the parliaments of the Member States to establish Commissions on National Innovation System to better ensure advocacy on ST&I in all member countries.

A need for greater awareness regarding IP was called for and it was recommended to include modules on IP in the curricula of middle and high schools.

Finally, a round table discussion session, steered by Mrs. Wafaa el Alami, Head ISESCO's Center for Promotion of Scientific Research (ICPSR), covered various aspects of the themes and discussions of the event.

Awareness backed by institutional support was considered crucial for the success of any model of innovation. The discussants agreed that public research institutions must exercise discretion while encouraging patenting and a provision for Patenting must be incorporated at the research funding stage, in order to compel researchers to





### Prominent Participants of NIS/IP Workshop

- Dr. S. T. K. Naim, Consultant, OIC Standing Committee on Scientific and Technological Cooperation (COMSTECH), Pakistan;
- Prof. Chen Song, Deputy Dean, School of Economics and Management, Tongji University, China;
- Dr. Hae-Chan Park, Registered Patent Attorney and Managing Director, H.C. Park & Associates, USA;
- Prof. Akuété Santos, Associate Professor, Private Law, University of Lome, Togo;
- Mr. Diop Amar, Director of Programs, COGuplast, Guinea;
- Alagbe W. Dieu Donne, Director General, National Agency of Industrial Property, Benin;
- Dugushilu Mafunda, Director Innovation, Entrepreneurship and Competitiveness, COSTECH, Tanzania;
- Mr. Poda Jean-Noel, Hydrobiology Research Director, Research Institute of Health Science (IRSS), Burkina Faso;
- Prof. Mamadou Ndiaye Dia, Chef de la Division SHS, Senegal;
- Mr. Ronald Jjagwe Science officer, Uganda National Council for Science and Technology, Uganda;
- Mr. Isaac Kofi Yankson, Head, Commercialisation and Information Division, Council for Scientific and Industrial Research (CSIR), Ghana;
- Dr. Kpangni Emolo Bernard, Assistant Director, Valuation Results of Research, Côte d'Ivoire; and
- Prof. Almou Mamane, Director General of Research and Innovation, Niger.

use IP frameworks. It was also felt that African National Innovation Systems are similar to Asian Models in terms of resource constraint and therefore African policy-makers can learn from successful models from Asia.

A general consensus prevailed during the discussions regarding the advanced nature of the knowledge economy that a transition from the labour-centric economies of Africa required favorable economic policies and political stability, in addition to improving education and awareness. However, it was also agreed that for some African nations endowed with ample natural resources, taking the lateral route to a knowledge economy was not necessary, rather larger leaps towards industrialization were needed consistent with the requirements of the region. For small economies it was deemed important to protect innovations through ensuring Intellectual Property Rights (IPR), as the IP paradigm was based on the most advanced labor, i.e. intellectual labour. Prof. Mamadou Ndiaye Dia said that each state needs to develop strategies for capacity building in order to create a learning culture. Prof. Almou Mamane stressed the need for media to play its due role to educate the people and sensitize governments to develop legal instruments and frameworks to fill gaps in policies of Science, Technology & Innovation (ST&I). He said that Decision Support Systems (DSS) need to be efficient in order for the national innovation system to work and opined that Niger lacked the capacity to develop an action plan to effectively use the available UNESCO funding. Dr. K.E. Bernard said that since government budgets are discussed in parliaments, therefore, there is a need to





sensitize politicians on the merits of strong and efficient national innovation system. Once this is done, only then can governments be encouraged to create ST&I committees, within parliaments in order to ensure effective implementation. While citing the example of Moroccan marketed Aragon oil, Mrs. Wafaa el Alami, head of ICPSR-ISESCO said that increased investment in science was also required although a lack of technology did not equate to a lack of innovation. It is imperative to build linkages to ensure need-driven innovation to take place, which is supported by necessary infrastructure and continuous funding.

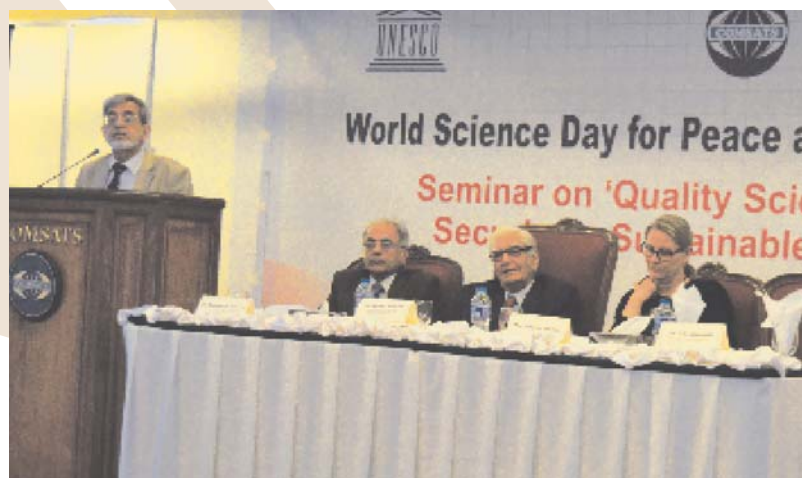
Mrs. Alami presided over the closing ceremony of the event held on November 27, 2014. In her closing remarks, she opined that the developing countries will have to support and strengthen their intellectual property organizations in the light of the existing regional models, in order to improve the delivery mechanism of their national innovation system. Mr. Tahir Naeem in his vote of thanks appreciated the strenuous efforts of the organizers for making the event successful. He encouraged the participants to give their feedback to further improve the outcomes of the future events of the series of workshops. On behalf of COMSATS, Mr. Tajammul Hussain gave concluding remarks thanking ICPSR-ISESCO and INIT. He informed that the 3<sup>rd</sup> workshop on the theme will be held in the near future for the Middle East region.

### **World Science Day Seminar on Quality Science Education: Securing a Sustainable Future for All (12 November 2014, Islamabad, Pakistan)**

The 2014 World Science Day for Peace and Development was commemorated with holding of a half-day seminar in Islamabad on the UNESCO's prescribed theme for the year: Quality Science Education: Securing a Sustainable Future for All. The event was organized by COMSATS in collaboration with ECO Science Foundation (ECOSF) and UNESCO Office Islamabad, on November 12, 2014.

Dr. Ishfaq Ahmad, a renowned physicist and former Advisor to the Prime Minister of Pakistan on Science and Technology, graced the occasion with his presence as the Chief Guest. Other distinguished guests present on the occasion were Dr. Manzoor Hussain Soomro, President ECOSF; Ms. Vibeke Jensen, Director UNESCO Office Islamabad, and Dr. Imtihan Elahi Qureshi, Executive Director COMSATS.

Welcoming the participants of the Seminar, Dr. Soomro emphasized the importance of Inquiry Based Science Education (IBSE) at schools as the most important tool for development of nations. Dr. Soomro, who is also the member of the Global Council of the Science Education Programme (SEP) of the Inter-Academy Panel (IAP) noted that SEP-IAP is promoting inquiry based science education, and the curricula around the world are being updated and revised to be in line with the scientific developments. He announced that ECOSF has embarked upon a programme for the promotion of IBSE in 10 ECO member countries in collaboration with the countries Academies of Sciences and Ministries of Science and Education.





Ms. Jensen was of the opinion that encouraging critical thinking and creativity in students at all levels can enable them to contribute to environmental, economic and social development in areas ranging from climate change, disaster risk reduction, water management, energy, food security and medicine, to poverty reduction, better health and sustainable consumption. She announced that UNESCO has launched its World Library of Science (WLoS), a free online resource for learning about sciences through text, pictures, illustrations and videos, to make scientific concepts easy to understand.

Speaking on the occasion, Dr. I.E. Qureshi appreciated the life-long services of Dr. Ishfaq Ahmad for science and technology. He recognized scientific cooperation as the key to achieving sustainable development for the South. Touching upon the initiative taken by COMSATS for the promotion of quality education in the country, he noted that COMSATS Institute of Information Technology (CIIT) was launched as a small project in 1998, which now is well recognized university with seven campuses and over 35,000 enrolled students.

In his address, Dr. Ishfaq Ahmad noted that while Pakistan, an agrarian economy, is confronted with huge water shortage, science and technology can provide means for addressing this vulnerability, as well as the challenges posed by global climate change. He also called for achieving gender parity, particularly in tertiary education, to curb the menace of over population, which is among the most significant problems facing the national economy.

The event attracted a gathering of over 100 science students, representatives of scientific institutions, academicians, as well as policy makers and members of the diplomatic community in Islamabad. The seminar comprised of an inauguration and a technical session followed by a poster exhibition session.

During the technical session of the seminar, talks were given by Dr. Tariq Mahmood, Advisor, Higher Education Commission (HEC) of Pakistan; Dr. Faisal F. Khan, Director, Institute of Integrative Biology, CECOS University, Peshawar, Pakistan; Dr. Fayyaz A. Faize, Assistant Professor CIIT, Islamabad, Pakistan; and Mr. Salman Naveed Khan, Campaign Manager (Political Advocacy) of Alif Ailaan, Pakistan.

These talks, in general, deliberated upon the role of HEC in improving the standard of education and research in the country; new trends in life sciences; interdisciplinary and entrepreneurial nature of modern science education; ensuring ethical disposition; quality teaching; as well





as, challenges of providing quality science education in schools of Pakistan. Speakers expressed their concern for a high number of out-of-school children and pressed the government and the civil society to play a greater role in this regard.

One of the highlights of the event was the poster exhibition and competition. Over 40 posters, prepared by science students and researchers were presented, explicating the role of science for a progressive society in themes of agriculture, health, biosciences, nanotechnology and computational sciences. These students and researchers belonged to eleven science departments of different universities and colleges of the country.

At the close of the seminar, five awards for the Best Posters along with cash prize were given to students of CIIT, National University of Science and Technology (NUST), Forman Christian College (FCC), and the University of Lahore (Islamabad campus). Dr. Soomro and Dr. Qureshi handed over certificates and cash prizes to the winning students.



#### **4<sup>th</sup> International Workshop on Internet Security: Enhancing Information Exchange Safeguards (19-23 October 2014, Dar-es-Salaam, Tanzania)**

The 4<sup>th</sup> International Workshop on Internet Security: Enhancing Information Exchange Safeguards was jointly organized by COMSATS, ISESCO, INIT, CIIT, and the Tanzania Commission for Science & Technology (COSTECH), Tanzania, from October 19-23, 2014, in Dar-es-Salaam, Tanzania. Hosted by COSTECH, the event was the fourth of the series of workshops on the theme held to train I.T professionals of developing countries, in order to enable them to collectively address issues and challenges related to information and Internet security. About 60 young researchers, practitioners, academicians, system administrators and programmers working in the field of Internet/information security from Uganda, Iran, Tunisia, Senegal, Egypt, Nigeria, Jordan, Pakistan, and Kenya, benefited from the proceedings of the workshop.

The event was inaugurated by Prof. Patrick Makungu, Permanent Secretary, Ministry of Communication, Science and Technology, Government of Tanzania, on 20<sup>th</sup> October 2014. Prof. Makungu was representing H.E. Prof. Makame M. Mbarawa, Minister for Communication, Science and Technology, Government of Tanzania. In his





inaugural address, Prof. Makungu paid gratitude to the foreign experts and participants for travelling to Tanzania to participate in the event. He conveyed the message of H.E. Prof. Mbarawa, in which the honourable Minister had thanked ISESCO, COMSATS, CIIT and INIT for organizing this important workshop in Tanzania. Prof. Mbarawa informed the participants about the ICT infrastructure and Internet security situation in Tanzania. He apprised that Tanzania is reported to have lost nearly US\$ 6 Million due to cyber-crimes, involving mostly card skimming and ATM thefts. The Minister noted that the workshop came at an opportune time in Tanzania as the month of October is dedicated to cyber-crime awareness. Some initiatives launched by the Government of Tanzania for controlling cyber-crimes were also shared, including the establishment of the Cyber Crime Unit in the police force; development of cyber law; and establishment of Computer Emergency Response Team (CERT).

In his welcome address, Dr. Hassan Mshinda, Director General COSTECH, expressed pleasure on hosting the workshop, and welcomed all foreign and local participants of the event. He hoped that the workshop will facilitate formation of a network of Internet security experts and professionals for the effective exchange of expertise, know-how and related technical facilities.

Dr. S. M. Junaid Zaidi, Rector CIIT and President INIT, in his message, read out on the occasion by Mr. Muhammad Atiq-ur-Rehman, Senior Program Officer, INIT, recalled the national and international level legislations made during the past two decades, as well as the policy and organizational changes that took place over the years in the field of Information Technology. Dr. Zaidi stated that INIT is cognizant of the dire need of the Islamic countries to enable the scientific workforce to face the challenges related to protecting their information assets.

Dr. Aicha Bammoun, Science Directorate, ISESCO, conveyed the greetings of the Director-General ISESCO. She stated that the rapid growth and widespread use of electronic data-processing and business conducted through the Internet, along with numerous occurrences of international terrorism, have fueled the need for better techniques to protect computers and the information being stored, processed and transmitted.

Dr. I.E. Qureshi, Executive Director COMSATS, in his message read out on the occasion by Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, extended





gratitude to ISESCO, INIT, CIIT, and COSTECH for joining hands with COMSATS in order to organize this important workshop. Dr. Qureshi emphasized on the need for international cooperation to ensure security of the cyber space. Dr. Qureshi said that COMSATS strives to develop and deploy effective training courses, making available the necessary expertise and resources to further assist its member countries to prevent, defend against and respond to cyber threats.

The five-day event provided a forum to the participating researchers and professionals to learn about the latest advancements in the field of Internet security; the use of state-of-the-art technologies for protection of network and network accessible resources from different types of software attacks; as well as working out effective Internet/information security solutions for general public, governmental organizations and commercial enterprises through rigorous risk analyses and security management approaches.

During the technical sessions of the workshop, four resource persons imparted training:

Dr. Haider Abbas, Research Fellow/Assistant Professor, Center of Excellence in Information Assurance, King Saud University, Saudi Arabia;  
 Dr. Malik Najmus Saqib, Assistant Professor, CIIT, Pakistan;  
 Mr. Zafar Mir, Regional Manager, Information Security Risk, MENA HSBC, UAE;  
 and  
 Mr. Asad Raza, Lecturer of Information Technology (Networking & Security), Majan University College, Oman.

The training modules pertained to various important subjects relating to organizational security; cryptography and network security; ethical hacking; cyber security and information security design principles; and security information and event management systems. The specific topics covered during the workshop included: Organizational Security and Industry Standards; Information Security Policies, Objectives and Procedures; ISO 27001 ISMS Standard and related Security Controls; ISMS Policy/Procedures Writing; Information Assets Identifications; Risk Assessment; Risk Treatment; Statement of Applicability; Business Continuity Planning; Cloud Computing; Security Risks and Threats of Cloud Computing; Organization's Cloud Security Concerns; Symmetric Key vs. Asymmetric Key Cryptography; Block Ciphers vs. Stream Ciphers; Hash Functions; Digital Signatures; Kerberos; Secure Electronic Transaction; Introduction to Ethical Hacking and Penetration Testing; Information Gathering; System Hacking; Breaking Wireless Security; Introduction to Information Security Design Principles; Emerging Cyber Threats and their Significance; Dissecting a Cyber Attack; Various Phases in Planning a Cyber Attack; Recent Distributed Denial of Service Attacks; Possible Mitigation Solutions to Service Attacks; Password Attacks; Introduction to SIEM (OSSIM); as well as Integration of OSSIM with other tools and Prevention Methods.

The ceremony concluded with the distribution of certificates to local and foreign participants.



## 50<sup>th</sup> Anniversary of ICTP in Islamabad (18 October 2014, Islamabad, Pakistan)

On 18<sup>th</sup> of October 2014, COMSATS and the Pakistan Chapter of the Abdus Salam International Centre for Theoretical Physics (AS-ICTP) jointly celebrated the 50<sup>th</sup> Anniversary of the AS-ICTP during a function that was held at COMSATS Institute of Information Technology (CIIT), Islamabad Campus, Pakistan. The event was held to highlight the remarkable achievements of the Centre over the period of last half-a-century, which also showed COMSATS solidarity with international scientific community.

More than 100 ICTP alumni attended the event. Among the participants, many have been associated with the Centre since its inception. These included: Prof. Fayyazuddin, National Distinguished Professor, National Centre for Physics (NCP), Islamabad; Prof. Ghulam Murtaza, Former Salam Professor, GCU, Lahore; Prof. M. Zafar Iqbal, Advisor, Department of Physics, CIIT, Islamabad; Prof. Abdullah Sadiq, Dean, Faculty of Basic and Applied Sciences, Air University, Islamabad; and Dr. N. M. Butt, Chairman PINSAT, Islamabad. Other prominent participants included Dr. I.E. Qureshi, Executive Director COMSATS; Dr. Aslam Baig, Head, Laser Plasma Physics, NCP, Islamabad; Dr. Hamid Saleem, Former Director-General NCP, Islamabad; Dr. Kashif Sabeeh, Associate Professor, Department of Physics, Quaid-e-Azam University, Islamabad; and Dr. Arshad S. Bhatti, Dean, Faculty of Sciences, CIIT, Islamabad. The speakers shared their personal experiences and memories of stay at ICTP and highlighted the role of ICTP in the development of their academic and scientific careers. They also shared some memorable photographs with the audience featuring Nobel Laureates and other most prominent personalities of the world of science. Accounts of their interactions with Prof. Salam were highlights of their speeches.

In the end, Dr. I.E. Qureshi highlighted the commonalities between AS-ICTP and COMSATS as both institutions were established with the efforts of Prof. Abdus Salam. and based their activities on the central role of science for socio-economic development. He emphasized the role played by COMSATS in promoting Prof. Salam's vision of South-South cooperation. The celebrations were marked by the soft launching of the Urdu translation of the book, titled One Hundred Reasons to be a Scientist, published by ICTP in 2004. The highly challenging task of translating the

book took almost four years with inputs from a panel of 20 subject specialists.

The proceedings of this event are expected to be brought out during the first half of 2015 by COMSATS.





## National Training Workshop on Repair and Maintenance of Scientific Equipment in Universities, Research Institutions and Small Scale Industries (28 September – 2 October 2014, Karaj, Iran)

Under COMSATS-ISESCO Cooperation Programme (2014-15), 5-day COMSATS-ISESCO National Workshop on Repair and Maintenance of Scientific Equipment in Universities, Research Institutions and Small Scale Industries, was held in Karaj, Iran, on 28 September – 2 October 2014.



The event was a part of series of workshops on a topic organized with an aim to help Member States achieve self-reliance in repair and maintenance of the scientific equipment by developing indigenous capacities of local manpower. The earlier events of the series have successfully been organized in Sudan (2004, 2005, 2013), Syria (2005), Senegal (2010), Egypt (2011), and Tunisia (2012). So far, more than 300 technicians, engineers and scientists have received hands-on training on various scientific instrument thus

helping them in indigenous upkeep and maintenance of their instruments and reducing their dependence on foreign experts.

Hosted by COMSATS Centre of Excellence in Iran, the Iranian Research Organization for Science & Technology (IROST), the event was also supported by the Standard Research Institute (SRI), Iran; Instructors Training Centre (ITC), a centre of Technical and Vocational Training Organization (TVTO), Iran; and University of Tehran, Karaj, Iran.

The workshop was inaugurated by the Acting President for International Cooperation, IROST, Dr. Mahmoud Molanejad, on September 28, 2014. Other distinguished guests of the inaugural ceremony were Dr. Abbas Sadri, Director of ISESCO Regional Office in Tehran; Mr. Nisar Ahmad, Deputy Director (Systems), COMSATS; Dr. Maryam Jalili, SRI; and Dr. Mohammad Yaqub and Mr. Arif Karim, the two resource persons of the workshop from Pakistan Council for Scientific and Industrial Research (PCSIR). Also present on the occasion were the participants of the workshop, senior officials and representatives from IROST, STI, ITC-TVTO, ISESCO Regional Office in Tehran, University of Tehran, as well as from other institutions of Iran.

In his welcome address, Dr. Molanejad, welcomed the representatives from COMSATS and ISESCO, experts and participants, and thanked the two organizations for





patronizing the workshop in Iran. Dr. Sadri conveyed message of H.E. Dr. Abdulaziz Othman Altwaijri, the Director-General ISESCO. He considered the event the means to further enhance mutual cooperation among researchers, technicians and engineers from the different institutes of Iran. Dr. Altwaijri in his message reaffirmed the participants of ISESCO's support to such activities and informed that repair and preventive maintenance of laboratory equipment are among ISESCO's priorities as prescribed in its Annual Action Plan.

A message of the Executive Director COMSATS, Dr. I.E. Qureshi, was read out on the occasion by the event coordinator from COMSATS. Dr. Qureshi opined that uninterrupted process of R&D can only be ensured by training the relevant technicians, engineers and scientists to indigenously address at least the most common issues of equipment functionality. The training workshop in Iran was being held with the same objective to cater for the most relevant scientific needs of COMSATS member countries.

On behalf of SRI, Dr. Jalili appreciated the efforts made and patronage provided by COMSATS and ISESCO for holding the event in Iran.

The workshop comprised of 10 technical sessions, including lectures, hands-on training and visits to different laboratories of the Central Lab of Tehran University and ITC. Seminar and hands-on training was imparted to trainees on specimen equipment, which included: Spectrophotometer Systems; Flame Photometer Systems; pH Meters; Colorimeter, Laboratory Balances, Gas Chromatographic Systems; HPLC Systems; Thermal Equipment (Oven & Furnace); Thermal Analyzer; Electron Microscopes; as well as Atomic Absorption system and XRF system.

The workshop resulted in training more than sixty (65) participants, including engineers, researchers and trainers from various cities of Iran. The workshop





provided the participants an opportunity to learn latest repair and maintenance techniques.

Using the knowledge and techniques learnt during the workshop, the participants successfully repaired some of the expensive equipment that had been lying faulty for the last many years. The equipment that were fully repaired include: Flame photometer, Electric Ovens (02 numbers), Analytical Balance, pH meter (02 numbers) and Electrophoresis Apparatus.

The beneficiaries of the event expressed their gratitude to ISESCO and COMSATS for organizing the workshop and providing such an opportunity of learning and enhancing their expertise. The success and usefulness of the workshop is reflected from the following feedback of the participants:

Duration of the workshop should be increased and its scope enhanced with inclusion of more equipment in the list of training modules.  
The number and frequency of the workshops may be increased.

Moreover, the participants endorsed the importance of South South cooperation for developing scientific capacities of developing countries. The professionalism of the two resource persons mobilized by COMSATS was highly appreciated.

### **13<sup>th</sup> CTWF International Symposium on Extreme Weather and Climate: Past, Present, Future (8-11 September 2014, Beijing, China)**

The 13<sup>th</sup> CTWF International Symposium on Extreme Weather and Climate: Past, Present, Future was held on September 8-11, 2014, in Beijing, China. The event was organized by the International Center for Climate and Environment Sciences (ICCES), China, and the Institute of Atmospheric Physics (IAP), China, with the support of the Chinese Academy of Sciences (CAS), The World Academy of Sciences (TWAS), CAS-TWAS-WMO Forum on Climate Science (CTWF), and COMSATS. The symposium was held to provide a forum to the subject experts, researchers and students, belonging to various developing and developed countries, to exchange knowledge and expertise with a view to enhance preparedness for extreme weather and climate events. About 80 scientists, researchers and students belonging to Pakistan, China, Egypt, Tunisia, India, Thailand, Sudan, Ethiopia, Bangladesh, Iran, South Africa, Japan, USA and Canada, benefited from the proceedings of the event.

Comprising of 43 oral and 5 poster presentations by 38 researchers, the event covered topics relating to inland and coastal flooding; heat wave and drought; extreme events due to air pollution; and impacts of extreme events on society. Seven renowned scientists delivered plenary talks at the symposium on causes, characteristics, risk control and the societal impacts of extreme weather and climate events. These were:

Dr. Francis Zwiers, Director, Pacific Climate Impacts Consortium, University of Victoria, Canada;  
Dr. Thomas C. Peterson, President, WMO Commission for Climatology, USA;  
Dr. Christopher Lennard, Senior Researcher of Climate Systems Analysis Group,

University of Cape Town, South Africa;  
Dr. Roger Pulwarty, Director, National Integrated Drought Information System (NIDIS), NOAA, USA;  
Prof. Yihui Ding, Academician at Chinese Academy of Engineering, China;  
Prof. Song Yang, Sun Yat-Sen University, China; and  
Prof. Renhe Zhang, President of Chinese Academy of Meteorological Sciences, China.

The international symposium successfully enhanced the understanding of extreme weather and climate events and provided an opportunity to the participants to discuss issues and strengthen collaboration related to the theme of the event. The participants expressed a strong desire to form a research network on extreme weather and climate events in order to ensure active international collaboration in this field.

### **IYCr2014 South Asia Summit Meeting on Vistas in Structural Chemistry (28-30 April 2014, Karachi, Pakistan)**

One of the three regional events to mark the International Year of Crystallography 2014 (IYCr2014) organized under the patronage of International Union of Crystallography (IUCr) and UNESCO, the lead custodians for IYCr2014, was IYCr2014 South Asia Summit Meeting on Vistas in Structural Chemistry, held on 28-30 April 2014, Karachi, Pakistan. The Summit was jointly organized by COMSATS and its Centre of Excellence in Pakistan, the International Center for Chemical and Biological Sciences (ICCBS), in collaboration with the Ministry of Science and Technology (MoST), Government of Pakistan; Pakistan Academy of Sciences (PAS); Chinese Academy of Sciences (CAS); and Indian National Science Academy (INSA).

The Summit attracted more than 350 attendees from 20 countries including Bangladesh, Cameroon, China, Egypt, France, India, Germany, Iran, Jordan, Malaysia, Nepal, Pakistan, Saudi Arabia, Sri Lanka, Sweden, Turkey, United Kingdom, United States of America, and Yemen.

The opening Ceremony for the IYCr2014 South Asia Summit was held on 28<sup>th</sup> April at the Salimuzzaman-Siddiqui Auditorium, ICCBS, which was inaugurated by Prof. Dr. Mukhtar Ahmed, Chairman Higher Education Commission (HEC) of Pakistan. In his



inaugural address delivered via video-conferencing, the Dr. Ahmed said that it is important for the developing countries to learn from each other. He pledged his organization's support to provide a platform for conducting regional conferences, workshops and seminars in different areas of interest. Dr. Ahmed urged institutions like ICCBS to strengthen the linkages with their counterparts in the region and undertake collaborative research.



In his remarks on the occasion, Prof. Dr. M. Iqbal Choudhary, Director ICCBS, lauded the efforts of Prof. Dr. Atta-ur-Rahman, President Pakistan Academy of Sciences, and Prof. Dr. Gautam R. Desiraju, President IUCr, for organizing the event, and gave a brief introduction to the format of the meeting. Dr. Choudhary informed that ICCBS procured its first modern X-ray crystallography equipment in the 1980s and since then many laboratories have emerged in Pakistan with advanced applications in structural chemistry, biology and drug discovery.

Prof. Dr. Samar S. Hasnain, Editor-in-Chief of IUCr Journals, presented an inaugural address, entitled IUCr and Crystallography working across nations. He also recalled the efforts of Late Prof. Saleem-uz-Zaman Siddiqui for establishing the Postgraduate Institute of Chemistry at the University of Karachi, Pakistan.

Prof. Dr. Atta-ur-Rahman was happy to note the participation of Chinese Academy of Sciences (CAS) in the event. He believed that the event would give the participating scientists an excellent opportunity to develop regional collaboration and linkages in the field of Crystallography.

Speaking on the occasion, Dr. I. E. Qureshi, Executive Director COMSATS, showed his satisfaction on the strong participation at the IYCr2014 by the Pakistani, Indian, Chinese and Sri Lankan academies of sciences.

Prof. Desiraju considered the Summit as brilliant example of bringing nations together. If East and West Germany can unite and if China and India can learn to collaborate, why can't Pakistan and India overcome their differences?, rhetorically asked Prof. Desiraju advocating a stronger regional collaboration.





In her message read out Mr. Ahmed Fahmi, Programme specialist, International Basic Sciences UNESCO on the occasion, the Director-General UNESCO, Dr. Irina Bokova, called for stronger partnerships among Asian economies to contribute to the post-2015 development agenda debate.

Prof. Dr. Syed Abid Azher, Dean Faculty of Science, University of Karachi; Mr. Ahmed Fahmi, UNESCO Representative; Ms. Nadira Panjwani, the Founder and Managing Trustee of the Panjwani Charitable Foundation and Trusts; Prof. Dr. M. Qaiser, Vice Chancellor University of Karachi; and Mr. Aziz Latif Jamal, Husein Ebrahim Jamal (HEJ) Foundation, also spoke on the occasion.



The Summit meeting spanned three days, comprising eight technical and 4 panel discussion sessions. The technical sessions had a keynote address at the start, Prof. Romain Murenzi, Executive Director TWAS, gave a keynote entitled Regional Cooperation in Science and technology - TWAS Mission and Program . In addition, special Summit lectures were given by Prof. Dr. Samar Hasnain on IUCr and Crystallography working across nations ; and Prof. Dr. Atta-ur-Rahman on Promotion of Higher Education, Science and Technology and International Cooperation in Pakistan . The technical sessions were dedicated to the subjects of Metal-Organic Framework Compounds (MOF); Crystal Engineering and generic Pharmaceuticals; Chemistry-Biology Interface and Drug Discovery and Designing; Crystallography and Complementary Methods; and IUCr Union and Journals.

During the event, scientists from the region shared their findings with science administrators and industry representatives, and discussed new ways forward to advance crystallography and relevant cutting-edge scientific research. The speakers highlighted the significance of crystallography; explored current advances and frontiers in structural biology; and illustrated how high-throughput approaches in Crystallography in combination with hybrid methods using computational and other biophysical techniques can be used to tackle challenging problems in molecular, cellular and chemical biology. The technical papers presented during the Summit focused on the variety of approaches and methodologies that are available to both structural biologists and biologists for investigation. During the three-day event, the participants of the meeting were also shown around the state-of-the-art laboratories of ICCBS.

The concluding ceremony of the event was presided over by Prof. Dr. Atta-ur-Rahman, while the President IUCr, Prof. Dr. Desiraju, presented a vote of thanks on behalf of the organizers.

The IYCr2014 South Asia Summit Declaration took the form of an appeal letter, from 53 signatories, addressed and handed over to the President of IUCr, Prof. Desiraju, seeking his organization's support for initiating actions to promote regional scientific collaboration. The mechanism suggested in this regard included holding of joint



training workshops and video-based lectures; mobility of researchers; promotion of joint research projects in crystallography; financial support to relevant national bodies and institutions; and facilitation of regional conferences on the subject of X-Ray diffraction and its applications in South Asian and South East Asian regions.

The Summit was also seen as an opportunity for scientists to work beyond political borders as this meeting was specifically planned to bring together the countries divided on the basis of geography, ethnicity, religion and politics.

### **Seminar on Science Communication and Journalism (8 April 2014, Islamabad, Pakistan)**

COMSATS organized a Seminar on Science Communication and Journalism, on April 8, 2014 in Islamabad, Pakistan, in collaboration with ECO-Science Foundation.

The Federal Secretary, Ministry of Information, Broadcasting and National Heritage, Government of Pakistan, Dr. Nazir Saeed presided over the inaugural ceremony of the Seminar, which had participation of over 70 media representatives, scientists, faculty members of media science departments, university students, representatives of web-based forums, and officials of COMSATS Headquarters and ECO Science Foundation.

Speaking at the inauguration, Dr. Saeed urged the Pakistani national media to devote at least five per cent of their media space to project S&T research and advancements to create a culture of science in the country. He opined that national media can play an important role in building scientific culture among the masses by sensitizing them about the scientific and technological advancements and their impact on the life of a common man. He pledged his Ministry's support to any initiative proposed in this regard.



The Executive Director COMSATS, Dr. I.E. Qureshi, and the President ECOSF, Dr. M. H. Soomro, highlighted the importance of the theme of the event in their addresses during the ceremony. Sharing the scope and modus operandi of his organization for promoting science for sustainable development, Dr. Qureshi informed that COMSATS has been engaged in various activities of fundamental importance to the working scientists, including repair and maintenance of scientific equipment at laboratory facilities of educational and research organizations. The work of scientific institutions, he believed, mostly remains under-reported, which is discouraging for the scientific organizations based in Pakistan. Noting the inadequate coverage of science related activities in the local media, he stressed creating triangular relationship between the scientists, journalists and public for effectively communicating the benefits of science and technology to society.



Dr. Soomro in his remarks considered the seminar an important initiative for starting a campaign in the subject area, which has been overlooked over the years. He called for institutional arrangements involving relevant stakeholders, especially scientific and academic organizations in Pakistan, in order to encourage science journalism in the country. He further noted that there is a silver lining to the situation due to sporadic efforts of some individuals. He urged Dr. Saeed for the Government's support to such initiatives and their follow-ups.

The three technical sessions of the one-day seminar covered the fundamentals of Science Journalism, contemporary issues and the role of various media for science communication. Chief Editor monthly Global Science, Karachi, Pakistan, Mr. Aleem Ahmed; and Editorial Consultant daily Express Tribune, Pakistan, Mr. M. Khalid Rahman, delivered keynote lectures on the basics of science writings and communication. Other presenters of the event included: Freelance Science Journalist, Mr. Ameen Amjad Khan; Lecturer Fatima Jinnah Women University, Pakistan, Mrs. Saadia Ishtiaq Nauman; Editor weekly Technology Times, Pakistan, and CEO TechTV, Mr. Sayyed Paras Ali; Director Institute of Communication and Media Studies, Ziauddin University, Karachi, Pakistan, and Mr. Iqbal Jamil. These presentations explored ways to promoting science through the existing means and knowledge resources; the need for curriculum development for Science Journalism and the electronic media's role in the advocacy of science.

The seminar also included speakers from Italy, and USA via Skype. Speaking from Italy, Mr. Edward W. Lempinen, Public Information Officer at The World Academy of Sciences (TWAS), talked about science policy, diplomacy and education in the developing world, and acknowledged the invaluable contributions of the eminent Pakistani scientist and Nobel Laureate, Dr. Abdus Salam, towards the uplift of science in the developing world. Ms. Joanne Manaster, Faculty Lecturer, University of Illinois at Urbana-Champaign (UIUC), USA, highlighted the multi-faceted role of social media in driving change in modern-day science. Ms. Shireen Gul, Copy-editor of a student newspaper, TechNews of the Illinois Institute of Technology (IIT), USA, made a presentation on Science Journalism for Social Media.

The event concluded with a roundtable discussion on a high note of appreciation from the speakers and the participants. Dr. Anwar Nasim, Secretary General, Pakistan Academy of Sciences (PAS), made a candid analysis of the situation of the Science Journalism in Pakistan and called for a thrust to sensitize media houses to project



science and scientists. Moderated by the Executive Director COMSATS, the discussions made by the speakers and participants called for:

- Unrelenting follow-ups on the recommendations of the seminar;
- Necessary training for scientists to write in terms comprehensible by the public at large;
- Greater involvement of academia at all levels in developing a scientific culture through journalism; and
- Collaboration among scientists and journalists to furnish write-ups with authentic and accurate yet simplified and relatable scientific information for the masses.

The speakers and participants called for a persistent follow-up on the recommendations of the seminar. An important pledge made during the discussion related to the formulation of a Science Journalist Association of Pakistan (SJAP), the participants pledged to immediately initiate work to make such an institutional arrangement possible, and COMSATS agreed to provide patronage to the online presence of such a forum, directed towards building capacities of science writers, reporters and journalists.

Subsequent to this meeting, consultations with relevant people were also held in order to expedite the mobilization of SJAP.



### **International Scientific Spring 2014 (10-14 March 2014, Islamabad, Pakistan)**

On March 10-14, 2014, the 6<sup>th</sup> International Scientific Spring 2014 (ISS-2014) was held at the National Centre for Physics (NCP), Islamabad, Pakistan. Started in 2009, the event has become a regular annual scientific activity of NCP, which was joined by Abdus Salam International Centre for Theoretical Physics (AS-ICTP) in 2012 for organizing this event. COMSATS was also one of the sponsors of the event, in addition to Elettra Sincrotrone Trieste (S.C.p.A.), Trieste, Italy; and Pakistan Academy of Sciences (PAS), Islamabad, Pakistan.



The ISS-2014 served as an effective forum for discussions between foreign experts and Pakistani participants on their on-going research activities in Physics and allied disciplines. Twenty five (25) foreign delegates from Algeria, Bangladesh, Czech Republic, China, Indonesia, Iraq, Italy, Japan, Jordan, Malaysia, Philippines, Saudi Arabia, Sweden, Turkey, Russia and United States, and over 350 local scientists, researchers and faculty members from various Pakistani universities and research organizations attended the event. Over 150 lectures and poster were presented by foreign and local speakers during the five day scientific activities of the ISS-2014.

The event focused on some core areas of basic and applied physics. The plenary & parallel sessions of the event covered the following four domains: Applications of Synchrotron Radiation; New Materials for Energy Applications (Nano-materials for energy applications); Plasma Physics; and Earth Systems.

The five-day event was inaugurated by Dr. Ishfaq Ahmad, Chairman, Board of Governors of NCP. The ISS-2014 Coordinator, Dr. Riffat Mahmood Qureshi, Director Collaborations and Academic Activities Department (CAAD), NCP, briefed the audience about the goals and objectives of ISS-2014 and shared that it is the third time that International Scientific Spring (ISS) is being jointly organized by NCP and AS-ICTP. He noted that the main purpose of holding the ISS is to inspire young students and researchers to do quality research with enthusiasm, and present the outcome of their scholarly work among veteran scientists and experts. He also appreciated the all-out support provided by COMSATS and PAS.

Speaking at the occasion, the Director-General NCP, Dr. Hamid Saleem, noted that the NCP-ICTP collaboration will further strengthen in the years to come and will prove to be very fruitful for the development of science and technology in the region. The ICTP representative and the Co-Director ISS-2014, Dr. Joseph Niemela appreciated the remarks of Dr. Saleem and said, ICTP would always support NCP in organizing scientific activities with an aim to promoting scientific culture in Pakistan .





Dr. Mukhtar Ahmad, Executive Director, Higher Education Commission (HEC) of Pakistan presided over the concluding ceremony of the event. Dr. Giorgio Pollucci, Coordinator of International Relations and User Programmes and Scientific Director SESAME, distributed the Awards and Certificates for the Best Oral Presentation and the Best Poster Presentation in four thematic areas of the ISS.

### **International Seminar/Workshop cum Exhibition on Sustainable Utilization of Natural Products for Human Health and Well Being (20-23 January 2014, Tehran, Iran)**

In order to address some of the current challenges in development of natural products, herbs and traditional medicines, the Iranian Research Organization for Science and Technology (IROST), Iran, in collaboration with COMSATS and ICCBS, organized the International Seminar/Workshop cum Exhibition on Sustainable Utilization of Natural Products for Human Health and Well Being on January 20-23, 2014, at IROST Complex, Tehran, Iran. The workshop was attended by more than 70 students and researchers from various institutions and industries of Iran. Prof. Dr. M. Iqbal Choudhary, Director International Center for Chemical and Biological Sciences (ICCBS); Dr. Farzana Shaheen, Associate Professor, ICCBS; Dr. Atia-tul Wahab, Assistant Professor, ICCBS; and Prof. Ibrahim Jantan, Universiti Kebangsaan Malaysia (UKM), Malaysia, were the resource persons of the event.

The inaugural session of the event was held on January 20, 2014. The Director ICCBS, read out the message of Executive Director COMSATS, Dr. I.E. Qureshi, as well as delivered a keynote address on the occasion. The ceremony also included opening remarks by Dr. Bahraini, Head of Chemical Industries Department, Iran, and a Speech by Dr. Ahmad Akbari, Deputy Minister and President IROST, Iran.

The event covered various topics related to its theme, including ethnobotany, natural product chemistry, pharmacology, bioassay techniques used in drug discovery, clinical trials, and commercialization of research.

During the event, a Memorandum of Understanding was also signed between IROST and ICCBS for future cooperation in the fields of mutual interest.

### **International Conference on Asian Monsoon and Climate Change (20-21 January 2014, Islamabad, Pakistan)**

COMSATS sponsored a two-day International Conference on Asian Monsoon and Climate Change, organized by the Centre for Climate Research and Development (CCRD) of the Department of Meteorology at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan. The event held on January 20-21, 2014, was organized in association with the Potsdam Institute for Climate Impact Research (PIK), Germany; and the International Center for Climate and Environment Sciences (ICCES), China. Higher Education







Commission (HEC) of Pakistan was also one of the sponsors of the event. The conference was the first international event held under the CCRD umbrella that had participation of a large number of scientists, researchers and scholars from both developed and developing countries, including Bangladesh, China, Germany, India, Iran, Italy, Malaysia, Nepal, Pakistan, Sweden, Russia, and USA.

The conference was inaugurated by H.E. Mr. Zahid Hamid, the then Federal Minister for Science and Technology (MoST), Government of Pakistan, who highlighted the importance of the theme of the conference to the participants from Asian countries. He remarked on the developing world's vulnerability to the environmental, social and economic implications of climate change, despite their mere contribution of about 10 per cent of the annual global carbon dioxide emissions.

Speaking on the occasion, the Executive Director COMSATS noted that the Fifth Assessment Report of Intergovernmental Panel on Climate Change (IPCC) attributes global warming to anthropogenic activities and called for treating climate change as a global agenda with common but differentiated responsibilities. He suggested bringing equity in the roles of both developed and developing countries and urged for respecting the aspirations of the developing countries in future international agreements on climate change. The Director ICCES, China, Prof. Zhaohui Lin, highlighted ICCES long standing cooperation with international organizations, such as COMSATS and TWAS. The Head of International Cooperation, PIK-Germany, Prof. Dr. Jürgen P. Kropp, noted that climate change is a constant phenomenon that influences human lives, especially in terms of water and food security, agriculture yield and energy production. Dr. Kropp called for spreading greater awareness on the same among the stakeholders in order for them to take informed decisions, and suggested about CCRD-CIIT should streamline its programmes accordingly. Also speaking on the occasion, the Rector CIIT, Dr. S. M. Junaid Zaidi, informed the august gathering about CIIT's improved standing among Pakistani universities with 557 publications during 2013, indicating the bulk of research output of the Institute.

Around 30 talks were delivered during the seven technical sessions of the event. Thirty-two posters were presented by the participants on research topics related to climate change and its implications.

The first technical session of the conference was chaired by Dr. Chandima Gomes from Universiti Putra Malaysia (UPM), Malaysia, and comprised keynote addresses on topics: Nonlinearity of the 20<sup>th</sup> Century Asian Monsoon by Dr. Abdel Hannachi from the Department of Meteorology, Stockholm University, Sweden; On Gradual and Extreme Changes of Monsoon Rainfall by Dr. Anders Levermann from PIK,



Germany; The Influence of the Tropical Atlantic on the South Asian Monsoon and Indian Ocean by Dr. Fred Kucharski from ICTP, Italy; Impact of Pre-industrial to Present-day Changes in Urbanization and Pollutant Emissions on the East Asian Summer Monsoon by Dr. Jie Song from Northern Illinois University, USA; as well as, Seasonal Climate and Hydrological Prediction over East Asian Monsoon Region by Dr. Zhaohui Lin from ICCES, China.

The technical talks in the following six sessions of the conference highlighted the impact of climate change and monsoon variability, inter-alia, on extreme weather events, urban drainage system, food security, biodiversity and water resources. Various factors influencing the anomalous variations in rainfall patterns, their effects and possible predictive models were also deliberated upon. The meeting highlighted the critical influence of erratic monsoon on the climate system of the region and its adverse effects on more than 60 percent of the world's population. It was noted that the need for building climate resilience has become critical, calling for more work on climate vulnerability, adaptation and disaster risk management. The participating scientists resolved to promote linkages to advance research organizations on climate change, as well as develop collaborations among data centers and with CCRD.

At the concluding ceremony, the French Ambassador to Pakistan, H.E. Mr. Philippe Thiébaud, called for scientific and diplomatic interactions on issues related to climate change. He was of the opinion that events such as the present conference aid the international interventions for adaptation, mitigation and estimation of financial implications for global negotiations relating to climate change. In his vote of thanks, Prof. Kropp urged scientists to look at how monsoon and other climatic phenomena affect economy, people and society, and work out relevant solutions for sustainable development. Prof. Kropp lauded the efforts of the CCRD and hoped to see it develop into an important regional player on the subject.

A cross-section of students, scholars, scientists, engineers, policy makers, diplomats, and media-men benefited from the deliberations of the event that helped improve general understanding on the impacts of climate change on monsoon system.



# 4

## ACTIVITIES OF COMSATS INTERNATIONAL THEMATIC RESEARCH GROUPS

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COMSATS International Thematic Research Groups (ITRGs) are clusters of scientific institutions aimed at conducting collaborative research in a particular field of Science and Technology to address specific developmental issues of the Member States. Based on their expertise in the respective fields, selected Centres of Excellence of COMSATS are designated as the Lead Centres of these Groups while the membership is open to all relevant institutions. The member institutions of a Group are expected to complement each other's scientific capacities for a coherent R&D activity, under the guidance of the designated Lead Centre.

## ACTIVITIES OF COMSATS' INTERNATIONAL THEMATIC RESEARCH GROUPS

### COMSATS International Thematic Research Group on Climate Change and Environmental Protection'

#### Third Meeting of COMSATS' ITRG on 'Climate Change and Environmental Protection' (January 22, 2014, Islamabad, Pakistan)

The third meeting of COMSATS International Thematic Research Group (ITRG) on Climate Change and Environmental Protection was held on January 22, 2014, at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, on the sidelines of the International Conference on Asian Monsoon and Climate Change (20-21 January, 2014, Islamabad, Pakistan). The ITRG meeting was held to review the progress of the joint research project being undertaken by its members, entitled Characteristics and Mechanism of the Extreme Climate Events under the Climate Change Background. The Group comprises of scientists and researchers from meteorological departments, scientific and research organizations, and higher





education institutions of various developing countries.

The meeting was attended by the following Group members: Dr. Gorakanage Arosha Chandima Gomes, Associate Professor (Electrical Engineering), Department of Electrical & Electronics Engineering, Universiti Putra Malaysia, Malaysia; Dr. Shahina Tariq, Chairperson, Department of Meteorology, CIIT, Islamabad, Pakistan; Dr. Kalim Ullah, Head, Department of Meteorology, CIIT, Islamabad, Pakistan; Mr. Warnage Ransisi Keerthi Fonseka, Principal

Research Engineer, Industrial Technology Institute (ITI), Sri Lanka; Dr. Dambaru Ballab Kattel, Foreign Professor, Department of Meteorology, CIIT, Islamabad, Pakistan (representing Dr. Rijan Bhakta Kayastha, Assistant Professor, Himalayan Cryosphere, Climate and Disaster Research Centre (HiCCDRC), Kathmandu University, Nepal); Dr. M. Molanejad, Acting President for International Cooperation, Iranian Research Organization for Science & Technology (IROST), Iran; Dr. Abbas Ranjbar, Atmospheric Science and Meteorological Research Center, Iran; Mr. Muhammad Munir Sheikh, Head of Climatology Section, Global Change Impact Studies Centre (GCISC), Pakistan; Mr. Shahbaz Mehmood, Scientific Officer GCISC, Pakistan; Mr. Muhammad Amjad, Scientific Officer, GCISC, Pakistan; Mr. Muhammad Aleem-ul-Hassan Ramay, Senior Meteorologist, National Weather Forecasting Centre, Pakistan Meteorological Department (PMD), Pakistan; Prof. Dr. Iftikhar Ahmed Raja, Foreign Professor, CIIT, Abbottabad, Pakistan; and Prof. Dr. G. M. Tarekul Islam, Institute of Water and Flood Management (IWFM) of Bangladesh University of Engineering and Technology (BUET), Bangladesh.

The Executive Director COMSATS, Dr. Imtinan Elahi Qureshi, in his opening remarks, expressed satisfaction on the progress of the group activity since its launching in November 2010, in Beijing, China. He gave the background of COMSATS eight ITRGs approved during its 13<sup>th</sup> meeting held in Italy (2010). Dr. Qureshi informed the new participants of the meeting about the rationale of these groups, which is to undertake collaborative research for finding solutions to common problems of the developing countries. Explaining the concept and modus operandi of the groups, Dr. Qureshi pointed out that while all Members of the group work on a specific thematic research project, they remain stationed in their respective institutions in different



countries and mainly interact with the group leader through Internet-based communication channels. He highlighted the effectiveness of such groups in facilitating the sharing of technical know-how and pooling of the necessary laboratory resources available with the Group members. Showing satisfaction towards the performance of Climate Change group, he thanked the Group Leader, Prof. Zhaohui Lin, the Director of International Center for Climate and Environment Sciences (ICCES), China, for his commitment to coordinate the research work of group members.

In his welcome address, Prof. Lin expressed gratitude to the Executive Director COMSATS for providing full support to his group and recalled its history of establishment, objectives, and the technical contributions made by the members so far. He noted that climate change has adversely affected almost all countries of the South in the form of flash floods, droughts, rising sea levels and receding glaciers. Prof. Lin hoped for expanding international cooperation through his group on Climate Change under the umbrella of COMSATS, and with cooperation from its partner organizations, such as The World Academy of Sciences (TWAS).

The participants of the meeting presented their progress reports and shared their country-specific meteorological data. Communicating their strengths to contribute to the joint research project of the Group, they also pointed out areas in which they required trainings. In this connection, ICCES-China agreed to hold short-term trainings and international capacity-building events for the eligible group members. Stressing the importance of availability of meteorological data for authentic research findings, it was agreed that after an analysis of the data available with their institutions, the participants may discretionally share it with other group members. Country-specific issues and developments in the field of climate change were also shared by the participants.

It was noted by Dr. Tarekul Islam of Bangladesh and Dr. W.R.K. Fonseka of Sri Lanka that Climate Change has started getting attention in their countries only recently and the linkages formed during the ITRG meeting would facilitate relevant institution building in their countries.

Dr. Chandima Gomes of Malaysia informed that his parent institution in Malaysia plans to establish an atmospheric engineering institute, for which his affiliation with the group is a good learning experience. The Nepalese, Pakistani, and Iranian participants also noted the extreme weather events in their countries observed during the recent years and their plans for contributing to the group activity.

In light of discussions held during the meeting, a consensus emerged among the participants about fostering greater international





cooperation among the countries of the South for meeting common global challenges pertaining to Climate Change. The meeting also finalized an Action Plan, outlining the responsibilities of the Group Leader and Members for the years 2014-2015. The plan entails gathering the relevant meteorological data of collaborating countries with daily/monthly temporal resolution; preliminary analysis of the data; execution of different segments of the joint research project; and submission of periodic progress reports to the Group Leader. The ITRG members also agreed to publish joint research papers in peer-reviewed journals based on their collaborative research findings through participation in the group activity.

The meeting concluded on a note of commitment for cooperation amongst the group members. Agreeing to the timeline and responsibilities chalked out in the Action Plan, the participants pledged to dedicatedly contribute to the joint research project of the Group.

### **COMSATS International Thematic Research Group on Information and Communication Technologies (ICTs)**

#### **Second Meeting of COMSATS' ITRG on 'Information and Communication Technologies' (December 16, 2014, Islamabad, Pakistan)**

The 2<sup>nd</sup> meeting of COMSATS' International Thematic Research Group (ITRG) on 'Information and Communication Technologies (ICTs)' was held on 16<sup>th</sup> December 2014, at the Group's Lead Centre, the COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan. The event was held in conjunction with the International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture' (15-16 December 2014, Islamabad, Pakistan) and captured the attention of some of the event's participants.

Dr. Imtihan Elahi Qureshi, Executive Director COMSATS, formally opened the meeting with his informative and motivational inaugural remarks. The Group Leader, Prof. Dr. Sajjad Mohsin, Dean, Faculty of Information Sciences and Technology (FIST), CIIT, chaired the meeting, which was attended by fifteen participants, representing the following eight organizations: Industrial Research and Consultancy Centre (IRCC), Sudan; Bangladesh Council of Scientific and Industrial Research



(BCSIR), Bangladesh; Iranian Research Organization for Science & Technology (IROST), Iran; Royal Scientific Society (RSS), Jordan; Tanzania Industrial Research and Development Organization (TIRDO), Tanzania; National Research Centre (NRC), Egypt; University Alioune, Senegal; and CIIT, Pakistan. Moreover, Mr. Tajammul Hussain, Advisor (Programmes) and Mr. Farhan Ansari, Sr. Assistant Director (Programmes), represented COMSATS Headquarters as programme coordinators.



Speaking on the occasion, Dr. Qureshi considered the joint research project on 'e-Solutions for Community using Low-Cost Connectivity' extremely important for the developing countries, owing to its focus on addressing some of most fundamental challenges in health, education and agriculture sectors of these countries. The ICT-based solutions delivered through long-distance Wi-Fi networks, he added, can meet the needs of the rural communities in a highly cost-effective manner. He informed that the uniqueness of the COMSATS ITRG Programme lies in its membership of research scientists belonging to various developing countries working at their home institutions, complementing the traditional method of conducting joint research. Touching upon various aspects of the group collaboration, he urged the participants to create knowledge networks and commit themselves to jointly working out cost-effective solutions addressing the common problems of the developing world. Noting how some small start-ups based on personal initiatives have expanded so hugely across the globe, he opined that scientists of the developing countries are capable of jointly achieving much more than individual entrepreneurs. Dr. Qureshi also shed light on the progress made by other operational COMSATS ITRGs. As a success story, he noted that the ITRG on Climate Change and Environmental Protection has been successful in securing the funding of one million Chinese Yuan from the Chinese Ministry of Science and Technology, with support of COMSATS Headquarters. He hoped that the research project being executed by the ITRG on ICTs would help address some of the problems of the developing world populations.



Prof. Mohsin shared the progress made by the Group since its launching in 2011. He particularly noted the progress made in terms of the project-components related to setting up Wi-Fi connectivity and developing e-Health solutions. He informed that the Group has



completed the prototype deployment of Wi-Fi connectivity across the targeted region in Pakistan through stations installed at an aerial distance of 2.2 km. He stated that such cost-effective Wi-Fi connectivity solution can be replicated in the countries of the collaborating institutions. He also expressed his desire to include suitable officials of COMSATS Internet Services (CIS) in this project-component. It was further informed that the e-Health component of the project, which is related to helping the treatment of brain tumor in children through image/psychological therapy using video games has also been completed, and is gaining international recognition. Prof. Mohsin also gave the participants a brief orientation of the ITRG on ICTs, its objectives and research goals to the new members of the Group, and urged them to actively participate in this international activity.

During the discussion session, the participants of the meeting agreed to add a new component to the joint research project relating to image-based scientific and analytical evaluation of water, which had earlier been proposed by Dr. Zafar Iqbal, Principal Research Officer at CIIT. Dr. Iqbal also gave a brief demonstration of this research idea already published in a recognized journal.

Subsequent to detailed deliberations, the group members reached an agreement on distribution of different research tasks among them with regard to the execution of the afore-mentioned project-component, based on their expertise and research experiences. It was agreed that a formal proposal, along with an action plan, timeline, milestones, division of labour, etc., would be finalized by the Group Leader in consultation with the members. The group also considered taking up another project activity in future related to developing Industrial Mobile-Health Service Platform, which was proposed by Dr. Shervin Amiri, Associate Professor, Head of Electrical and Information Institute, IROST, Iran.

While discussing the financial aspects of the research project, Mr. Tajammul Hussain, Advisor (Programmes), COMSATS Headquarters, informed that COMSATS main role with regard to facilitating the group activities pertains to coordination and necessary advocacy as well as provision of travel grants to the group members. He informed that although COMSATS Headquarters financially supports mobility of group members for the purpose of joint research activities, the funding for the





execution of the research project is to be acquired from the respective governments of the collaborating countries and/or international donor agencies. He also encouraged the group members to make efforts to secure funding for their research assignments from their respective organizations and governments. He informed that COMSATS and the Lead Centre will be glad to lobby in favour of such requests of research funding made by the group members to their respective governments or international donor agencies.

It was agreed that the group members will utilize the ICT tools, such as group e-mail, community portal/blog, Viber group, etc., for effective communication among themselves. The group members also pledged to communicate with each other on fortnightly basis, and to submit progress reports to the Group Leader on monthly basis. The understanding reached during the meeting will be later formalized through signing of a Memorandum of Understanding.

The meeting concluded with a resolve to direct the efforts of COMSATS International Thematic Research Group towards benefiting the masses in the developing countries using modern ICTs.

### **COMSATS International Thematic Research Group on Mathematical Modeling**

#### **Foundation Meeting of COMSATS' ITRG on 'Mathematical Modeling' (December 02, 2014, Abuja, Nigeria)**

The Foundation Meeting of COMSATS' International Thematic Research Group (ITRG) on 'Mathematical Modeling' was organized by COMSATS with the support of its Centre of Excellence in Nigeria, the National Mathematical Centre (NMC), which is the designated Lead Centre of the Group. The meeting took place on December 02, 2014, in Abuja, Nigeria, on the sidelines of NMC-COMSATS International Conference on Modeling and Simulation of Climate Change and Environmental Protection (December 1-2, 2014, Abuja, Nigeria).



The primary objective of the meeting was to identify the common challenges and areas of research interest of the participating organizations/countries, and to initiate a joint research project in the field of mathematical modeling. Other key objectives included: delegation of specific research assignments to the group members, and

formulation of a strategy for steering and monitoring research efforts of the Group to achieve the desired results. In addition to COMSATS' representative, the meeting was attended by eight researchers and scholars from NMC, Nigeria; Obafemi Awolowo University, Nigeria; and Federal University of Agriculture, Nigeria; COMSATS Institute of Information Technology (CIIT), Pakistan; Tanzania Industrial Research and Development Organization (TIRDO), Tanzania; and Industrial Technology Institute (ITI), Sri Lanka.

The meeting was inaugurated by Prof. Adewale Roland Tunde Solarin, Director/Chief Executive, NMC, Nigeria. During his inaugural address, Prof. Solarin stated that the ITRG Programme is an innovative and unique initiative of COMSATS, which provides a strong technical base to the organization for the promotion of South-South cooperation in Science and Technology. While expressing pleasure on being the Lead Centre for COMSATS' ITRG on 'Mathematical Modeling', Prof. Solarin assured of his full support towards the activities of the Group, and pledged to organize quarterly meetings of the Nigerian scientists taking part in the project, as well as an annual meeting of all active researchers of the Group. He hoped that the Group will play a key role in meeting the common challenges of the developing countries.



Prof. Solarin also shed light on the technical activities of his Centre, and informed that NMC is repositioning itself as a frontline player in the field of mathematical sciences.

In his message read out on the occasion by Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS Headquarters, the Executive Director COMSATS sent his greetings to the distinguished scientists and researchers, who were participating in the meeting. He also felicitated NMC for jointly organizing and hosting the foundation meeting. The Executive Director noted that the launching of the Group on Mathematical Modeling was a major milestone for COMSATS, which has raised the number of its active ITRGs to four. In view of the theme chosen by the Lead Centre for the joint research project 'Assessing the Effects of Air and Water Pollution using Mathematical Models' the Executive Director remarked that in spite of increasing environmental awareness, air and water pollution levels are still high in many parts of the world, especially in developing countries. He cautioned that the air and water pollution may have trans-border effects, which calls for joint efforts by the developing countries to identify and address related issues. Dr. Qureshi also hoped that the activities of the ITRG on Mathematical Modeling will play a constructive role in lessening the hardships of the developing world relating to environmental pollution.

The technical session of the meeting, chaired by the designated Group Leader, Prof. B. O. Oyelami, NMC-Nigeria, commenced with a presentation by Mr. Ansari on the historical perspective, mandate, structure and technical programmes of COMSATS. He shed light on the background and objectives of COMSATS ITRGs, as well as COMSATS expectations from the Group's foundation meeting. Later, the Group Leader made a detailed presentation on the various components of the joint research



project, relating to assessing the effects of air and water pollution, proposed to be executed by the members.

During the meeting, the participating researchers also made presentations on their current research activities, which made it possible to identify their common areas of expertise and interest. The participants also identified specific segments of the project for which they were willing to contribute having necessary expertise. The presentation of Prof. Xiadong Zeng of International Centre for Climate and Environment Sciences (ICCES), China, who could not participate in the meeting due to unforeseen circumstances, was made by Mr. Olutunji Oladejo of NMC.

The subsequent discussions led to the initiation of a joint research project, entitled 'Mathematical Modeling and Simulation of Air and Water Pollution: Effects and Remedies'. Moreover, specific research assignments related to the project were distributed among the group members, as well as a comprehensive action plan with time-line for the execution of the project during the next three years was finalized. The action plan entailed studying the transportation and distribution of pollutants in air and water; determining effects of air pollution; using models to study factors that contribute to carcinogenic and allergic reactions and those that lead to environmental problems; determining how chemicals in the air cause greenhouse effects and the associated global warming, using models to estimate the effects of combustion of hydrocarbon fuel and greenhouse gases; developing models to predict the distribution of pollutant in water, using quality control models/charts; developing and implementing simulation experiments, including Monte Carlo (MC) Simulation; and jointly publishing a book/monograph on the subject. The participants also agreed to make arrangements to share their organizations' laboratory resources for the project, as well as expressed strong commitment to actively participate in the joint research project under the supervision of the Group Leader.



The distribution of tasks was formalized through a Memorandum of Understanding that was signed by the representatives of five participating organizations belonging to Nigeria, Pakistan, Sri Lanka and Tanzania. It was agreed that the next meeting of COMSATS ITRG on 'Mathematical Modeling' will be hosted by the Lead Centre, NMC, on December 1-2, 2015, in order to discuss the progress made by the Group, as well as to determine the future course of action.

### **COMSATS International Thematic Research Group on Natural Products Sciences**

COMSATS International Thematic Research Group (ITRG) on Natural Products Sciences was formally launched by COMSATS and the Group's Lead Centre, the International Center for Chemical and Biological Sciences (ICCBS), Pakistan, on



November 26, 2010, in Karachi, Pakistan. The group has five collaborating institutions as its members: National Research Centre (Egypt); Industrial Research and Consultancy Centre (Sudan); Tanzania Industrial Research and Development Organization (Tanzania); Royal Scientific Society (Jordan); and Iranian Research Organization for Science and Technology (Iran).

During 2014, the group continued research work related to the execution of joint project, entitled Drug Discovery from Nature for Neglected Diseases .

### **Other Planned International Thematic Research Groups**

The 17<sup>th</sup> Coordinating Council Meeting had further endorsed that the inactive ITRGs should be formally launched by their respective Lead Centres by holding their foundation meetings with support from COMSATS Headquarters. In view of the same, COMSATS Headquarters actively corresponded with the Lead Centres of the ITRGs that had not been formally launched. As a result, the COMSATS ITRG on Mathematical Modeling was successfully launched in Abuja, Nigeria, on 2<sup>nd</sup> December 2014.

The foundation meetings of two more ITRGs on Renewable Energy (led by IROST-Iran) and Agriculture, Food Security and Biotechnology (led by NRC-Egypt) are scheduled to be held during June 2015. As per the standard practice, COMSATS will provide travel grants to selected members of the ITRGs in order to facilitate their participation in the foundation meetings, whereas the local expenses will be borne by the groups respective Lead Centres.

During the 18<sup>th</sup> meeting of COMSATS Coordinating Council, the participating Council members will discuss matters related to launching of the remaining two inactive ITRGs on Materials Science (led by RSS-Jordan) and Construction Materials (led by BRRI-Ghana), as well as review and work out solutions to overcome the difficulties being faced by their Lead Centres in doing so.





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## COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

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COMSATS has been endeavouring to expand its group of national and international working partners, in order to have collaboration in Science and Technology for sustainable socio-economic development of the Members States and launch new programmes and activities with its own Centres of Excellence.

## COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

### Collaboration with ISESCO

Since the signing of a Memorandum of Understanding between COMSATS and the Islamic Educational, Scientific and Cultural Organization (ISESCO) in Islamabad, Pakistan, on 13<sup>th</sup> March 2004, the two organizations have been collaborating for executing joint activities in different fields of Science and Technology. The collaboration between COMSATS and ISESCO of over 10 years resulted in:

- joint organization of 35 capacity-building events in common Member States;
- publication of three books;
- maintenance of Islamic World Science Net (IWSN) Web-portal; and
- support for a joint research project in the field of Mathematical Modeling.

The collaboration has proved to be mutually beneficial for the two organizations and contributed to the socio-economic development of their common Member States.

The cooperation programmes between COMSATS and ISESCO have been developed in consultation with Dr. Faiq Billal, Director (Science) ISESCO, and Mrs. Wafaa el Alami, Head of ISESCO Center for Promotion of Scientific Research (ICPSR), ISESCO. Regular features of the collaboration through ICPSR have been: cooperation on maintenance of the web-portal Islamic World Science Net (IWSN), and organization of a series of workshops on Repair and



Maintenance of Scientific Equipment . The latter has, so far, benefitted over 300 scientists researchers and technicians.

On similar lines, COMSATS and ISESCO signed a Cooperation Agreement on 4<sup>th</sup> June 2014 for the biennium 2014-2015. This programme also includes cooperation and support for joint research projects in common Member States.

As per the agreement, COMSATS and ISESCO jointly organized the following five capacity-building events in Iran, Tanzania, Morocco, Egypt and Pakistan during 2014.



National Training Workshop on Repair and Maintenance of Scientific Equipment in Universities, Research Institutions and Small Scale Industries (28<sup>th</sup> September 2<sup>nd</sup> October 2014, Karaj, Iran);  
4<sup>th</sup> International Workshop on Internet Security: Enhancing Information Exchange Safeguards (19<sup>th</sup>-23<sup>rd</sup> October 2014, Dar-es-Salaam, Tanzania);  
2<sup>nd</sup> Regional Consultative Workshop on National Innovation system and Intellectual Property (African Region) (25<sup>th</sup>-27<sup>th</sup> November 2014, Rabat, Morocco);  
4<sup>th</sup> International Workshop and Conference on Nano-materials and Nano-devices (8<sup>th</sup>-9<sup>th</sup> December 2014, in Cairo, Egypt); and  
International Workshop on Applications of ICTs in Education, Healthcare and Agriculture (15<sup>th</sup>-16<sup>th</sup> December 2014, Islamabad, Pakistan).

Scientists, engineers, technicians and industry professionals from over 25 countries, Iran, Bangladesh, Egypt, Jordan, Morocco, Pakistan, Senegal, Sudan, Tanzania, China, Malaysia, Saudi Arabia, Benin, Burkina Faso, Côte d Ivoire, Gabon, Ghana, Guinea, Niger, Togo, Uganda, United States, Tunisia, Nigeria and Kenya, have benefitted from these events. Accounts of these capacity-building events are given in Section-3 of this Report.

Moreover, a research project entitled Mathematical Modeling and Simulation of Air and Water Pollution: Effects and Remedies , which is being executed by COMSATS International Thematic Research Group (ITRG) on Mathematical Modeling , has been selected for funding by ISESCO and COMSATS. In this regard, a sum of US\$ 10,000/- will be awarded to the Lead Centre of the group, the National Mathematical Centre (NMC), Nigeria, in two equal installments during 2015-16.

COMSATS ITRG on Agriculture, Food Security and Biotechnology is expected to hold its foundation meeting on the sidelines of the International Conference on Agriculture, Food Security and Biotechnology (June 8-9, 2015, Cairo, Egypt). The research project, entitled Biotechnological Approaches to Improve Some Wheat Lines Productivity under Biotic and Abiotic Stresses to be initiated by this group will be considered for funding under COMSATS-ISESCO research grant scheme during 2015.



COMSATS also continued to maintain and update the IWSN web-portal during 2014 (page 136).

As per the aforementioned cooperation agreement, the following six capacity-building events are planned to be jointly organized by COMSATS and ISESCO during 2015.

Sr. #	Activity	Partners	Dates and Venue
1	International Conference on 'Agriculture, Food Security, and Biotechnology'	ISESCO; COMSATS; NRC-Egypt	June 2015 Cairo, Egypt
2	2 <sup>nd</sup> International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture'	ISESCO; COMSATS; INIT; CIIT-Pakistan	October 2015 Rabat, Morocco
3	5 <sup>th</sup> International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards'	ISESCO; COMSATS; CIIT-Pakistan; INIT; SESRIC-Turkey	November 2015 Ankara, Turkey
4	3 <sup>rd</sup> Consultative Regional Workshop on 'National Innovation System and Intellectual Property'	ICPSR (ISESCO); COMSATS; INIT; CIIT-Pakistan	November 2015 Amman, Jordan
5	International Conference on 'Mathematical Modeling'	ISESCO; COMSATS; NMC-Nigeria	December 2015 Abuja, Nigeria
6	8 <sup>th</sup> National Training Workshop on 'Repair and Maintenance of Scientific Equipments in Universities, Research Institutions, and Small Scale Industries'	ICPSR (ISESCO); COMSATS	2015 Muscat, Oman

COMSATS will also maintain and update the IWSN web-portal during 2015, under the advice of Head of the ISESCO Center for Promotion of Scientific Research (ICPSR), Morocco.

### Collaboration with UNESCO

COMSATS relationship with UNESCO dates back to 1994, when the Assistant Director-General UNESCO, Prof. Adnan Badran, attended the first Commission Meeting of COMSATS (4<sup>th</sup>-5<sup>th</sup> October), as an Observer. COMSATS initiated its active collaboration with UNESCO through COMSATS-UNESCO South-South Regional (Asia-Pacific) Technical Cooperation Programme in 2006. So far, UNESCO and COMSATS have jointly organized 7 scientific capacity-building events in their common Member States under the sub-regional project (for the Bienniums 2006-2007 and 2010-2011).

COMSATS relations with UNESCO further strengthened after the Executive Director COMSATS, Dr. I. E. Qureshi, visited UNESCO Headquarters in Paris in May and November 2013. Meetings were held with senior officials of UNESCO on both occasions; while in the latter case Dr. Qureshi had also attended the 37<sup>th</sup> session of



UNESCO General Conference, as a member of Pakistan's delegation. During the meeting, Dr. Qureshi had expressed COMSATS' interest in formally institutionalizing the cooperation with UNESCO. COMSATS and UNESCO have since been coordinating with each other to prepare a Memorandum of Understanding (MoU) to reinforce cooperation between the two intergovernmental organizations. In this connection, on 6<sup>th</sup> January 2014, the Executive Director COMSATS sent a formal proposal to the Director-General UNESCO for concluding a cooperation agreement with COMSATS.

On 6<sup>th</sup> February 2014, the heads of the two organizations had the opportunity to meet in person during the signing ceremony of an agreement to establish UNESCO Chair on Knowledge Systems for Integrated Water Resources Management at COMSATS Institute of Information Technology (CIIT), Wah Campus, Pakistan. The Executive Director COMSATS reiterated his organizations desire to have long-term partnership with UNESCO. The Director-General UNESCO endorsed the Executive Director's views on stronger cooperation between UNESCO and COMSATS for achieving the common objective and assured that COMSATS proposal would be duly considered by UNESCO (Page 104).



Later, the draft MoU between UNESCO and COMSATS was presented to COMSATS Coordinating Council (during its 17<sup>th</sup> meeting held on 19<sup>th</sup>–20<sup>th</sup> May 2014, in Tehran, Iran), and UNESCO Executive Board (at its 195<sup>th</sup> session held on 15<sup>th</sup>–30<sup>th</sup> October 2014, Paris, France) for internal clearance and approval. During their meetings, the Council and the Executive Board authorized the Executive Director COMSATS and Director-General UNESCO, respectively, to sign the Memorandum of Understanding on behalf of their organizations.

In this connection, the Executive Director COMSATS has received an invitation letter from Assistant Director-General for Natural Science (UNESCO) for signing the MoU at Director-General's office, UNESCO Headquarters, on 18<sup>th</sup> March 2015. The Executive Director COMSATS will be visiting UNESCO Headquarters in Paris, from 17<sup>th</sup>–19<sup>th</sup> March 2015, to sign the Memorandum of Understanding, which will serve as a reference for initiating, promoting and coordinating joint activities between the two inter-governmental organizations.

Moreover during 2014, a representative of UNESCO attended the 17<sup>th</sup> meeting of COMSATS Coordinating Council (May 2014). The aim was to strengthen cooperative linkages with UNESCO and to keep the organization informed on any of COMSATS



programmes and activities that may be of interest to its Member States. Dr. Yoslan Nur, Programme Specialist, Division of Science Policy and Capacity-Building, Natural Sciences Sector, UNESCO, represented his organization at the meeting.

### Collaboration with TWAS

A number of key areas of cooperation between COMSATS and TWAS were discussed between the Executive Directors of COMSATS and TWAS during their meeting on April 30, 2014 (Page 100). In due course, an understanding was reached to formalize institutional cooperation in the area of Science Diplomacy, which both organizations were actively seeking to pursue. TWAS is already engaged with American Association for the Advancement of Science (AAAS) for activities pertaining to Science Diplomacy. It was decided that inclusion of COMSATS in the triangular relationship would help build synergy for a new Science Diplomacy programme tailored towards the needs of the South. It was also agreed that COMSATS officials will be invited to TWAS to attend the AAAS-TWAS Summer Course on Science Diplomacy in order to build capacity for a relevant joint programme.

In view of the same, TWAS was approached through formal correspondence seeking partnership on a Science Diplomacy Programme, and a draft Memorandum of Understanding was proposed on September 1, 2014. TWAS is expected to respond with its agreed draft in January 2015. The draft will thereafter be reviewed for approval and signing by COMSATS.

Moreover, COMSATS cooperation with TWAS continues for the joint publication of the series, titled Excellence in Science. The series aims to identify and document the strengths and weaknesses of S&T institutions from the developing world in order to put their scientific capacity to a better use for achieving South-South and North-South cooperation. Profile of COMSATS Centre of Excellence in Pakistan, the International Center for Chemical and Biological Sciences (ICCBS), was published in October 2011, while the edition on COMSATS Centre of Excellence in Colombia, the Centro Internacional de Fisica (CIF), was published in October 2013.



During 2014, consultations were made between the officials of the two organizations for identifying an S&T institution to be profiled and published as the third joint publication under the series.

### **Interaction with the Host Country, Pakistan**

The importance of COMSATS strong working relations with its host country, Pakistan, cannot be over emphasized. COMSATS Secretariat remains in touch with the officials of the Government of Pakistan for coordination and consultation on a number of matters regarding its national and international programmes.

During 2014, some key interactions with the Government of Pakistan were made on the following matters.

#### **Proposal for UNESCO Category-II, Water Research Centre at COMSATS Institute of Information Technology (CIIT), Abbottabad Campus, Abbottabad, Pakistan**

COMSATS Secretariat vigorously pursued with the Ministry of Science and Technology (MoST), Government of Pakistan (GoP), the matter of submission of the proposal of COMSATS Institute of Information Technology, Abbottabad Campus, as the UNESCO s Category-II Water Research Centre, to the permanent delegate of Pakistan to UNESCO. The proposal had been prepared to be submitted under the phase 8 of the UNESCO s International Hydrological Programme (IHP).

The proposal was approved by the General Assembly of UNESCO for further work and feasibility study for the establishment of the Category-II Centre.

#### **Annual Membership Contribution by the Government of Pakistan**

Since its inception in 1994, COMSATS is being generously funded by the Government of Pakistan for the running expenditures of its Secretariat, which is permanently located in Islamabad. However, the case of the country s Annual Membership Contribution (AMC) to COMSATS was institutionally taken up after the announcement by the former Chairperson of COMSATS (former Prime Minister of Pakistan, H.E. Syed Yusuf Raza Gilani) during the 2<sup>nd</sup> Commission Meeting held in April 2012. As a result of a strong follow-up thereafter with the relevant government departments, the first AMC of Pakistan was sanctioned by GoP in March 2014. This contribution has been made a part of the afore-mentioned regular funding being provided by the GoP.

#### **Status of COMSATS Endowment Fund**

Another financial matter having its roots in the 2<sup>nd</sup> Commission Meeting is the creation of COMSATS Endowment Fund. The former Chairperson of COMSATS, had announced the creation of an Endowment Fund worth US\$ 10 Million subject to the agreement of all Member States, which was later reached through adoption of a resolution by the participants of the Meeting representing various Member States. Seed money for the fund amounting to US\$ 1 Million was also announced by the Government of Pakistan. In this regard, to meet the legal requirements under Pakistan s law, the draft rules of COMSATS Endowment Fund were prepared and





submitted to the Ministry of Finance, GoP, that advised COMSATS Secretariat to get these rules vetted from the Ministry of Law, Justice and Human Rights.

Based on the observations of the latter, different legal experts were consulted and opinion was sought to make the rules consistent with the Charitable Endowment Act 1890. In the meantime, the External Finance (EF) Wing of the Ministry of Finance was contacted to seek the necessary budgetary provision. This was not possible as the budget for the financial year 2014-15 had been finalized and adjustment of US\$ 1 Million was not feasible at the time. However, it was assured by the Wing that efforts shall be made to accommodate this amount in the next financial year budget, i.e., 2015-16.

#### **Future Expansions of COMSATS Secretariat**

In view of the expansion of COMSATS programmes and activities necessitating a bigger pool of human resources and departments, a land area of about 600 square yards has been acquired from the Capital Development Authority (CDA), Government of Pakistan, after due consultations and interactions with the government departments.



# 6

## INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS

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The Executive Director and other officials of COMSATS Secretariat undertake international visits with an objective to strengthen and expand the membership of COMSATS and its Network of S&T Centres of Excellence, as well as to participate in international meetings and for developing partnerships and cooperation mechanisms.

## INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS

### Visit to Morocco (24-29 November 2014)

A delegation of COMSATS visited, Rabat, Morocco, in connection with the 2<sup>nd</sup> 3-day Regional Consultative Workshop on National Innovation System and Intellectual Property (NIS/IP), held on November 25-27, 2014, at the Headquarters of the Islamic Educational, Scientific and Cultural Organization (ISESCO). A number of important meetings were held on the sidelines of the event with the senior officials of ISESCO.

#### Meetings at ISESCO Headquarters, Rabat

Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, accompanied by Mr. Abdul Majid Qureshi, Research Scholar COMSATS, held separate meetings with Dr. Faiq Billal, Director (Sciences) ISESCO, and Mrs. Wafaa El Alami, Head of ISESCO Center for Promotion of Scientific Research (ICPSR) at ISESCO Headquarters. A tentative schedule for the upcoming joint activities of COMSATS-ISESCO for 2015 was discussed at length. A general consensus was reached on the timeline for the joint activities.

#### Meeting with the Deputy Director-General ISESCO

The COMSATS' officials also called on Dr. Amina Obaid Al-Hajri, Deputy Director-General ISESCO to discuss future cooperation with ISESCO on November 25, 2014. Dr. Al-Hajri expressed satisfaction over the past and ongoing joint activities with COMSATS. She was particularly appreciative of the Workshops on Repair and Maintenance of Scientific Equipment. Dr. Al-Hajri also assured the officials to play her active role in inviting Oman and Morocco to join COMSATS as its Member States in order to benefit from COMSATS' international programmes and activities.



### Meeting with the Ambassador of Pakistan to Morocco

The COMSATS' officials joined by officials from COMSATS Institute of Information Technology (CIIT), Mr. Tahir Naeem, Director P&D and Mr. Kashif Attiq (Sr. Programme Officer), called on H.E. Mr. Waheed-ul-Hasan, the Ambassador of Pakistan to Morocco, on November 27, 2014. The Ambassador assured of his support for COMSATS' activities in Morocco, and offered facilitation for visa to Moroccan scientists and students willing to visit Pakistan.



### Study Tour to the Moroccan Office of Industrial and Commercial Property (OMPIC), Casablanca

As part of the Regional Consultative Workshop on NIS/IP, representatives along with other participants of the Workshop undertook a study tour of the Moroccan Office of Industrial and Commercial Property (OMPIC) in Casablanca, on November 26, 2014.

The officials at OMPIC warmly received the participants and arranged a briefing about the functioning of the Office, and its services towards promoting an effective intellectual property (IP) regime in Morocco. Participants were also shown around the various sections of OMPIC, including Trademarks, Patent Search and Customer Facilitation Service Centre.



### Visit to Oman (25-30 October 2014)

Based on the understanding reached earlier during the meeting with the Executive Director of The World Academy of Science (TWAS), Prof. Romain Murenzi, the Executive Director COMSATS was invited by the Omani Ministry of Higher Education, to participate in the 25<sup>th</sup> General Meeting of TWAS as Observer. The meeting was held in Muscat, Sultanate of Oman, on 25-28 October 2014.

More than 350 delegates, comprising of TWAS Fellows, representatives of Governments and international organizations, as well as academics of international repute, from across the world participated in four days of high-level scientific presentations and intensive discussions.



A special feature of the meeting was the announcement made by the Executive Director COMSATS about COMSATS' offer of Membership to Oman, with a few words of introduction about COMSATS.



A number of meetings and consultations were held on the sidelines of TWAS General Meeting by the Executive Director COMSATS in connection with various issues.

In a meeting with the Executive Director TWAS, and Prof. Rabia Hussain, TWAS Vice Chairperson for South Asia and Central Asia, options were explored to jointly hold conferences in South Asia and Central Asia under the auspices of TWAS' Regional Office in Delhi, India. Possibility and mechanism of Science Diplomacy cooperation between TWAS and COMSATS also formed key points of discussion. Correspondence and efforts on the same later continued during the year, leading to an understanding on launching COMSATS' Science Diplomacy initiative.

Another meeting was held with Prof. M. H. A. Hassan, the lifetime Honourary Member of COMSATS Coordinating Council (also the former Executive Director of TWAS); and Prof. Glaucius Oliva, Member of COMSATS Technical Advisory Committee (TAC) and President of Brazilian National Council for Scientific and Technological Development (CNPq), Brazil. The possibility of Brazilian Membership of COMSATS was discussed with these officials. Financial support of CNPq was sought for training of scientists at COMSATS' Centre of Excellence in Rio de Janeiro, Brazil, the Embrapa Agrobiologia. Provision of exchange of faculty and students between COMSATS' Member Countries and Brazil, under the latter's national programme, 'Science without Borders', was also discussed.

Prof. Khatijah Yusoff, Member COMSATS Technical Advisory Committee and Dean Faculty of Biotechnology and Biomolecular Sciences, University of Putra Malaysia (UPM), Malaysia, was also present in the TWAS meeting. In a meeting with her, the Executive Director briefed her about the role of TAC members with respect to COMSATS' international activities. She was requested to give feedback on the Minutes of 17<sup>th</sup> Coordinating Council meeting that was shared with her earlier, and invited her for participation in the 18<sup>th</sup> Coordinating Council Meeting to be held in Colombo, Sri Lanka in 2015.



In a meeting with Dr. Rawiya Al Busaidi, Minister of Higher Education, Sultanate of Oman; and Mr. Talal Al Balushi, Director of International Relations, the Research Council of Oman, papers concerning offer of COMSATS' Membership to Oman were presented. Possible cooperation between COMSATS Institute of Information Technology (CIIT) and Sultan Qaboos University in S&T-related disciplines was also discussed.

In another meeting, Prof. Keto Mshigeni, Vice-Chancellor, Hubert Kairuki Memorial University (HKMU), Dar-es-Salaam, and former President Tanzania Academy of Sciences (TAAS), Tanzania, was requested to provide support in effective coordination with Tanzanian scientific infrastructure.

Status of the on-going cooperation between TWAS and COMSATS in connection with the publication of profiles of R&D organizations, under the TWAS programme, 'Excellence in Science', was discussed with Mr. Edward Lempinen, Public Information Officer, TWAS.

Eminent Pakistani scientists attending the 25<sup>th</sup> General Meeting of TWAS, Dr. Amir M. Khan, Dr. Qasim Mehdi, Dr. Anwar Nasim, Dr. Qasim Jan, and Dr. Fayyazuddin, were also invited to write articles for COMSATS' biannual journal, Science Vision

### **Visit to Tanzania (18-25 October 2014)**

During October 18-25, 2014, a delegation of COMSATS headed by Dr. I.E. Qureshi, Executive Director COMSATS visited Tanzania. The delegation members were Mr. Tajammul Hussain, Advisor (Programmes) COMSATS; and Mr. Farhan Ansari, Sr. Assistant Director (Programmes) COMSATS. The purpose of the visit was to represent COMSATS and make necessary organizational and arrangements for the 4<sup>th</sup> International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' (October 19-23, 2014, Dar-es-Salaam, Tanzania) (Page 40); visit COMSATS' Centre of Excellence in Tanzania, the Tanzania Industrial Research and Development Organization (TIRDO); and to hold meetings with the senior officials of the government of Tanzania to solicit the necessary support for COMSATS' international programmes and activities.

### **Meetings at Tanzania Commission for Science and Technology (COSTECH) (21 October 2014)**

A meeting with Dr. Hassan Mshinda, Director-General, Tanzania Commission for Science and Technology (COSTECH), was held in his office on October 21, 2014, to discuss matters related to Tanzania's participation in COMSATS' programmes. Dr. Ludovick C. Manege, Director of Industrial Research, TIRDO, was also present during the meeting. It was noted by the Executive Director COMSATS that although TIRDO has been consistently participating in COMSATS Coordinating Council meetings, it has not been able to make best use of the opportunities offered by COMSATS, primarily due to the lack of adequate financial and technical resources. In view of TIRDO's willingness to participate in the activities of COMSATS' programmes, especially its International Thematic Research Groups (ITRGs), the Executive Director COMSATS urged the Director-General COSTECH to allocate necessary funds to facilitate TIRDO in this regard. He also stressed the need for the Government of Tanzania to resume its Annual Membership Contribution (AMC) to COMSATS in order to reap the benefits of capacity-building events organized by COMSATS.

The Executive Director also thanked COSTECH for hosting the Internet Security Workshop in Dar-es-Salaam. The Director-General COSTECH informed the COMSATS' delegation





regarding the efforts being made by COSTECH for the development of S&T in the country, and assured of his full support in future as well. In light of the discussions held during the meeting, it was agreed that COSTECH will act as COMSATS' Focal Point in Tanzania, and the announcements of COMSATS' activities will be sent to COSTECH for dissemination to the relevant organizations and individuals in Tanzania. It was also agreed that COSTECH will encourage the Tanzanian students to avail the offers of postgraduate scholarships offered by COMSATS Institute of Information Technology (CIIT), Pakistan, and other Centres of Excellence.



### **Meeting at Ministry of Communication, Science and Technology, Government of Tanzania (21 October 2014)**

A meeting was held with Prof. Patrick Makungu, Permanent Secretary, Ministry of Communication, Science and Technology, Government of Tanzania. The Executive Director COMSATS provided Prof. Makungu details regarding the postgraduate scholarships offered by CIIT; capacity-building events organized by COMSATS in collaboration with its partner organizations; as well as activities of COMSATS' ITRGs. For Tanzanian scientists to benefit from all the projects and programmes, Dr. Qureshi invited the Permanent Secretary to make suitable nominations. He thanked the Permanent Secretary for participating in the inaugural session of the Internet Security workshop as the Chief Guest, and shared details of the technical proceedings of the subsequent working sessions.

Dr. Qureshi highlighted the distinctive role that the Government of Tanzania had played in the establishment of COMSATS through the participation of former President of Tanzania, H.E. Mr. Benjamin W. Mkapa, who was then the Minister for Science, Technology and Higher Education, during COMSATS' Foundation Meeting held on 4-5 October 1994, at Islamabad, Pakistan. However, he informed, that Tanzania has not been able to fully avail the benefits offered by COMSATS.

The Permanent Secretary appreciated the efforts being made by COMSATS to facilitate capacity-building and international collaboration of Tanzanian scientists and institutions, and agreed to take actions to ensure that Tanzania makes full use of the opportunities offered by COMSATS. It was agreed that under COMSATS



Distinguished Professorship scheme, a lecture of a suitable expert will be arranged at the Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania.

### **Visit to Tanzania Industrial Research and Development Organization (TIRDO) (21 October 2014)**

The COMSATS' delegation visited TIRDO on October 21, 2014, to gain the first-hand knowledge of technical and human resources, as well as the ongoing activities of TIRDO. To start off, COMSATS' delegation met with the senior officials of TIRDO; Prof. Mkumbukwa M.A. Mtambo, Director-General; Dr. Ludovick C. Manege, Director of Industrial Research; Mr. Robert Nindie, Acting Director of Engineering and Development; and Dr. George S. Oreku, Director of Information Communication and Technology Transfer.

During the meeting, the Director-General TIRDO shed light on the history, organizational structure and financial situation of TIRDO. He informed that TIRDO is making efforts to build its capacity for providing services to the local industries. In this regard, the Director-General appreciated COMSATS' support towards the capacity-building of TIRDO, and noted the participation of three scientists of TIRDO in the Internet Security workshop.

The Executive Director COMSATS highlighted the history, mandate and organizational structure of COMSATS. The Executive Director presented COMSATS' programmes under three broad categories, i.e. Education, Capacity-building, and Scientific Research. He considered it important for TIRDO to avail the postgraduate scholarships offered by COMSATS Institute of Information Technology (CIIT) and other Centres of Excellence of COMSATS. He also sought nominations of suitable scientists from the Director-General TIRDO for participation in the upcoming COMSATS' events. In light of TIRDO's request for COMSATS' support in the area of repair and maintenance of scientific equipment made during the 17<sup>th</sup> Coordinating Council Meeting (19-20 May 2014, Iran), the Executive Director offered to organize a workshop on the subject at TIRDO during 2015. He noted with satisfaction that the nomination of a scientist from TIRDO has been made for participation in COMSATS' International Thematic Research Group on 'Mathematical Modeling' to be launched in December 2014 (Page 64).

The Executive Director also invited the Director-General to visit Pakistan with a view to strengthen its linkages with Pakistani scientific/research organizations and universities, specifically CIIT, and hoped that TIRDO would be represented during all future Coordinating Council Meetings of COMSATS.

Around-table meeting between COMSATS' delegation and scientists and technicians







of TIRDO served as an excellent forum of interaction. Dr. Manege made a general presentation on TIRDO, while the specific activities of its three departments, i.e. (i) ICT and Technology Development Department, (ii) Engineering Development Department, and (iii) Industrial Research Department, were presented by their respective heads. The Executive Director COMSATS also made a presentation on the opportunities offered by COMSATS, with special reference to the needs of TIRDO. He urged TIRDO to benefit from the expert missions of COMSATS, such as COMSATS' Distinguished Professors and Panel of Experts on ST&I Policy. The Executive Director also answered a number of questions related to COMSATS' programmes and activities in its Member States.

COMSATS' delegation visited different laboratories of TIRDO, including Food and Microbiology Laboratory; Environment and Occupational Safety Laboratory; Agro Technology and Industrial Chemistry Laboratory; Computer Laboratory and Server Room, as well as different workshops. During the tour, the delegation was briefed about the working condition at each laboratory and views were exchanged regarding their up-gradation. While noting the lack of adequate equipment in Chemistry Laboratory, the Executive Director announced to donate a Bomb Calorimeter to TIRDO. He also agreed to sponsor an expert to provide training to TIRDO's scientists regarding the operation of the Atomic Absorption Spectrometer. The administrative and scientific staff of TIRDO expressed strong commitment to further explore the benefits offered by COMSATS, and keep close contact with COMSATS Headquarters in future.

### Meeting at Tanzania Academy of Sciences (TAAS)

On October 23, 2014, COMSATS' delegation met with Prof. Esther Mwaikambo, President Tanzania Academy of Sciences (TAAS), and Dr. A. P. Nanyaro, Executive Director TAAS, in the office of President TAAS at Hubert Kairuki Memorial University (HKMU), Dar-es-Salaam. The scientific potential of Tanzanian universities and organizations formed the key point of discussion during the meeting. Prof. Mwaikambo pledged to sensitize the fellows of TAAS regarding the benefits offered by COMSATS, with a view to enhance the participation of Tanzanian scientists and researchers in COMSATS' programmes, in particular,





the scientists of TIRDO. She also agreed to explore the possibility of nominating suitable individuals for availing the postgraduate scholarships offered by COMSATS Institute of Information Technology (CIIT), Pakistan.

### Meeting at the High Commission of Pakistan in Dar-es-Salaam

COMSATS' delegation called on Mr. Muhammad Iqbal, the Chargé d'Affairs, High Commission of Pakistan, in Dar-es-Salaam, on 23<sup>rd</sup> October 2014. Matters that were discussed related to enhancing cooperation between COMSATS and Tanzania, and the facilitation role of the High Commission in this regard. Mr. Iqbal agreed to provide the necessary support for COMSATS' initiatives in Tanzania. It was agreed that all correspondence between COMSATS and Tanzanian institutions will be copied to the High Commission of Pakistan.



### Visit to Turkey (20-24 October 2014)

The International Conference on Bio-pesticides 7 (ICOB7) was held in Antalya, Turkey, from 20<sup>th</sup> to 24<sup>th</sup> October, 2014. Representing COMSATS, Ms. Huma Balouch Senior Assistant Director (Programmes) COMSATS, participated in the event and presented a research paper. The ICOB7 was jointly organized by the University of Queensland, Australia; Ondokuz Mayıs University, Turkey; Suleyman Demirel University, Turkey; and Entomological Society of Turkey.

The theme of ICOB7 was 'Bio-Pesticides: Shaping Human Health and Global Agriculture'. ICOB7 attracted an impressive number of researchers, academics, industry representatives and professionals from government and agriculture sector from all continents, with a total of 300 participants from 28 countries. The event enabled the participants to report and discuss new discoveries; scientific advances and developments; and proper use and application of bio-pesticides in agriculture, food production, forestry and public health.

Ms. Balouch was one of the 75 participants, who made oral presentations on their research work. She reported her results on "Study of *Phenotypic Polymorphism* and Detection of Genotypic Polymorphism in *Menochilus sexmaculatus* (Coleoptera: Insecta) using RAPD PCR". This study involved molecular approaches to identifying cryptic species and polymorphic species within common ladybirds (*Coocinellidae*). Her talk focused on how RAPD PCR technique can be used in analysis of genetic variation of insect population and for identification of cryptic insect species and biotypes. She highlighted that the co-existence of both cryptic and polymorphic species of ladybirds has rendered taxonomy both difficult and error-prone and underscored the need for integrating RAPD-PCR into methods of classical identification of insects.



There were also 60 poster presentations, conference presentations and 15 parallel training sessions.

### **Visit to Iran (18-22 May & 28 September - 02 October 2014)**

COMSATS' senior officials visited Iran from 18 to 22 May 2014 for participation in the 17<sup>th</sup> Meeting of COMSATS Coordinating Council hosted by the Iranian Research Organization for Science and Technology (IROST), Iran (Page 2). Consultations made on the sidelines of the meeting with Deputy Minister for International Cooperation, Ministry of Science, Research and Technology (MSRT), Islamic Republic of Iran, also formed an important part of the visit to the country.

Later from 28<sup>th</sup> September to 2<sup>nd</sup> October 2014, Deputy Director (Systems) COMSATS, Mr. Nisar Ahmad undertook a visit to Iran to provide organizational support for holding International Workshop on Repair and Maintenance of Scientific Equipment (Page 44).

#### **Meeting with the Deputy Minister for International Cooperation, Ministry of Science, Research and Technology (MSRT), Iran**

On May 20, 2014, the Executive Director COMSATS, Dr. I.E. Qureshi, accompanied by Advisor (Programmes) COMSATS, Mr. Tajammul Hussain, met with H.E. Mr. H. Salar Amoli, the Deputy Minister for International Cooperation, Ministry of Science, Research and Technology, Islamic Republic of Iran, at his office in Tehran. Dr. Qureshi informed the honourable Deputy Minister about the significance of the Coordinating Council meeting as a means of exploring scientific cooperation opportunities among COMSATS' Member States. It was informed that the Council members, who are distinguished scientists occupying prestigious positions as Heads of their respective organizations, closely interact with each other during the course of the meeting and share the status of their institutions' research programmes for the mutual benefit of other Networks Member of COMSATS. In this connection, the Advisor (Programmes) COMSATS requested the honorable Deputy Minister to release funds for the award of five scholarships offered to the students of COMSATS' Member States for studies at IROST.



The Deputy Minister acknowledged the impact of COMSATS' international activities aimed at S&T capacity-building through mutual cooperation, and ensured the COMSATS' officials that the Government of Islamic Republic of Iran would continue to provide financial and intellectual support for the commendable mission of COMSATS. He was happy to note that COMSATS' Council meeting was attended by renowned scientists from eleven Centres of Excellence belonging to different developing countries.

A proposal of establishing an International Thematic Research Group (ITRG) on 'Renewable Energy Technologies' was also discussed with the Deputy Minister, who directed the officials of IROST to appoint a senior expert of IROST in the field to act as the Group Leader. He advised to focus on a well-defined research project that could be completed within a reasonable time-frame. The Acting President for International Cooperation, IROST, Dr. Mahmoud Molanejad, assured the Deputy Minister that his instructions will be studiously acted upon. Dr. Molanejad informed the Deputy Minister about the plans of IROST to establish a Human Resource Centre in Advanced Technologies for which COMSATS Headquarters would provide administrative support.

The meeting ended with the exchange of gifts and reiteration of further strengthening COMSATS-IROST collaboration for the best interest of scientific cooperation among the countries of the South.

### **Meetings held on the Sidelines of the National Workshop on Repair and Maintenance**

From September 28 to October 02, 2014, the Deputy Director (Systems) COMSATS, Mr. Nisar Ahmad, visited Iran, in connection with organization of the National Workshop on Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions and Small Scale Industries" (Page 44). During the visit, he held important meetings and discussions with Dr. Koroush Parand, Deputy Minister and President of Technical & Vocational Training Organization (TVTO), Ministry of Labour Cooperative and Social Welfare, Iran; Mr. Ali Tavakoli Golpaygani, Head of Instructors Training Centre (ITC)-TVTO, Iran; Mr. Mehdi Rajabi, Specialist, Science Division, ISESCO Regional Office in Tehran, Iran; Dr. Karamatatollah Rezaei, Head of Department of Food Science, Engineering and Technology, University of Tehran, Karaj, Iran; and Dr. Maryam Jalili of Standard Research Institute (SRI).

During the meetings with Dr. Parand and Mr. Tavakoli, Mr. Ahmad briefed them about COMSATS and its International activities. Dr. Parand showed keen interest in COMSATS' capacity-building programmes and inquired as to how his institution can engage in collaboration with COMSATS. Both Dr. Parand and Mr. Tavakoli expressed satisfaction over the then ongoing National Workshop on Repair and Maintenance.

In a meeting with Mr. Rajabi, COMSATS-ISESCO collaboration programme was discussed. Dr. Rajabi briefly highlighted the activities of ISESCO Regional Office in Tehran.





At the end of proceedings of each day of the workshop, consultative meetings were held to evaluate the progress of the day. The consultations were made by the representatives of the host and sponsoring institutions, including Dr. Jalili, Mr. Tavakoli, Dr. Rezaei, and Mr. Ahmad, in addition to the two resource persons of the workshop from Pakistan. In the meetings with Mr. Ahmad, Dr. Rezaei expressed his department's desire to take part in the COMSATS' activities in the future and establish meaningful collaboration with members of COMSATS' Network of Centres of Excellence.

The host institutions of the workshop also arranged visits to different laboratories at ITC-TVTO and University of Tehran to discuss problems faced by the relevant engineers in maintaining the scientific equipment at the laboratories.

The visit of COMSATS' official to Iran provided an opportunity to establish closer working relations with the scientific community of the country.

### **Visit to Ghana (7-11 June 2014)**

In early June 2014, the Executive Director COMSATS undertook a visit to Ghana, to hold a meeting with the Chairperson of COMSATS, the President of Republic of Ghana, H.E. Mr. John Dramani Mahama.

### **Consultations at the Ministry of Environment, Science, Technology and Innovation (MESTI)**

Prior to the meeting with the President of Ghana, on 8<sup>th</sup> June 2014, Dr. Qureshi had undertaken extensive consultations at the Focal Ministry in Ghana, the Ministry of Environment, Science, Technology and Innovation (MESTI) to review the contents of his multimedia presentation prepared for the Chairperson of COMSATS. The officials met in this regard were: the Minister for Environment, Science, Technology and Innovation, Dr. Joe Oteng-Adjei; the Deputy Minister, Dr. Musheibu Mohammed-Alfa; the Chief Director of MESTI, Dr. Sylvester Anemana; and the Director-General of COMSATS' Centre of Excellence in Ghana, the Council for Scientific and Industrial Research (CSIR), Dr. Abdulai Baba Salifu.

The key points of discussion pertained to the requests and proposals to be made for the Chairperson's consideration. The MESTI officials rendered advice as to how matters should be taken up with the President, the expected outcome and how to proceed thereafter. It was agreed that the Chairperson should be apprised of the financial position of COMSATS by pointing out that Pakistan, being the host country of the organization's Secretariat, is the sole contributor towards meeting the expenses of the Secretariat based in Islamabad, Pakistan.



## Meeting with the Chairperson COMSATS

The meeting with the Chairperson of Ghana was held at his office in the Flagstaff House, Accra, on June 9, 2014. The high-profile meeting was especially important as it was the first interaction with the Chairperson since rotation of the Chair from Pakistan to Ghana in April 2012. Also present during the meeting were the Minister and Deputy Minister, MESTI, as well as the Director-General CSIR. Other senior officials of MESTI present on the occasion were its Chief Director and Director (Science, Technology and Innovation), Dr. Yahuza Mohammed Gomda.

One of the objectives of the meeting was to acquaint the President with the ongoing international activities and capacity-building programmes of COMSATS in its



Member States, and seek the incumbent Chairperson's support. Holding of the 3rd Commission Meeting under the Chairpersonship of Dr. Mahama was also one of the key agenda points. Other important issues discussed with the Chairperson, inter alia, were: scaling-up the role of COMSATS' focal ministry in Ghana to steer COMSATS' activities, and the efforts being made to launch COMSATS Endowment Fund.

In his meeting with Dr. Qureshi, Mr. Mahama recognized the efforts of COMSATS Secretariat in achieving the objectives of COMSATS and assured him of Ghana's significant contributions towards COMSATS' activities aimed at promoting South-South cooperation in Africa and in other parts of the world.



In his presentation to the President, Dr. Qureshi gave a briefing on the history and mission of COMSATS, its composition and the role of its statutory bodies, as well as the organization's programmes and activities for S&T capacity-building through a Network of 19 Centres of Excellence (CoEs). It was noted that COMSATS has successfully organized or sponsored over 200 scientific events and meetings for the benefit of scientific communities of its Member States during the last 18 years. It was informed that these activities were accomplished despite the organization's financial constraints and skeletal human resources at the Secretariat.

Dr. Qureshi made a special reference to the 2nd meeting of COMSATS Consultative Committee, held in 2013, in which it was proposed that the incumbent





Chairperson of COMSATS should send personal letters to all members of the Commission seeking their support for strengthening the technical programmes and financial resources of the organization. The likely content of such a letter was also discussed.



Among other benefits COMSATS membership offers to the developing countries enumerated by the Executive Director included: graduate study scholarships at COMSATS Institute of Information Technology (CIIT), Pakistan; training programmes at selected Centres of Excellence; participation in COMSATS' International Thematic Research Groups (ITRG); lectures delivered by COMSATS' Distinguished Professors; technical consultancy by a Panel of experts on ST&I policy; and exchange visits of scientists for exploring bilateral cooperation avenues between institutes having common research interests.

The advice of the Chairperson was sought on a number of issues relevant to the future activities of COMSATS, which included:

- i) Stronger role of MESTI in steering the activities of COMSATS and taking measures to launch an Endowment Fund for the organization;
- ii) Placement of a representative of the Chairperson at COMSATS' Headquarters in Islamabad, Pakistan;
- iii) Allocation of funds for launching of International Thematic Research Group (ITRG) to be led by the Buildings and Roads Research Institute (BRII) of CSIR, Ghana;
- iv) Various research institutes working under the administration of CSIR to be encouraged to start collaborations with their counterparts in other Member States of COMSATS;
- v) Ghanaian students to be encouraged to make use of graduate scholarships offer of CIIT.





The Chairperson expressed satisfaction over the performance and achievements of COMSATS despite its budgetary limitations. His Excellency agreed to convene the 3<sup>rd</sup> COMSATS Commission Meeting in Accra in 2015. He also agreed to sending letters to his counterparts in Member Countries seeking their political and financial support for COMSATS.

The President also discussed the status of research at BRRRI and gave instructions to the Minister for Environment, Science, Technology, and Innovation for low-cost construction projects to be undertaken in the Institute's supervision.

The Chairperson concluded the meeting by reiterating his personal commitment to the promotion of scientific cooperation among developing countries. He hoped that all the Member Countries would come forward to provide financial assistance to COMSATS.

In a media briefing earlier, the Honourable Chairperson of COMSATS had also lauded the role of COMSATS to help developing countries in incorporating S&T in their development agenda, and in pooling their limited resources for achieving common objectives.

### **Visit to the Council for Scientific and Industrial Research (CSIR)**

Availing the opportunity of his presence in Accra, the Executive Director also visited the Head Office of CSIR, on 10th June 2014. Dr. Qureshi held a detailed meeting with a group of Directors representing CSIR's different Accra-based research institutes. CSIR is a major R&D organization of Ghana with 13 specialized institutes relevant to a wide spectrum of S&T fields (industrial research, water research, soil research, savannah agriculture research, and animal research). The Director-General CSIR, Dr. A. B. Salifu, and Deputy Director-General CSIR, Dr. Rose E. M. Entsua-Mensah, were also present on the occasion. The Executive Director COMSATS specifically invited Dr. Issac O. A. Hodgson, Director Water Research Institute (WRI), to visit Water Research and Technologies Centre (CERTE) in Tunisia, and negotiate a cooperation agreement between the two institutions that have similar mandates. The Director Institute of Industrial Research (IIR), Mr. Herbert A. Obiri, showed interest to continuing close contacts with COMSATS for participation in COMSATS' activities in its Member States, such as the repair and maintenance workshop held in Ghana in 2013.



### **Visit to the Ghana Atomic Energy Commission (GAEC)**

On the invitation from the Director (ST&I) MESTI, Dr. Qureshi also visited the Ghana Atomic Energy Commission (GAEC) and observed the research activities in the

Commission's different laboratories related to peaceful uses of nuclear technology in industrial, agricultural and health sectors. The Executive Director learnt about the gamma irradiation facility of GAEC that is playing an important role in ensuring the quality of a number of edible export items, as well as medical equipment that require high level of sterilization.

### **Meeting with the Deputy Minister and the Director (ST&I), MESTI**

Later, on 10<sup>th</sup> June 2014, Dr. Qureshi held a discussion session with the Deputy Minister MESTI, Dr. Musheibu Mohammed-Alfa, and the Director (ST&I) MESTI, Dr. Yahuza Mohammed Gomda, to discuss the impact of the meeting with the President of Ghana. The participants of the meeting conceded that all the objectives of the meeting with the Honourable President had been met.

Dr. Qureshi's visit to Ghana concluded with an understanding that the Ghanaian Ministry will remain actively in touch with COMSATS Secretariat to coordinate follow-up of the meetings held in Ghana and for other matters of mutual cooperation.

### **Visit to Bangladesh (1-4 April 2014)**

The Executive Director COMSATS, Dr. I.E. Qureshi, visited Bangladesh from 1st to 4th April 2014. In this regard, an invitation, had earlier been received from Prof. Dr. Ahmad Ismail Mustafa, Chairman of Bangladesh Council of Scientific and Industrial Research (BCSIR), which is a Centre of Excellence of COMSATS in Bangladesh in 2011. The purpose of the Executive Director's visit was to meet the scientists of BCSIR and learn first-hand about their working environment.

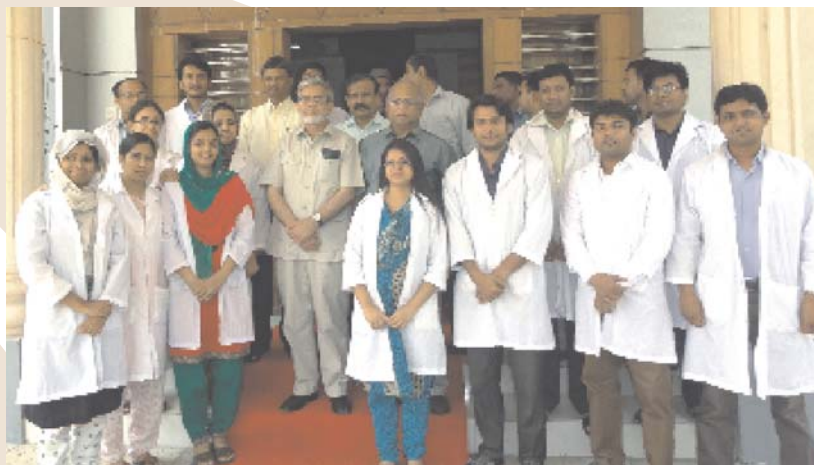
### **Visit and Consultations at BCSIR**

On April 1, 2014, the Executive Director held meeting and consultations with the Chairman, Members and other senior officials of BCSIR, during which the Executive Director answered a number of questions related to the details of COMSATS' operations. A general presentation on BCSIR's structure and programmes encompassing its historical evolution was given by a senior official in order to elaborate the Council's role in meeting the developmental requirements of Bangladesh through R&D in relevant scientific fields. It was informed that BCSIR has twenty thrust areas, which are being pursued at the Council's three full-fledged multi-disciplinary regional laboratories and five mono-disciplinary institutes. These areas include chemical metrology, microbiology, nanotechnology and renewable energy.

On April 2, 2014, Dr. Qureshi made a Powerpoint presentation on COMSATS and its role in providing opportunities of capacity-building and South-South cooperation in S&T at the BCSIR. Later, a tour of selected laboratories was conducted for the visiting Executive Director COMSATS for him to observe the laboratory conditions and exchange views with working scientists and technicians. Some of the most conspicuous aspects observed during this tour had been:



- i) Excellent layout of all laboratories and the availability of latest equipment in fully working conditions;
- ii) Enthusiastic staff comprising of mostly young scientific workers with almost equal gender distribution;
- iii) Appropriate ratio of analytical services provided to industry and commercialization of completed projects, through pilot studies;
- iv) Training of in-service staff and university students; and
- v) Applied research for S&T-based indigenous solutions for meeting the national needs.



Two of the Council's laboratories were visited on April 3, 2014. The Chemical Metrology laboratory has a special significance as a resource centre for other developing countries.

### **Meetings at the Bangladesh Ministry of Science and Technology, Dhaka**

On April 3, 2014, meetings were held with the Additional Secretary, Ministry of Science and Technology (MoST), and the honorable State Minister for Science and Technology, Government of Bangladesh, His Excellency Mr. Yeafesh Osman. The Executive Director briefed the State Minister about some unique features of COMSATS as an intergovernmental organization, such as the mechanism of South-South S&T Cooperation through a Network of Centres of Excellence; hands-on serial training workshops on topics of crucial importance to the developing countries; the establishment of a high-ranking public-sector university; and dissemination of S&T-related information through its various publications.



Dr. Qureshi also informed the State Minister about his personal impressions after visiting Dhaka-based BCSIR laboratories, which in his opinion were so well-organized that in some cases, these were found to be at par with the laboratories in advanced countries. The State Minister was pleased to hear these comments and expressed the resolve of his Ministry to invest in developing strong S&T infrastructure in the country. He informed Dr. Qureshi that the Ministry met the requirements of BCSIR by providing latest high-tech instruments through its own national budget instead of relying on foreign aid.



### **Meeting with the Vice Chancellor of Dhaka University**

The meeting with the Vice Chancellor of Dhaka University was arranged through the courtesy of the Chairman BCSIR. During that meeting, mainly the academic strengths of CIIT were elaborated by the Executive Director in his capacity as the Chairman Board of Governors of CIIT.

At the conclusion of the visit to Bangladesh, Executive Director COMSATS and the Chairman BCSIR along with his senior colleagues reiterated their resolve to utilize the wide scope of benefits available to the scientific community of Bangladesh through the platform of COMSATS, and the desirability of close contacts between COMSATS and BCSIR.

# 7

## OTHER IMPORTANT MEETINGS

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COMSATS officials hold meetings with relevant officials in Member States and other working partners, with a view to ensure a smooth operation of COMSATS projects and programmes, and collaborative activities, as well as to explore more avenues of cooperation. The officials invited or called upon for meetings in this regard include Government officials of Member States, Heads of foreign missions in Islamabad, and representatives from partner organizations.

## OTHER IMPORTANT MEETINGS

### Meeting with the Director-General CERN (December 19, 2014, Islamabad)

On 19-20 December 2014, the Director-General CERN, Prof. Dr. Rolf-Dieter Heuer, visited Islamabad, Pakistan, in connection with the signing of agreement for Pakistan's accession as CERN Associate Member.

Availing the opportunity, the Executive Director COMSATS, Dr. I.E. Qureshi, and senior officials of COMSATS Institute of Information Technology (CIIT), including Rector CIIT, Dr. S.M. Junaid Zaidi, met with the esteemed guest in a local hotel, and





discussed issues of mutual interest. Other distinguished participants of the meeting included Chairman Pakistan Atomic Energy Commission (PAEC), and Chairman Higher Education Commission (HEC) of Pakistan. In his capacity as the member of Joint CERN-SESAME Steering Committee (JCSSC), Dr. Qureshi informed Dr. Heuer about the collaboration between CIIT and ALICE (A Large Ion Collider Experiment) of CERN. He noted that CIIT has established GRID computing facilities for ALICE collaboration, which are projected to be enhanced to reach tier-2 level. A joint team of Physics and Electrical Engineering department is working on Technology Computer Aided Design (TCAD) simulation of Si Pixel detectors to be used in the Inner Tracking System (ITS) of the ALICE particle detectors. Around 20 senior physicists and students are currently involved in Particle Physics related research at CIIT. Dr. Qureshi also highlighted the need to have a broader participation of Pakistani physicists from different universities in CERN programmes. This would require concerted efforts to create human resources in relevant disciplines.

Dr. Heuer emphasized that good science education is the key to producing sufficiently motivated students for taking up higher studies in particle and high energy physics. In this connection, he offered CERN's support for training science teachers. He informed that Science Teachers Training Programme has been going on in CERN for many years and is highly popular in all CERN Member Countries. Dr. Qureshi offered the support of COMSATS Secretariat to conduct the CERN training courses in Pakistan and other COMSATS Member Countries. It was agreed in principle to chalk-out specific plans for undertaking this programme jointly.

Dr. Heuer appreciated the efforts of COMSATS in promoting S&T in its 21 member countries, including Pakistan.

### **Meeting with the Chinese Ambassador to Pakistan (November 19, 2014, Islamabad)**

On November 19, 2014, the Executive Director COMSATS held a meeting with the Ambassador of China to Pakistan, H.E. Mr. Sun Weidong, to brief him about COMSATS wide ranging international programmes and activities, as well as its international mandate, structure, and functions of various statutory bodies. The meeting was held at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, on the occasion of the inauguration of China Study Centre, established at the Institute. Rector CIIT, Dr. S.M. Junaid Zaidi; Advisor (Host Country Affairs) COMSATS Headquarters, Mr. Sabih ur Rahman; Deans and Heads of Departments of COMSATS Institute, as well as officials of the Chinese Embassy, attended the meeting.

Dr. Qureshi informed the Chinese Ambassador that China has representation on



all the organizational bodies of COMSATS: in Consultative Committee through its Ministry of Science and Technology (MoST); in Coordinating Council through a Centre of Excellence, the International Center for Climate and Environment Sciences (ICCES); and in Management Committee through an officer of the Chinese Embassy in Islamabad representing MoST-China. He informed the meeting that Mr. Cai Zhiping, Coordinator, Division of International Organizations and Conferences, Department of International Cooperation, Ministry of Science and Technology, Government of China, is a member of COMSATS Management Committee. It was noted that the Management Committee renders advisory support to the Executive Director for effectively running the administrative and financial affairs of the organization.



Dr. Qureshi expressed deep satisfaction over the active participation of ICCES at the Coordinating Council meetings, held regularly every year. He also appreciated the proactive role of Prof. Dr. Lin Zhaohui, Director ICCES as the Group Leader of COMSATS International Thematic Research Group (ITRG) on 'Climate Change and Environmental Protection'. He explained the modus operandi prescribed for the joint research activities being undertaken by COMSATS various ITRGs, which are in line with organization's future strategy (2012-16).

Highlighting the cordial relations that COMSATS has with China as a Member State, Dr. Qureshi hoped for further strengthening the relations during the tenure of the incumbent Chinese Ambassador. He sought Mr. Weidong's support in ensuring China's continued participation in COMSATS programmes.

His Excellency the Ambassador of China thanked the Executive Director for apprising him on the role COMSATS is playing for the promotion of Science and Technology. He considered Science and Technology to be an important area which can help in achieving national development, especially through international cooperation. Advocating the need for regional networking in science and technology, he said that being affiliated with COMSATS, the Member States must support each other academically, intellectually and financially. He noted that China looks forward to expanding its cooperation with Pakistan in the field of education. Mr. Weidong emphasized the need for stronger regional ties and noted that China has a firm policy to promote South-South cooperation in the region. He further noted that it is also a part of the international policy of China to support the developing countries economically. He pledged his full support in extending cooperation and support to COMSATS future programmes and activities. At the end, Dr. Qureshi presented a set of COMSATS publications to H.E. Mr. Weidong.

After the meeting, the unveiling ceremony of the China Study Centre at CIIT was held and oath taking ceremony of the office bearers of Chinese Universities Alumni Association and China Students Society took place.

## Meeting with the Iranian Ambassador to Pakistan (May 8, 2014, Islamabad)

The Executive Director COMSATS held a meeting with H.E. Mr. Alireza Haghighian, Iranian Ambassador to Pakistan, on 8<sup>th</sup> May 2014, at the Iranian Embassy in Islamabad, Pakistan.

The Ambassador was taken on board regarding the then forthcoming 17<sup>th</sup> Meeting of COMSATS Coordinating Council to be hosted by COMSATS Center of Excellence in Iran, the Iranian Research Organization for Science & Technology (IROST), on 19-20 May 2014 (Page 2). Other matters related to enhancing COMSATS S&T cooperation with IROST were also discussed during the meeting.

The Executive Director highlighted the composition of COMSATS Coordinating Council, which comprises of Heads of renowned R&D institutions in developing countries that are affiliated with COMSATS as its Centres of Excellence. The honourable Ambassador was informed about the then tentative programme and expected deliberations of the Council meeting, and a working paper of the meeting was handed over to the Ambassador.

To better acquaint the Ambassador with COMSATS programmes in Member States,

Dr. Qureshi explained the activities of COMSATS International Thematic Research Groups, which have been established to undertake joint research projects in areas of common interest with participation of researchers from different Member States. The honourable Ambassador was informed about the then three active ITRGs, i.e. Climate Change and Environmental Protection (led by ICCES, China), Natural Products Sciences (led by ICCBS, Pakistan), and Information and Communication Technologies (led by CIIT, Pakistan). It was informed that IROST, Iran, is a



member of ITRGs on Climate Change and Environmental Protection and Natural Products Sciences. Considering that Iran has made huge strides in the field of renewable energy, particularly in the production of Hydrogen from Algae, it was informed, a proposal regarding the establishment of an ITRG on Renewable Energy led by IROST would also be presented during the 17<sup>th</sup> Coordinating Council Meeting.

The honourable Ambassador appreciated COMSATS programmes for facilitating scientific capacity-building and South-South cooperation in S&T. He assured that he will fully support COMSATS programmes involving Iranian S&T organizations.



## Meetings with the Executive Director TWAS (April 30, 2014, Islamabad)

On April 30, 2014, the Executive Director of The World Academy of Sciences (TWAS), Dr. Romain Murenzi, visited COMSATS Headquarters, Islamabad, Pakistan, and discussed avenues of strengthening cooperation between COMSATS and TWAS. Dr. Murenzi's meeting at COMSATS Secretariat was also attended by other senior officials of COMSATS, including Advisor (Programmes), Mr. Tajammul Hussain; Advisor (Host Country Affairs), Mr. Sabih-ur-Rahman; and Deputy Director (Programmes), Mr. Irfan Hayee.



Earlier, Dr. Murenzi had held meetings at the Ministry of Science and Technology, Government of Pakistan; National Centre for Physics (NCP); COMSATS Institute for Information Technology (CIIT); Pakistan Academy of Sciences (PAC); and Higher Education Commission (HEC) of Pakistan in Islamabad. Dr. Murenzi was primarily on his visit to Pakistan to participate in the IYCr2014 South Asia Summit Meeting on Vistas in Structural Chemistry (28-30 April 2014)

organized by the International Center for Chemical and Biological Sciences (ICCBS), Karachi, where he also delivered a lecture entitled, Building Strength in Science: The Role of Education and Regional Cooperation.

Dr. Qureshi introduced his TWAS counterpart to the technical team of COMSATS. Dr. Murenzi was further familiarized with COMSATS with the help of a multimedia presentation to elaborate COMSATS mandate and functions as an Intergovernmental organization (IGO) based in Islamabad. Dr. Qureshi recalled that COMSATS and TWAS have the same founding father, Dr. Abdus Salam, and considered their programmes and activities complementary to each other's in some respects. Dr. Qureshi explained the value COMSATS places in its Network of International S&T Centres of Excellence, which has a spectrum of mono-disciplinary and multi-disciplinary S&T institutions. He also introduced the Coordinating Council of COMSATS comprising the Heads of these Centres, which serves as an effective platform for South-South cooperation, facilitating scientific exchange and collaboration among the participating institutions belonging to different developing countries. Dr. Qureshi also acquainted Dr. Murenzi with functions of other statutory bodies of COMSATS, the Consultative Committee and Technical Advisory Committee, the membership of the latter, he noted, is granted on recommendation of TWAS. Apart from its working relations with TWAS, COMSATS international collaborations with organizations like ISESCO and UNESCO were highlighted.





The performance and growth of COMSATS flagship projects, CIIT and COMSATS Internet Services, was also brought to Dr. Murenzi's notice. He was informed that COMSATS publications are the organization's important means for outreach and information sharing. Among these, a special mention was made of COMSATS-TWAS publication series, *Excellence in Science*, covering the profiles of scientific institutions in the developing world.

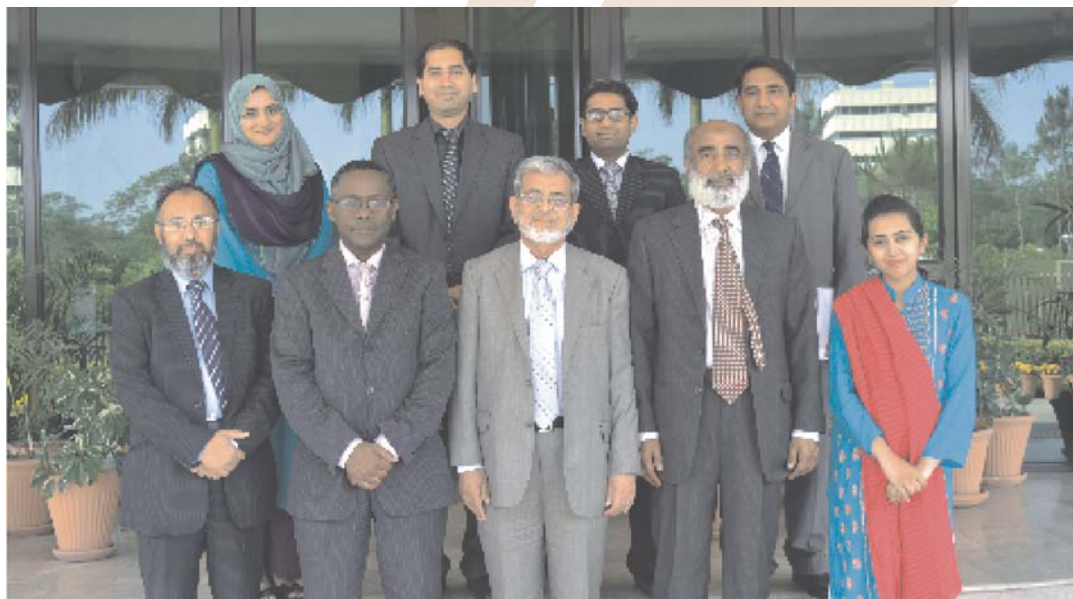
Speaking on the occasion, Dr. Murenzi opined that long-term developmental benefits of science are dependent upon low-cost scientific solutions to improve the living standards in the developing countries. Dr. Murenzi believed that there is a need to reach out to the politicians and government

officials of the developing countries to sensitize them about the importance of science for development. He considered the monetary contributions of the member countries vital for the effective operations of organizations like COMSATS and TWAS.

Sharing his views on science advocacy, Dr. Murenzi considered it an ongoing process, and opined that governments' patronage and commitment is crucial for the success of science-related initiatives. In this regard, he considered COMSATS' role to be very important. He also informed about the recent allocation of US\$ 50,000 by the Swedish International Development Corporation Agency for TWAS Science Diplomacy related activities.

Dr. Murenzi suggested that, as member institutions of an organization working for sustainable development through S&T, all Centres of Excellence of COMSATS should adopt the concept of Sustainability as their hallmark. He considered the growth of the Pakistani scientific institutions such as, CIIT, NCP and ICCBS, an encouraging sign for science in the developing world. He underscored the importance of networking with scientific institutions and organizations across the globe, for which he noted the efforts being made by TWAS.

The two Executive Directors also exchanged views on future prospects of cooperation between their organizations. Dr. Qureshi opined that COMSATS should be invited to TWAS international meetings as observer and COMSATS officials may be invited to participate in the trainings and conferences organized by TWAS. As an





outcome of the understanding reached during the meeting, Dr. Qureshi was invited to attend the 25<sup>th</sup> General Meeting of TWAS that was held later during the year in Muscat, Sultanate of Oman (Page 79).

Other matters of mutual interest discussed on the occasion included cooperation under TWAS Science Diplomacy programme and possibilities of creating COMSATS-TWAS fellowship, as well as TWAS support for COMSATS International Thematic Research Groups.

### **Meeting with the Director-General IAEA (March 12, 2014, Islamabad)**

Leading a delegation of the International Atomic Energy Agency (IAEA), the Agency's Director-General, Mr. Yukiya Amano, visited the Ministry of Science and Technology (MoST), Government of Pakistan, Islamabad, Pakistan, on 12th March 2014, to share information about the role of IAEA in promoting peaceful uses of nuclear technology. The honorable Minister for Science and Technology, H.E. Mr. Zahid Hamid, welcomed the delegation and gave a briefing on the programmes of various R&D organizations, regulatory bodies, and the two universities, including the COMSATS Institute of Information Technology (CIIT), working under the Ministry. This visit was of importance to COMSATS in view of MoST being COMSATS' Focal Point in the host country.

The Executive Director COMSATS also attended the meeting. In connection with the possible support of IAEA towards the Ministry's programmes, he informed Mr. Amano that one of its affiliated institutions, CIIT, offers graduate-level courses in nuclear sciences and has a well-equipped Radiation Physics laboratory. He was further apprised that CIIT is also interested in setting up facilities of radiation sterilization using electron-beam technique. Dr. Qureshi remarked that technical support of IAEA for the R&D programmes of CIIT would be highly appreciated.

Mr. Amano informed the participants of the meeting that the major activities of IAEA were focused on the use of nuclear technology for agriculture, health and power production. A Programme of Action for Cancer Therapy is being executed by the Department of Technical Cooperation of IAEA, it was noted. Similarly, in partnership with UN Food and Agriculture Organization (FAO), the IAEA has established a Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, which provides support in areas of pest control; plant breeding; soil and water management; food quality standards and preservation; and livestock health and production. He remarked that IAEA is in the news mostly in connection with proliferation issues; however, its major segment of activities, which are less known, is for peaceful use of nuclear technology. Mr. Amano expected that there would be about 17 % increase in nuclear power production worldwide by 2030. He informed that, 437 nuclear power plants were in operation and 72 under construction, mainly in Asia. He believed that a safeguarded use of nuclear power would be a contribution towards the mitigation of climate change impact. The safety standards of nuclear industry, he added, were much higher than other industries, and were being further enhanced after the experience gained in Fukushima Daiichi episode three years ago. While regarding nuclear energy as a safe option, irrespective of the negative perception of nuclear energy and ionizing radiations, he conceded that the long-time nuclear waste disposal requires more attention.



In connection with the role of universities in support of IAEA activities, the Dean, Faculty of Sciences CIIT, Dr. Arshad Saleem Bhatti, offered to provide IAEA prescribed radiation protection courses at CIIT, in collaboration with the Pakistan Nuclear Regulatory Authority (PNRA) and the Pakistan Institute of Engineering and Applied Sciences (PIEAS). A number of other proposals by the Heads of R&D organizations were also presented on this occasion. It was decided that a list of projects requiring IAEA support will be submitted to the focal point of IAEA in Pakistan, for evaluation and submission to the Agency.

### **Meeting with the Director ICCBS-Pakistan (February 19, 2014, Islamabad)**

On 19<sup>th</sup> February 2014, COMSATS and its Centre of Excellence in Karachi, Pakistan, the International Center for Chemical and Biological Sciences (ICCBS), reached an agreement that entailed cooperation on co-organizing the Summit Meeting on "Vistas in Structural Chemistry" in connection with the UNESCO's International Year of Crystallography (Page 47). The Executive Director COMSATS, Dr. I. E. Qureshi, and the Director ICCBS, Prof. Dr. M. Iqbal Choudhary signed the agreement on behalf of their organizations during a brief ceremony held at COMSATS Headquarters, Islamabad. The ceremony was witnessed by other officials of COMSATS Headquarters, including Advisor Programmes, Mr. Tajammul Hussain. The signing was followed by an interactive meeting between Dr. Choudhary and COMSATS officials.



Speaking on the occasion, Dr. Choudhary gave a brief history of the discovery of X-rays and application of X-ray Crystallography in modern sciences, such as material sciences, metallurgy, chemistry, and biology. He considered the holding of the Regional Summit an important step towards popularizing Crystallography as an important field of science with a potential to solving many mysteries in various fields of Science. He believed this workshop would be important in developing interest of young scientists in the field.

Dr. Choudhary expressed his delight over ICCBS collaboration with COMSATS for the event and lauded the timely efforts being made by the Headquarters. In his capacity as the leader of COMSATS International Thematic Research Group on Natural Products Sciences, he informed that collaborative work on the joint research project on Drug Discovery from Nature for Neglected Diseases was in progress and samples were being collected. He noted with satisfaction the regular meetings of the Group held in Pakistan, Iran, and Turkey. Dr. Choudhary also sought the support of COMSATS Headquarters in helping ICCBS acquire the status of a UNESCO Category II Research Centre, for which the process has already been initiated.

The Executive Director thanked Dr. Choudhary for visiting COMSATS Headquarters and recalled the latter's designation as COMSATS Distinguished Professor a



scheme under which he would be able to deliver lectures on request, in any of the Member Countries. He noted that facilitation to all its Network members is one of the most important responsibilities of the organization. The idea behind affiliating the institutions from the developing world as Centres of Excellence of COMSATS, he added, was to enhance their international statures, for which COMSATS has made significant contributions. He also highlighted that COMSATS-TWAS publication of profiles of Centres of Excellence under the series Excellence in Science, has played an important role in promoting these Centres. Dr. Qureshi also believed that research breakthroughs to be made by these Centres through the International Thematic Research Groups are going to be lasting contributions to S&T-led development.

### **Meeting with the Director-General UNESCO (February 6, 2014, Islamabad)**

On February 6, 2014, the Director-General UNESCO, Mrs. Irina Bokova, during her visit to the Ministry of Science and Technology, Islamabad, Pakistan, signed an agreement to establish UNESCO Chair on Knowledge Systems for Integrated Water Resources Management at COMSATS Institute of Information Technology (CIIT) Wah Campus, Wah, Pakistan. Executive Director COMSATS, Dr. I. E. Qureshi was among the distinguished guests witnessing the signing ceremony.

The ceremony was presided over by the honourable Minister for Science and Technology, Government of Pakistan, H.E. Mr. Zahid Hamid. Mrs. Bokova, and the Rector CIIT, Dr. S.M. Junaid Zaidi, signed the agreement on behalf of their organizations. The State Minister for Education, Trainings and Standards in Higher Education, Mr. M. Baligh-ur-Rehman; Federal Secretary Ministry of Science and Technology, Mr. Kamran Ali Qureshi; Resident Director UNESCO to Pakistan, Dr. Kozue Kay Nagata; Secretary-General Pakistan National Commission for UNESCO, Ms. Amna Imran Khan; as well as other high officials of the Ministry and affiliated departments; UNESCO; COMSATS Secretariat; and CIIT, also witnessed the ceremony.

In his brief remarks on the occasion, the Executive Director COMSATS expressed his organization's desire to have long-term partnership with UNESCO based on synergy and complementarity. While introducing COMSATS as a high level international forum, he noted that COMSATS advocates S&T related South-South Cooperation as



means for achieving socio-economic development. Dr. Qureshi recalled his visit to UNESCO Headquarters, Paris (November 2013), in connection with the 37<sup>th</sup> Session of General Conference, and meeting with the UNESCO Assistant Director-General for Natural Sciences, Prof. Gretchen Kalonji. It was informed that Prof. Kalonji had endorsed having stronger ties with COMSATS and recognized its important role as an inter-governmental organization. Dr. Qureshi requested Mrs. Bokova to duly consider concluding a cooperation agreement with COMSATS, a draft of which had been submitted earlier to UNESCO.

Earlier during the meeting, the Minister welcomed Mrs. Bokova and briefly highlighted the role of his Ministry in promoting science and technology in the country and introduced its various departments and sections. Acquainting the D.G. UNESCO with the mandate, role and responsibilities of his Ministry, His Excellency viewed the adopted National Science, Technology and Innovation Policy (2012) of Pakistan as a step in the right direction for national development. The Ministry's recent initiatives on enhancing technical cooperative activities were also recounted. Mr. Hamid stated that his Ministry endeavours to enhance all sorts of cooperation and collaboration with UNESCO in every field through its affiliated scientific and academic institutions.



Sharing her views on the occasion, Mrs. Bokova reiterated UNESCO's pledge to work with the Government of Pakistan to elevate the level of knowledge and expertise in the country. UNESCO supports initiatives that aim at S&T advocacy, knowledge-sharing and excellence in higher education, she said and considered the signing of the agreement, which entails the establishment of the UNESCO Chair on Knowledge Systems for Integrated Water Resources Management, at CIIT Wah Campus, as a testimony of the importance UNESCO gives to Science, Technology and Innovation for development.

Acknowledging COMSATS efforts for South-South cooperation for sustainable development, she endorsed the Executive Director COMSATS views on greater cooperation between UNESCO and COMSATS for achieving the common objectives. Mrs. Bokova also pledged support to COMSATS for activities related to science, technology and innovation, which she considered pivotal for the future development frameworks.

After the signing ceremony, the Executive Director COMSATS presented COMSATS shield to the Director-General UNESCO. Two publications, COMSATS-UNESCO Cooperation Programme (2006-2013) and COMSATS-UNESCO Future Cooperation, were also presented to Mrs. Bokova.





Annual Report

2014



## AN OVERVIEW OF MAJOR ACTIVITIES AND ACHIEVEMENTS OF COMSATS CENTRES OF EXCELLENCE

### A. REPORTS RECEIVED

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- COMSATS Institute of Information Technology (CIIT), Pakistan 115
- Industrial Research and Consultancy Centre (IRCC), Sudan 118
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### B. HIGHLIGHTS FROM OTHER CENTRES OF EXCELLENCE

- EMBRAPA Agrobiologia, Brazil 123
- Iranian Research Organization for Science and Technology (IROST), Iran 123
- International Center for Chemical and Biological Sciences (ICCBS), Pakistan 124
- Industrial Technology Institute (ITI), Sri Lanka 125

A group of nineteen R&D institutions from different developing countries is affiliated with COMSATS as its Network of International S&T Centres of Excellence. The Network Members serve as COMSATS technical resource for South-South cooperation, in line with their own mandates for programmes of scientific research and development. This section covers reports received from COMSATS' Centres of Excellence, as well as news of some Centres of Excellence covered in COMSATS Newsletter over the last 12 months.

## AN OVERVIEW OF MAJOR ACTIVITIES AND ACHIEVEMENTS OF COMSATS CENTRES OF EXCELLENCE

COMSATS Centres of Excellence are dynamic R&D organizations engaged in a wide spectrum of scientific activities, according to their national priorities and international commitments. While it would be difficult to encompass all programmes of these Centres in a short report, the following sections give glimpses of some major on-going activities. Section A is based on the activity-reports received on request, from seven Centres of Excellence, BCSIR-Bangladesh, ICCES-China, NMC-Nigeria, CIIT-Pakistan, IRCC-Sudan, TIRDO-Tanzania, and TUBITAK MAM-Turkey. Section B, on the other hand, is a compilation of news entries either received for COMSATS Newsletter or extracted from the respective websites of these Centres over the year 2014. These Centres are EMBRAPA Agrobiologia-Brazil; IROST-Iran; ICCBS-Pakistan; and ITI-Sri Lanka.

### A. REPORTS RECEIVED

#### **Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh**

Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh, is a non-profit multidisciplinary public research organization and a Centre of Excellence of COMSATS since 2011. The main task of BCSIR is to foster scientific cooperation and enhance the culture of R&D in Bangladesh. In 2014, BCSIR accomplished a significant number of tasks, which include: laboratory development; strengthening of its human resource by induction of new scientists; disbursement of fellowships, research grants to the universities and its own research.

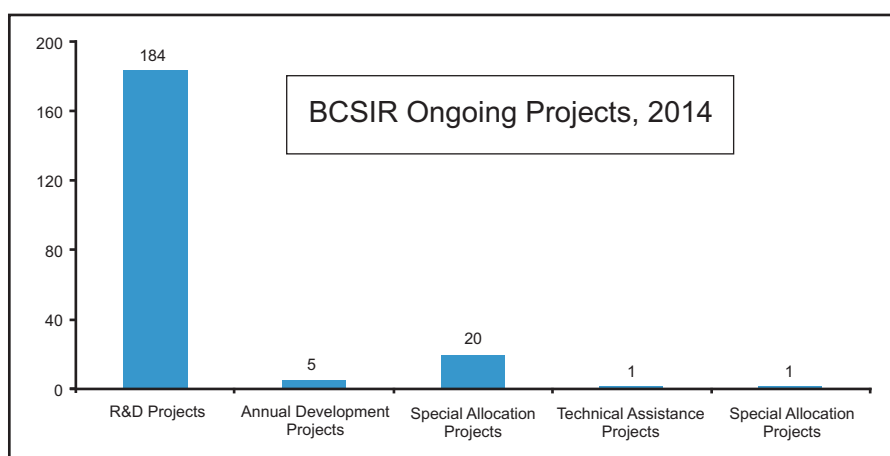


#### **Research and Development**

During 2014, BCSIR carried out research in different areas based on national needs.



Research projects were carried out under different categories: Research & Development of BCSIR; Annual Development Programme of the Government of Bangladesh (GoB); Special Allocation Project from the Ministry of Science and Technology, GoB; Climate Change Trust Fund from the Ministry of Environment and Forest, GoB; and Foreign Funded Projects. The number of projects under various heads is given in the graph below.



## International Collaboration

BCSIR has strengthened its scientific linkages by reaching agreements with the following organizations:

- Council of Scientific and Industrial Research (CSIR), India, for the period of 2014-2017.
- Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia.

Further cooperative terms were strengthened with Indian institutions, when Dr. Arabinda Mitra and Dr. Amitab Bandhapaya, India, visited Bangladesh in August 2014, and held discussions with BCSIR officials for possible collaboration with the Council.

The Chairman BCSIR, Prof. Dr. Ahmad Ismail Mustafa, had extended an invitation to the Executive Director COMSATS to pay a visit to BCSIR. In response to the same, Dr. Qureshi visited the Council in early April 2014 (Page 92).

## Capacity-building Events

The Pilot Plant Process Development Centre of BCSIR conducted a six-week Training Programme on Testing of Metal, Ceramic and Plastic Samples, from 23<sup>rd</sup> March to 1<sup>st</sup> May 2014.

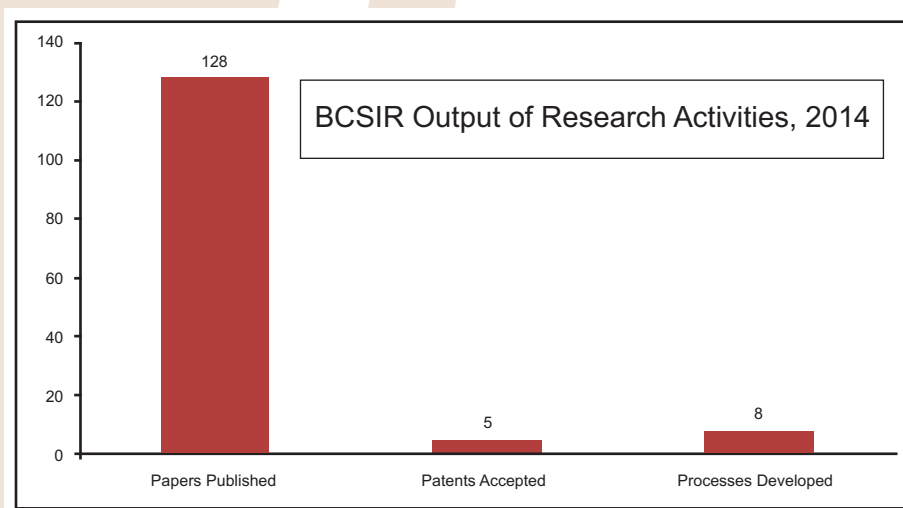
As a regular activity, BCSIR organized seminars in order to meet the technical needs of its R&D projects, providing training to 246 professionals on different scientific equipment, during the year 2014.

- From September 3-10, 2014, BCSIR in collaboration with Network of Instrument Technical Personnel and User Scientists of Bangladesh (NITUB), organized a week-long 54<sup>th</sup> training programme on Application, Maintenance and Trouble-shooting of Atomic Absorption Spectrophotometer (AAS) .
- The Council organized two training workshops on 21<sup>st</sup>-22<sup>nd</sup> January and 18<sup>th</sup>-20<sup>th</sup> February 2014 on Sophisticated Scientific Instruments .



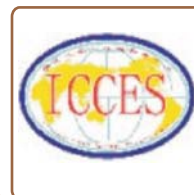
### Academic Activity

During the year, scientists at BCSIR supervised 120 theses of M.Sc. students from various universities.



### International Center of Climate and Environment Sciences (ICCES), China

The International Center for Climate and Environment Sciences (ICCES) originated from the former Center for Climate and Environmental Prediction Research (CCEPRE), which was established in 1991 in order to meet the urgent need for studying climate and environment related problems. Since its establishment, ICCES has been supported by the Institute of Atmospheric Physics (IAP), Chinese Academy of Science (CAS), and by the Ministry of Science and Technology (MoST) of China. ICCES has been a Centre of Excellence of COMSATS since 1994.



## Key Statistics of ICCES

The Center awarded 6 Ph.D and 2 Master degrees in 2014. There were a total of 36 postgraduate students studying at ICCES, including 5 joint training postgraduates, and 2 international Ph.D students supported by CAS-TWAS President's Fellowship.

Key Research and Academic Staff (2014)	
Professors	14
Associate Professors	11
Assistant Professors	17
Senior Engineers	2

## Research Projects

In 2014, there were 44 ongoing projects undertaken by ICCES. A summary of the same is given in the following table.

Funding Agency	No. of Projects
MoST-China and Ministry of Finance (MoF), Govt. of China	17
National Natural Science Funds of China (NSFC)	19
Chinese Academy of Sciences (CAS)	4
MoST and Thailand Research Fund (TRF)	2

Through successful implementation of the ongoing projects, ICCES scientists published 48 peer-reviewed scientific papers in leading national and international journals, among which 22 were SCI/EI indexed journals.

## Research Activities

ICCES continued to make tremendous progress in academia and research, especially in its major research areas, i.e., development and application of Dynamic Earth System Model; meteorological and environmental forecast and related disaster assessment theory and technique; data assimilation theory and methodology; and earth system theory and natural cybernetics.



ICCES has successfully integrated various components of the first version of CAS Earth System Model (CAS-ESM) under a unified framework. Simulations of different coupling between the sub-system models, e.g., the General Circulation Model (IAP-AGCM), Land Surface Model (CoLM), Dynamic Vegetation Models (IAP-DGVM), Ocean General Circulation Model (LICOM), have been tested.





ICCES has further improved its short-term climate prediction system in 2014. ICCES extended consultancies and made predictions of disastrous weather and climate events. IAP Short-term Climate Prediction System has been transferred to Thailand, which has been directly used in the prediction of floods and droughts in the country, as well as for improving the country's capacity in climate and environment sciences.

### **Awards and Honors**

In February 2014, the CAS academician, Prof. Qingcun Zeng, Professor at ICCES, was elected as the Honorary Member of American Meteorological Society (AMS).

ICCES members won the Best Supercomputing Application Award of CAS. Dr. He Zhang, Dr. Dongling Zhang, and Dr. Jiawen Zhu received the second, sixth and eighth positions, respectively.

### **Capacity-Building Activities**

#### ***International Conferences***

13<sup>th</sup> CAS-TWAS-WMO Forum International Symposium on Extreme Weather and Climate: Past, Present, Future (September 8-11, 2014) (Page 46);

International Training Workshop on Asian Monsoon Variability and Predictability (July 6-15, 2014);

4<sup>th</sup> XBT Workshop: XBT Science and the Way Forward (November 11-13, 2014).



#### ***International Student Enrollment***

Two awardees of CAS-TWAS President's Fellowship, Mr. Victor Nnamdi Dike from Nigeria, and Mr. Kritanai Torsri from Thailand, started their Ph.D programme at ICCES.

Two candidates, Dr. Worachat Wannawong from Hydro and Agro Information Institute (HAIL), Thailand and Dr. Bushra Khalid from COMSATS Institute of Information Technology (CIIT), Pakistan, won the support of the CAS President's International Fellowship for Postdoctoral Researchers on the recommendation of ICCES.

## Visiting Scholar Programme

In 2014, ICCES invited more than 10 visiting scholars from institutes and universities of different countries, including leading scientists, senior researchers, Ph.D students and post-doc fellows from Nepal, the United States, and Italy.

## International Cooperation

The International S&T Cooperation Programme of China, entitled Characteristics and Mechanism of Extreme Climate Events under the Climate Change Background, sponsored by MoST, China, is being undertaken by COMSATS ITRG on Climate Change and Environmental Protection, led by Prof. Zhaohui Lin, Director ICCES. The third progress meeting of this project was held on January 22, 2014, at CIIT, Islamabad, on the sidelines of the International Conference on Asian Monsoon and Climate Change, (20-21 January, 2014, Islamabad).

The progress meeting for the Thailand-China Cooperative Research Project on the Development of Seasonal Climate Forecast System in Thailand using IAP-DCP Model, was held on October 19, 2014, at ICCES. This project is sponsored by Thailand Research Fund (TRF).

Prof. Zhaohui Lin, Director of ICCES visited three S&T institutions in Iran: Iranian Research Organization for Science and Technology (IROST); Soil Conservation and Watershed Management Research Institute (SCWMRI); and Iran Meteorological Organization, in May 2014. ICCES also signed an MoU with IROST for scientific cooperation.

ICCES fostered its cooperation with Institute of Meteorology, Hydrology and Environment (IMHE), Mongolia, by signing an MoU for collaborative research and development, and exchange of technical experts and scientists.

ICCES signed an MoU for cooperation with Sudanese institutions like Sudan Meteorological Department and the Institute of Advanced Computing, in a meeting with the latter's Director, Prof. Hussein Sherief.

## National Mathematical Centre (NMC), Nigeria

National Mathematical Centre (NMC), Nigeria, was established in 1989 as an inter-university organization with a mandate to promote research and generate capacity in mathematical sciences. Research and capacity-building activities of NMC revolve around taking appropriate initiatives and developing capacities of international standing for sustaining interest in mathematical sciences at all levels of education and their real-life applications.



## International Collaborations

**Launching of COMSATS' ITRG on Mathematical Modeling:** NMC held the foundation meeting of COMSATS International Thematic Research Group (ITRG) on Mathematical Modeling in Abuja, Nigeria, on December 2, 2014. The event was organized in collaboration with COMSATS (Page 64);

**UNESCO Chair in Mathematics (Algebra):** An agreement was signed for setting-up a UNESCO Chair in Mathematics (Algebra) at NMC, Abuja. An



application in this regard was earlier sent by NMC, and subsequent approval for the establishment of the Chair by UNESCO.

### Scientific Resources

NMC currently has:

- Seven Professors heading academic departments;
- Eleven staff members pursuing Ph.D; and
- Twenty-three staff members pursuing Master degree programmes in various fields of Mathematical Science in universities in and outside Nigeria.

### Capacity-Building Activities

- Two-day NMC-COMSATS International Conference on Mathematical Modeling and Simulation of Climate Change and Environmental Problems (1<sup>st</sup>-2<sup>nd</sup> December 2014);
- Three-month intensive training programme on Mathematical Sciences Graduate Foundation Development and Entrepreneurship ;
- National Workshop on Applied Mathematics (17<sup>th</sup>- 25<sup>th</sup> June 2014);
- Training on Advanced Research Methods, Data Analysis & Software for Postgraduate Students and Academic Professionals (30<sup>th</sup> June 5<sup>th</sup> July, 2014);
- Workshops for Mathematical Sciences Teachers in Federal Government Colleges and Lecturers in Tertiary Institutions on the Teaching of Mathematics, Statistics and Sciences Training the Trainers; and
- Two-week Mental Arithmetic Workshop (19<sup>th</sup> - 31<sup>st</sup> January 2014).

Mathematics Awards (2014)	
International Competition	Awards (Medals)
International Mathematical Olympiad (IMO) in Cape Town, South Africa, July 2014	1 Bronze
	1 Honorable Mention
International Physics Olympiad (IPhO) in Kazakhstan, July 2014	1 Bronze

### International Recognitions

UNESCO appointed Prof. A.R.T. Solarin, the President of African Mathematical Union (AMU) and Director/CEO of NMC, as a member of the Scientific Board of the International Basic Sciences Programme (IBSP) of UNESCO. Prof. A.R.T Solarin, Director/CEO NMC, was inducted into the elite Fellowship of the African Scientific Institute (ASI) an international honorary association of accomplished individuals in the area of Science and Technology.



## COMSATS Institute of Information Technology (CIIT), Pakistan

COMSATS Institute of Information Technology (CIIT) was established in 1998 and was granted the Charter of a degree-awarding institution by the Government of Pakistan in 2000. The Institute has experienced a phenomenal growth over the years.



The Institute has a student body of over 35,000, and a faculty comprising 2,703 members that include 796 Ph.D holders. The university offers enrollment under 96 programmes in 18 departments spread among its seven campuses in Pakistan. With 237 scientific laboratories, the Institute was ranked number 2 among 147 universities of Pakistan in 2013 in terms of Research Productivity by the Higher Education Commission (HEC) of Pakistan. The position was maintained in 2014.

### Major Research Activities and Initiatives

CIIT is dedicated to advancement of learning and extending the frontiers of knowledge. During 2014, a total of 459 research project proposals and 146 travel-grant applications from CIIT were submitted to various funding agencies, out of which 75 project proposals and 63 travel-grant applications were approved.

The CIIT's Office of Research, Innovation and Commercialization (ORIC) also undertook diversification of the Institute's research portfolio by identifying new areas and submitting research proposals to different national and international funding agencies. Besides institutional arrangements for seeking funding, individual researchers especially those recruited under Interim Placement of Faculty Hiring Programme (IPFP) were also motivated to write grant proposals and win research projects. As a result, funding from various sources has gone up from Rs. 150 Million in 2013 to Rs 327 Million in 2014.

In order to bring young faculty to the research mainstream, a CIIT Research Grant Programme (CRGP) is in place to award grants up to Rs. 200,000/- for research proposals of 1-2 year duration. Under this programme, 59 research proposals were approved/ released to the awardees, in 2014. CIIT has also initiated development of a series of business/technology incubators called CUBATORS. Currently, there are 17 companies being hosted at incubation centres of CIIT.

### International Cooperation

CIIT encourages its faculty members and students to undertake international visits to academic and R&D organizations, as well as facilitates scholars, academicians and policy-makers to visit relevant departments of CIIT on a regular basis. During 2014, 138 officials, representatives, faculty-members and students of CIIT went abroad for research and training activities, as well as for





seeking cooperation. On the other hand, 129 renowned researchers, and officials and representatives of other academic and R&D institutions undertook visits to various campuses of CIIT. Among some notable visitors were Prof. Dr. Rolf-Dieter Heuer, Director-General, European Organization for Nuclear Research (CERN); and Dr. Romain Murenzi, Executive Director TWAS. Visits of CIIT officials and delegations to other institutions resulted in enhancing international collaboration of the Institute. To this effect, 7 national and 20 international Memoranda of Agreements (MoA) were signed.

In July 2014, Dr. Arshad S. Malik, Head International Office CIIT, signed a Memorandum of Agreement (MoA) with Dr. Mark L. Biermann, Provost Valparaiso University on 22<sup>nd</sup> July, and an Aide Memoire with Dr. Zsuzsanna Szaniszló, Associate Dean, on July 25, 2014, on behalf of their respective institutions.

The World Academy of Sciences (TWAS) also collaborated with CIIT in 2014. Under this collaboration, five CIIT-TWAS research fellows have been approved for doctoral and postdoctoral research at CIIT in Spring 2015.

In 2014, round of applications for the EMMA-West Programme, 13 mobilities were awarded to the students, faculty members and staff of CIIT for postdoctoral, doctoral, masters and undergraduate studies and/or research, as well as staff training at the University of Heidelberg, Germany (5); University of Nice, France (3); University of Padua, Italy (2); University of Warsaw, Poland (1); and Lucian Blaga University at Sibiu, Romania (2). The breakdown by type of mobility is given in the following table.



Category	Mobility
Postdoctoral	1
Doctoral	5
Master	3
Undergraduate	2
Staff	2
<b>Total</b>	<b>13</b>

### International Students

During 2014, a total of 25 international students from Nigeria, Sudan, Somalia, Jordan, Iran, Mauritius, Turkey, and Afghanistan, were enrolled in Electrical Engineering, Mathematics, Meteorology, Management Sciences, Physics and Bio-sciences departments of CIIT.

International Students Enrolled in Graduate Programmes (2014)		
Sr #	Country	No. of Students
1	Palestine	3
2	Nigeria	14
3	Sudan	3
4	Somalia	1
5	Afghanistan	1
6	Mauritius	1
7	Iran	2
<b>Total</b>		<b>25</b>

## Achievements, Awards and Recognition

### Institutional Awards

Apart from awarding the second place among 147 universities of Pakistan under the Research Productivity category, the Higher Education Commission (HEC) of Pakistan ranked CIIT at number 4 under the Large Universities category.

On February 6, 2014, CIIT reached a milestone agreement with UNESCO, whereby Director-General UNESCO, Mrs. Irina Bokova, and Rector CIIT, Dr. S. M. Junaid Zaidi, signed an agreement for the establishment of UNESCO Chair on Knowledge Systems for Integrated Water Resources Management at CIIT Wah Campus, Pakistan.

CIIT Lahore received Oracle Academy Business Applications Award, on April 28, 2014.

According to the QS Asian University Rankings, CIIT attained a position in 201-250 range. CIIT is the only tertiary-level institute in Pakistan that has won this award.

CIIT was awarded three and five QS stars for its achievements in Civic engagements and facilities, respectively.

CIIT was granted 9001:2008 certification by the International Organization for Standardization in November 2014.

Key Statistics of CIIT (2014)	
Total Student Enrollment	35,452
Campuses	8 (including 1 virtual campus)
Faculty	2,703 including 96 Ph.D
	(24% females 76% male)
Staff	3,001
Departments	18
Academic Programmes	96
Laboratories	237
Number of Publications in I.F Journals	819
Number of Publications as per COPUS	999
Number of Development Projects	8 amounting of Rs. 565 Million
Number of faculty members sent on scholarships abroad for MS & PhD	92

Patents Acquired (2014)			
Title	Author Name	Patent #	Date
Generation of high power pulse-laser using field generated coherence	Fazal Ghafoor	62046584 (Provisional)	05 Sept., 2014
System and Method for Uninterrupted Communication across black spots for Multi Interface Mobile Nodes	S. M. Riaz Hussain, Shahzad A. Malik, and Shahid A. Khan	14/536,650	09 Nov., 2014





## Individual Awards

Dr. S. M. Junaid Zaidi, Rector CIIT, was conferred upon the national award *Hilal-i-Imtiaz* from the President of Pakistan for his services in the field of Education.

Dr. Izhar Hussain, Registrar CIIT, and Dr. Fauzia Yousuf Hafeez, Advisor CIIT, received *Tamgha-e-Imtiaz*.

Another national award, Pride of Performance, was conferred upon Mr. Hasan Shahnawaz Zaidi, Advisor CIIT.

Dr. Taous Khan, Assistant Professor, Department of Pharmacy, Abbottabad, received Best Teacher Award by HEC.

Dr. Sajjad Ahmed Madani, Chairman, Department of Computer Science and Dr. Bilal Zaka, Interim Director, CIIT Virtual Campus, were awarded Teradata National IT Excellence Awards.

Nineteen faculty members of CIIT were honored with Research Productivity Awards for the year 2013-14 by Pakistan Council of Science and Technology (PCST).

Mrs. Aqeela Asif, Assistant Professor, Department of Humanities, CIIT Islamabad, was awarded Gold Medal 2014 by *Idara Frogh-e-Taleem*, Government of Punjab, for services in the field of education.

Dr. Arshad Mehmood Abbasi, Assistant Professor, Department of Environmental Sciences, CIIT Abbottabad, was selected for the Best Paper Award under the programme HEC Outstanding Research Awards in April 2014.

Mr. Ahmed Khateeb, a student from Department of Computer Science, CIIT Islamabad, secured 2<sup>nd</sup> position in Microsoft's Hackathon in 2014 for Windows Store Apps 8.1, held under Punjab Youth Festival 2014, on May 05, 2014.

## Key International Conferences and Forums

FIT-2014: Frontiers of Information Technology (December 17-19, 2014);

Climate Change Summit (September 22, 2014);

SAICON 2014: 6th South Asian International Conference (August 11-13, 2014);

Workshop on Strengthening Research, Education and Advocacy (May 11-15, 2014);

Workshop on Modern Techniques in Structural Chemistry and Structural Biology (April 17-18, 2014);

Pak-China Business Forum 2014 (March 21-24, 2014);

NanoSET-2014: International Conference on Impact of Nanoscience on Energy Technologies (March 18-20, 2014); and

International Conference on Asian Monsoon and Climate Change (January 20-21, 2014) (Page 54).

## Industrial Research and Consultancy Centre (IRCC), Sudan

The Industrial Research and Consultancy Centre (IRCC) is the main research institution of Sudan that focuses on the national industry of the country. IRCC is active in several areas of research, technology and consultancy. These include: Industrial Information, Product Design, Technology and Production Line Design, Quality Assurance, Economic and Feasibility Studies and Industrial Process Modeling.



The activities of IRCC cater to all areas of interest to the Sudanese industry and covers a whole spectrum of its consultancy needs to ensure sustainable development.

Major Research Activities (2014)		
Project	Objective	Progress (%)
Study of the effect of processing and storage on the properties of Sudanese fruits and vegetables	To develop simple processing technique for drying by using solar drier	50
Utilization of antifungal lactic acid bacteria in preventing the spoilage of fruits and vegetables	To use natural materials for preserving fruits and vegetables	75
Extraction of <i>Moringa oleifera</i> oil a natural antioxidant for edible oils	To replace synthetic antioxidant with natural options	100
Production and utilization of soybean flour for manufacturing of cereal products	To develop local food processing techniques	80
Production of magnesium chloride from magnesite	To substitute imported products with local products	60
Production of biodegradable polymers by using starch	To produce environment-friendly plastic materials.	-
Evaluation of antimicrobial properties of some local essential oils against clinical strains of mycobacterium tuberculosis	To use local essential oils for production of drugs	90
Extraction of bioactive substance from <i>Hibiscus sabdariffa</i>	To extract drugs from local plants	25
Anthropometric measurements of Sudanese foot	to determine Sudanese anthropometric properties	20
Improvement of Sudanese National footwear (Markup) design and manufacturing	to develop new technology for footwear	20
Production of sweet syrups from sugar cane	To develop rural capacity in food processing	100
Extraction of gold using techniques other than mercury	To promote the use of clean techniques in gold extraction	20
Competitive ready garment industry	To substitute imports in the textile industry	30
Design of control circuit for oven 1200°C	To save energy	20
Raising the efficiency of sugar boilers using electronic control technology	To raise production efficiency of the sugar industry	20

Researchers Strength at IRCC (2014)	
Associate Professor Researchers	26
Assistant Professor Researchers	16
Researchers	30
Assistant Researchers	3



## Tanzania Industrial Research and Development Organization (TIRDO), Tanzania

TIRDO is a parastatal organization which was established by an Act of Tanzania's Parliament in 1979. The Organization undertakes demand-driven, high quality and environment-friendly research. TIRDO also provides technological support and consultancy to help the local industry in enhancing their competitiveness. Some of TIRDO's ongoing projects focus on:



- Value-addition of leather solid wastes to produce leather boards;
- Industrial bioconversion of selected Tanzanian crops and residues into value-added products using biotechnology;
- Value-addition on locally produced Cassava using tunnel solar dryers.

### Appointment of the New Director-General TIRDO

In 2014, the President of the United Republic of Tanzania appointed Prof. Mkumbukwa M. A. Mtambo as the new Director-General of TIRDO. Prof. Mtambo was a Professor in Veterinary Medicine and Public Health at the Sokoine University of Agriculture Morogoro. He was later appointed the Deputy Vice Chancellor Academic, Research and Innovation at the Nelson Mandela African Institute of Science and Technology.

### Capacity-Building Activities

**Establishment of Modern Energy Lab:** The Energy Technology Division of TIRDO is mandated to undertake R&D in energy, and disseminate the useful information generated about energy-efficient technologies. In July 2014, the Division under the support from the Tanzania Commission for Science and Technology (COSTECH) set-up a modern Energy Lab that caters to the priority fields in Tanzania. The Division will also provide specialized training in various disciplines of Energy, including energy conservation and energy efficiency.

**Establishment of Cyber Security Lab:** TIRDO under the Department of Information and Communication Technology (ICT) of the Tanzania Communication Regulatory Authority (TCRA) has set up a cyber-security lab that will be a platform for training government officials, private firms and other interested individuals. The main focus of the training will be to address the problem of cyber-crimes, cyber security and digital forensics. It is expected that the first batch will be trained in January 2015.

### International Collaborations

**TIRDO and CSIR-India:** TIRDO strengthened its collaboration with the Indian Council of Scientific and Industrial Research (CSIR) by signing a new Memorandum of Understanding (MoU). Under this collaboration, TIRDO has sent four of its scientists for research in areas of Food Microbiology, Energy (Coal), and Leather technologies. These scientists were trained at CSIR-India for three months, learning the best practices of CSIR in their respective fields.



**Participation in COMSATS' International Thematic Research Groups (ITRGs):** COMSATS sponsored two TIRDO staff members to attend the meetings of two of its ITRGs in the areas of Mathematical Modeling and Information Communication Technologies (ICTs). Dr. Wislon Lugano participated in the ITRG on Mathematical Modeling (Abuja, Nigeria), whereas Dr. George Oreku participated in the ITRG meeting on ICTs (Islamabad, Pakistan). The latter also delivered a presentation in International workshop on the Application of ICTs in Education, Healthcare and Agriculture held concurrently in Islamabad.

**Visit by the Executive Director COMSATS:** COMSATS co-organized the fourth International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' in Dar-es-Salaam, Tanzania, on October 19-23, 2014 (Page 40). On the sidelines of this workshop, a delegation of COMSATS led by the Executive Director COMSATS, Dr. I.E. Qureshi, visited TIRDO and interacted with technical staff and visited the laboratories (Page 83).



### **TÜBITAK Marmara Research Center (MAM), Turkey**

Established in 1972, in Kocaeli, Turkey, TÜBITAK Marmara Research Center (MAM), conducts significant R&D activities in strategically determined fields of Science and Technology. MAM is one of the major centres affiliated with TÜBITAK the Scientific and Technological Research Council of Turkey.



In 2014, Dr. Bahadır Tunaboğlu succeeded Prof. Murat Aydın as the President of TÜBITAK MAM.

#### **Major Research Activities**

The seven institutes of TÜBITAK MAM extensively working in various relevant sub-fields are as follows:

- Energy Institute;
- Chemistry Institute;
- Genetic Engineering & Biotechnology Institute;
- Environment and Cleaner Production Institute;
- Food Institute;
- Materials Institute; and
- Earth & Marine Sciences Institute.

During 2014, technology in defence industry became an important area of research.

#### **Capacity-Building Activities**

TÜBITAK-MAM organized 95 activities and participated in 11 national/international



fairs, including:

HighTech Port by MUSIAD;  
Eurasia Rail 2014;  
CPH Istanbul Pharma-Expo 2014; and  
Olivtech Olive and Olive Oil Technologies.

### International Collaborations

An MoU was signed with Frantsevich Institute for Problems in Materials Science (IPMS), National Academy of Sciences, Kiev, Ukraine.

Preparations were made for the signing of MoUs with the following institutions:

- Technical University of Denmark, National Institute of Food (DTU Food);
- University of Wales Trinity Saint David (UWTSD);
- Kaunas University of Technology;

TÜBITAK MAM also hosted a number of activities with delegations from Rwanda, Germany, United Kingdom, Macedonia, Canada, Kazakhstan, Tunisia and Saudi Arabia visiting MAM.

Key Statistics of TUBITAK MAM (2014)		
Employees		944
Researchers	Ph.D (236)	659
	M.S (183)	
	B.S (82)	
	Technicians (158)	
Administrative staff		230
Laboratories		213
Types of analyses		1,493

### Patents acquired

During 2014, seven patents were acquired by the researchers of MAM:

A patent by Mehlika Borcakli of the Food Institute on Long-lasting yoghurt ;

A patent by Nevin Tasaltin, Hayrettin Yuzer, M.Ali Ebeoglu, Fatih Dumludag, Z. Ziya Ozturk of the Materials Institute on Pd/Nitride/n-GaAs Structured Hydrogen Sensor ; and

Five patents by Seher Yalcin, Izzet Kaydi, Murat Ozkaraaslan, Nevin Bekir, Zekai Korlu of the Chemistry Institute on Process for Industrial Production of 2-methyl-1,4-naphthaquinone .

### Publications

52 academic articles were published by MAM scientists in SCI and other indexed journals.

## B. HIGHLIGHTS FROM OTHER CENTRES OF EXCELLENCE

### EMBRAPA Agrobiologia, Brazil

EMBRAPA Agrobiologia along with its sister organizations, EMBRAPA Solos and EMBRAPA Food Technology, organized the first module of the course Agroecological Principles and Farming Practices in Mountain Environments, in Nova Friburgo, Rio de Janeiro, on the 18<sup>th</sup> and 19<sup>th</sup> of February 2014. The training benefitted 50 people.



The goal of the training was to increase awareness about the agricultural production in mountain regions and emphasize that there are market opportunities for products grown through sustainable processes. The event created awareness about the need for natural ecosystems in mountain regions that are often fragile and sensitive to climate changes, because of the shallow soils and geological variability.

### Iranian Research Organization for Science and Technology (IROST), Iran

#### International Cooperation

IROST and Dicle University of Science and Technology Application and Research Center, Turkey, signed a Memorandum of Understanding (MoU), on August 25, 2014, to strengthen scientific and academic cooperation. Under this MoU, IROST and Dicle University agreed to cooperate, inter alia, for knowledge sharing and exchange of information, postgraduate students, and experts.



#### Capacity-Building Activities

Five-day Training National Workshop on Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions and Small Scale Industries (September 28 to October 02, 2014) (Page 44);

Training Workshop on Solutions to Optimize Energy Consumption in Iranian Universities and Research Institutions, (October 18-20, 2014);

Workshop on Strengthening R&D Management Capacity of Researchers and Research Managers in the Area of Nanotechnology (February 25 to 26, 2014); and

International Workshop & Exhibition on 'Sustainable Utilization of Natural Products for Human Health and Well-Being' (January 20-22, 2014).





## International Center for Chemical and Biological Sciences (ICCBS), Pakistan

### Awards and Honours

On September 29, 2014, China's Friendship Award was conferred upon Prof. Dr. Atta-ur-Rahman, the Patron-in-Chief of ICCBS, Pakistan. He was amongst the 100 foreign experts from 25 countries that received the China's highest honor to a foreigner for contributions to the country's economic and social progress.

In its publication titled Productive Scientists of Pakistan 2013-14, Pakistan Council for Science and Technology (PCST) has ranked Prof. Dr. Muhammad Iqbal Choudhary, Director ICCBS, the top-most among the 1,700 productive scientists of Pakistan.

Six more scientists of ICCBS are included in the list of leading productive scientists of the country in the field of Chemistry. The names of these scientists were: Dr. Syed Ghulam Musharraf (17<sup>th</sup> rank), Prof. Dr. Atta-ur-Rahman, former Chairman of the Higher Education Commission (HEC) of Pakistan (20<sup>th</sup>), Dr. Zaheer-ul-Haq (24<sup>th</sup> rank), Prof. Dr. Khalid Muhammad Khan (28<sup>th</sup> rank), Dr. Muhammad Raza Shah (52<sup>nd</sup>) and Prof. Wiqar Uddin Ahmed (92<sup>nd</sup> rank).

Dr. Saima Rasheed, Research Officer at H.E.J. Research Institute of Chemistry of ICCBS, was selected as young scientist to participate in 64<sup>th</sup> Lindau Nobel Laureate Meeting (Physiology and Medicine), in Germany, from 29<sup>th</sup> June to 4<sup>th</sup> July 2014.



### Capacity-Building Events

IYCR2014 South Asia Summit Meeting on Vistas in Structural Chemistry (28<sup>th</sup> to 30<sup>th</sup> April 2014) (Page 47);

3-day Workshop on Protein Chemistry and Genomics (August 19-22, 2014);

Network of Academies of Science in Islamic Countries (NASIC) Workshop on Modern Spectroscopic Techniques (1-3 December 2014); and

3-day Workshop on Techniques in Human Genomic Studies (20-22 August 2014).



### US Patents Acquired by ICCBS

During July-August 2014, four new U.S. patents from ICCBS were published by the United States Patents and Trademark Office (USPTO):

Artonin I to Treat Resistant Infectious Staphylococcus Aureus, US-Patent Application No. 13/740,919;

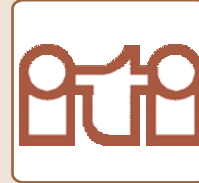
Synthesis and Biological Studies of an Isomeric Mixture of (E/Z) Isoxylitones and Its Analogues, US-Patent Application No. 13/758/027;

Bio-active Antioxidants from Plant Foods for Nutraceutical Product

Development , US-Patent Publication No. 2014/0221634; and  
Heterocyclic Schiff s Bases as Novel and New Antiglcation Agents , US-Patent  
Publication No. 2014/0221429A1, Application No. 13/757,956.

### **Industrial Technology Institute (ITI), Sri Lanka**

Industrial Technology Institute (ITI) of Sri Lanka has been awarded the Presidential Award for inventing Safe Coconut Husk Feeding Mechanism during Fibre Extraction . Coconut coir fibre industry brings in a considerable amount of foreign currency and is the livelihood of many living in coconut growing areas in Sri Lanka. A survey carried out by ITI revealed that the traditional knowledge plays a major role in this industry. It further revealed that it was becoming difficult to find skilled workers to man the Traditional Needle Drums , which is used to open and comb the husk due to high incidence of injuries to fingers and palms of the workers when introducing the husk to the machine. Having identified the necessity of introducing a safer processing method to the industry for its development, a team of researchers, led by Research Engineer, Mr. Anura Sooriyaarachchi, invented a Safe coconut husk feeding mechanism to extract Bristol fibre from traditional fibre extraction process . This has been recognized as the best invention in the field of Industries and Technology for the year 2012 in Sri Lanka, and received the Presidential Award at a ceremony held on 28<sup>th</sup> February 2014 in Colombo.





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# 9

## REPORTS OF SPECIAL ASSIGNMENTS

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For the benefit of its member countries, COMSATS undertakes special assignments from time-to-time, such as conducting scientific studies, undertaking pilot projects or implementing educational programmes. Two of the projects of COMSATS have been successfully transformed into full-fledged institutions, i.e. COMSATS Institute of Information Technology (CIIT) and COMSATS Internet Services (CIS), while a third project on tele-health is being expanded. Another project that has become a regular assignment of COMSATS Secretariat is the maintenance of COMSATS-ISESCO web-portal: Islamic World Science Net (IWSN). The administration related to graduate students studying at CIIT from Member Countries is also the Secretariat's engagement of special nature.

## REPORTS OF SPECIAL ASSIGNMENTS

### Board of Governors, COMSATS Institute of Information Technology (CIIT)

COMSATS Institute of Information Technology (CIIT), which is a flagship project of COMSATS as well as an important member of COMSATS Network of International Centres of Excellence, held a regular (25<sup>th</sup>) and a special (26<sup>th</sup>) meeting of its Board of Governors (BoG) under the Chairmanship of Executive Director COMSATS, Dr. Imtihan Elahi Qureshi, on 28<sup>th</sup> January and 19<sup>th</sup> July 2014, respectively. This governing body of the Institute meets from time-to-time to deliberate on the important matters pertaining to the academic, administrative, legal and financial issues of various campuses of the university.

The 25<sup>th</sup> BoG meeting was attended by the Federal Secretary, Ministry of Science & Technology (MoST), Government of Pakistan, Mr. Kamran Ali Qureshi, as an ex-officio member, while Mr. Naveed A. Malik, Rector Virtual University, Pakistan, as a



nominee of the Chairman Higher Education Commission (HEC) of Pakistan. Joint Secretary from Ministry of Education, Training and Standards in Higher Education Commission also attended the meeting. The COMSATS Institute of Information Technology (CIIT) was represented by its Rector Dr. S. M. Junaid Zaidi, along with Directors of all campuses and Deans of Information Science & Technology (IS&T), and Architecture and Design.



In his opening remarks, Dr. Qureshi acknowledged and appreciated the commitment and dedication of the Board members, as well as the management, faculty and staff of CIIT that enabled CIIT to make unprecedented growth over the years. He recalled his experience of last five years as the Chairman and reiterated his pledged to ensure smooth working and functioning of the Institute and its maximum projection as a flagship project of COMSATS on the national and international fora. The Chairman emphasized implementation of policies and procedures without changing the system and ensuring that the role of Board is not hampered and that the progress of the Institute is not compromised.

Speaking on the occasion, the Secretary MoST highlighted the achievements made by CIIT over the years. While commenting on the role of the Central Executive Committee (CEC) of CIIT, he advised on having a system that could ensure secure development of the Institute, with each of its administrative and consultative body performing its statutory role. The advice of the Federal Secretary was well received, and the Rector CIIT assured that all the matters pertaining to the Board shall invariably be presented before the Board with all relevant details for obtaining necessary approval. It was resolved that Pro-Rector shall participate in the CIIT statutory-body meetings, including those of the Board of Governors, as and when required.

The Chairman BoG apprised the board regarding his meeting with the Federal Minister for Science and Technology, who is also the Chancellor of CIIT, in connection with the recurring grant to meet the budgetary shortfall of CIIT. To this effect, the Federal Secretary MoST informed the house that the Federal Secretary Ministry of Finance has agreed for a grant of Rs. 50 Million for CIIT.



The Rector CIIT made a presentation on the progress, programmes and future plans of the



Institute. He touched upon the status of new campuses; student enrollments; graduates, faculty and staff strength; professional linkages; international events, development projects; budget; and the national and international ranking. It was informed that there were over 27,000 students enrolled and over 24,500 graduates of CIIT, while the faculty strength stood at 2,393. He also informed the Board of CIIT's HEC ranking that places it at No. 2 in terms of Research Productivity among all the higher education institutions of the country.

The Board approved the recommendations/ approvals made by the Institute's Academic Council in its 17<sup>th</sup> meeting. The Board however, did not agree on creating 3 positions of Pro-Rectors in the CIIT system, considering the proposal financially unviable and ineffective for fast paced decision-making. In this regard, a three member committee was constituted under the chairmanship of Secretary MoST for in-depth analysis.

The report on the CIIT's virtual campus was deferred till the approval of the Institute's Academic Council. The Board also approved the contract for the construction of a workshop at CIIT, Islamabad Campus, and also authorized the Registrar CIIT to sign the required legal documents to be presented before all appropriate forums of Pakistani judiciary, such as District Courts, High Courts and the Supreme Court of Pakistan. The Registrar CIIT may delegate these powers to the Directors of the concerned campuses of CIIT.

The special meeting (26<sup>th</sup>) of the Board of Governors of CIIT was held on 10<sup>th</sup> July 2014, to deliberate on one point agenda Draft Bill for the establishment of COMSATS University. The Chairman informed the Board that the draft Bill is ready for onward submission to the Cabinet Division, Government of Pakistan, for its approval. In this connection, the Board nominated the Registrar CIIT as the focal person to take up the matter with the Ministry of Science and Technology and other government departments. The Board approved the draft Bill with some minor amendments.

### **Board of Management, COMSATS Internet Services**

The main governing body of COMSATS Internet Services is its Board of Management (BOM). Chaired by the Executive Director COMSATS, the Board comprises of officials from COMSATS Secretariat, CIS, COMSATS Institute of Information Technology (CIIT), Pakistan Software Export Board (PSEB), Ministry of Science and Technology (MoST), Government of Pakistan, and TRIVOR Software a private-sector company.

The Board held its 27<sup>th</sup> meeting on 20<sup>th</sup> November 2014 at CIS Islamabad. Chairing the session, the Executive Director welcomed the newly inducted members of the Board in his opening remarks. He also hoped that CIS would keep generating sufficient funds for making contribution to social service sector and development of S&T sector in the country.



During the meeting, the Board discussed general performance of CIS, its future plans of expansion of data center and improvement in its billing system. The financial performance during 2013-14 and budget estimates for 2014-15 were also reviewed. Progress made in implementation of Public Sector Development Programme (PSDP) projects, namely expansion of CIS operations through wi-fi services, Construction of CIS Building and Establishment of Network of Telehealth Clinics, also came under discussion. It was decided that the matter of legal status of CIS shall be decided in consultation with legal experts and chartered accountants.

## Report on COMSATS Internet Services

COMSATS Internet Services (CIS) was established in 1996 and has operations in eight major cities of Pakistan, namely Islamabad, Peshawar, Lahore, Faisalabad, Sialkot, Multan, Karachi and Quetta. At present, CIS Islamabad is housed at COMSATS Secretariat building. A 5-storey building of CIS is under-construction and is expected to be completed by September 2015. It is located in the vicinity of COMSATS Secretariat and has a covered area of 45,000 sq. feet. This building will provide an extra space for CIS Data Centre in Islamabad, Tele health Resource Centre, Training Centre and a space of two floors for the Technology incubator and other companies.

## CIS Services

Internet based services of CIS include: wireless broadband (Wi-Fi), DSL, fiber links, on-demand broadband, as well as value-added services such as: domain, website development, web-hosting and video-conferencing. CIS has well-equipped Data Centres in Islamabad and Lahore that offer co-location of virtual private servers (VPS). Clientele of CIS comprises of organizations from both public and private sectors. At present, CIS has more than 5,000 customers, including 1,000 subscribers of wireless broadband, 200 DSL, 800 dial-up and 3,000 domains & hosting subscribers. The average monthly revenue of CIS is Rs. 15 Million.

- Core and Value-added Services:** CIS offers eight branded services, named as The Colors of CIS . These are Tornado® (Wireless broadband), Freedom (Wi-Fi DSL) and Hawaii (Domain, hosting, and VPS). Value added services of CIS are Hurricane (On-demand broadband), Prism (Website development), Viacon (Video conferencing), and Comtrain (IT training courses). CIS also offers a social service in the form of ComClinic , a Telehealth service, whereby patients are examined remotely through video-conferencing and Telehealth equipment by specialized doctors sitting at COMSATS building, and given free-of-charge medical consultancy.
- Data Centres:** CIS data centres provide hosting services on both Windows and Linux platforms. CIS became the first ISP of the country to offer virtual private servers (VPS) with local hosting in Pakistan. VPS is at the infrastructure





level of the cloud services stack. In the wake of the growing demand for cloud services, CIS plans to launch COMSATS cloud services (Cloud ) in the near future. For this purpose, a large storage area network and servers have already been installed in the Islamabad Data Centre. CIS has also launched a data centre facility in Lahore during February 2014. This Data Centre is equipped with all the necessary equipment and facilities. Lahore Data Centre has been linked with Islamabad Data Centre to act as a backup or disaster recovery site for Islamabad and vice versa.

- **Software Development:** CIS software team has developed websites for many public and private sector organizations. The team has developed applications in Java and Dot Net for administrative and financial activities of the ISP, including helpdesk, purchase, and attendance systems. CIS will place these applications on COMSATS Cloud for its customers on monthly rental basis in near future.
- **Training:** CIS offers a wide range of training courses, including CISCO®, CCNA and CCNP, Linux Administration, Windows® Administration, Microsoft Office®, Oracle® database administration, Web development, Graphics design, and ITIL® V3 Foundation.
- **Video-Conferencing:** There are two video-conferencing centres of CIS, one in Islamabad and the other in Peshawar. In 2014, these centres continued providing service to CIS customers for video-conferencing within Pakistan and abroad. Video-conferencing facility is planned to be setup at CIS Lahore node in 2015.
- **Bandwidth Growth:** To ensure high uplink and downlink speeds for its customers, CIS gets bandwidth from multiple bandwidth providers. Purchase of bandwidth grew from 600 Mbps in 2013 to 700 Mbps in 2014, and is expected to reach 1000 Mbps by end of 2015. The bandwidth sold was almost twice the bandwidth purchased because of the bandwidth sharing. This growth in bandwidth reflects the growth of CIS, as ISPs mainly thrive on bandwidth.
- **Telehealth Clinics:** ComClinic is a Telehealth service of CIS, which was launched as a project funded by the Ministry of Science and Technology (MoST), Government of Pakistan. In April 2013, CIS established its first Telehealth clinic in Gokina, a village in the suburbs of Islamabad. Other such clinics are established in Swabi, Khyber Pakhtunkhwa (December 2013); Sector D-10 (Mehra Behri), Islamabad (March 2014); Wahdat Colony, and Quetta (November 2014). A clinic at Maraka, Lahore, will be established in January 2015. All these clinics are connected with the CIS Telehealth Resource Centre in Islamabad where medical specialists, doctors and medical officers are available for consultation. More than 20,850 patients have been provided Tele-Consultations so far.

### CIS Events

CIS Annual Employee Event was held on February 27, 2014 in Lahore, Pakistan. This event was attended by the management and employees of CIS, COMSATS Secretariat, as well as by the representatives from the corporate sector of Pakistan. The Director Lahore Chamber of Commerce & Industry (LCCI) graced the occasion as the Chief Guest. On the occasion, multimedia presentations were made by Chief Executive Officer, General Manager (Admin & HR), and the node head of CIS Lahore,



reviewing the progress made by CIS on various fronts. Key achievements of CIS noted on the occasion were: increase in the revenue and profit, and acquisition of a storage area network. Cash awards and shields were presented to the profitable node heads, as well as to the best employees of the year.

- **Pak China Business Forum, Islamabad:** CIS arranged two stalls for marketing and demonstrating its products and services at the four-day Pak China Business Forum (PCBF) organized by COMSATS Institute of Information Technology (CIIT) in Islamabad from 21<sup>st</sup> to 24<sup>th</sup> March 2014. Special arrangements were made to demonstrate the Telehealth services being provided to the rural and remote suburban areas of Pakistan. As a result of this activity, 80 sales leads for various products and services of CIS were received.
- **ITCNA Asia Expo, Karachi:** CIS also participated in the 14<sup>th</sup> ITCNA Asia Expo, which was organized at Expo Center, Karachi, from 26<sup>th</sup> to 28<sup>th</sup> August 2014. The event attracted more than 2,250 foreign delegates from 97 countries. Representatives from public and private sectors were invited in large numbers to encourage ICT and Telecom operators of the country. The stall of CIS set up at the expo received 56 sales leads.

### Up-gradation of CIS Infrastructure

During the reporting period, CIS consolidated its infrastructure capacity by adding 100 KVA generator, 10 KVA UPS, CISCO switch ASR 2012, as well as a Fojistu Server.

### Financial Performance

CIS generated revenue of Rs. 177.42 Million during the financial year 2013-2014, with an average monthly revenue of Rs. 14.78 Million. The total profit earned was Rs. 19.80 Million. These figures are higher as compared to fiscal year 2012-2013, where the Annual revenue had been Rs. 163.79 Million; monthly revenue had been Rs. 13.63 Million; and the total profit earned was Rs. 12.22 Million.

### Future Plans

With over 18 years of experience as an ISP and in data centre operations, CIS can provide technical consultancy and training services to the member countries of COMSATS on-request, for launching a new ISP or any service similar to the ones being offered by CIS. CIS plans for 2015 include:

- Upgradation of Billing Software;
- Establishment of Tele health clinics at Multan, Karachi and Peshawar;
- Expansion of Wi-Fi network;
- Upgradation and Certification of Data Centre; and
- Completion of CIS under construction building and shifting of technical facilities to the new premises.



## COMSATS Tele-Health Programme

For the last 14 years, COMSATS Secretariat has been engaged in a major initiative to reach out to the patients in the rural and remote areas of COMSATS host country, Pakistan, by means of Telehealth activities connecting Skardu and Zhob to the Resource Centre in Islamabad. With the idea to raise awareness among people and stakeholders, the eHealth activities of COMSATS during year 2014 were more focused on the collaboration in and promotion of eHealth.

- **New Collaboration:** In line with a policy decision to seek new collaborations with organizations working in the area of Telehealth, COMSATS has joined hands with Marie Adelaide Leprosy Centre (MALC), which is a Karachi-Pakistan based NGO. MALC is working for Leprosy elimination, Tuberculosis (TB) and Blindness control, and community development in the country for the last 56 years. COMSATS and MALC have principally agreed to collaborate on Telehealth services in order to complement the latter's ongoing efforts and activities. Under this cooperation, new Telehealth clinics will be set up for tele-consultations and exploring potential of mHealth for awareness campaigns of MALC. The collaboration is the result of the interest shown by Dr. Rabia Hussain, Vice President of The World Academy of Sciences (TWAS), who visited COMSATS Secretariat in Islamabad and gathered information about COMSATS Telehealth services.

In January 2015, members of COMSATS Telehealth team, comprising Principal Medical Officer, Dr. Azeema Fareed and Deputy Director (Systems), Mr. Nisar Ahmad, will visit Karachi to evaluate the administrative and technical capacity of MALC Headquarters where a Resource Centre for MALC is to be established to enable its Telehealth services.

- **Participation in an International event:** Members of COMSATS Telehealth team also made an active participation in the International Workshop on Applications of ICTs in Education, Healthcare and Agriculture held in Islamabad, on December 14-16, 2014. The event was jointly organized by COMSATS, ISESCO, INIT and CIIT (Page 30). In a presentation made on the occasion, the representatives of COMSATS Telehealth team highlighted the features of the web-based Patient Information Management System (PIMS) developed by COMSATS. It was noted that PIMS serves as a cardinal tool for COMSATS tele-consultations.



- **Activities as Member of eHealth Association of Pakistan (eHAP):** Being an organizational member of eHAP, COMSATS was invited at Youth ASK Leadership Conclave 2014, held in Islamabad, Pakistan, on 9<sup>th</sup>-10<sup>th</sup> August 2014. The Conclave was organized by Rutgers WPF, Pakistan, under the programme Access, Services and Knowledge (ASK), funded by the Dutch Ministry of Foreign Affairs. The Conclave intended to provide a unified platform for the young professionals in Pakistan having work experience in the domain of sexual and reproductive health rights. The event was presided over by Dutch Ambassador to Pakistan, H.E. Mr. Marcel de Vink, as the Chief Guest. Dr. Sania Nishtar, President Heartfile and former Minister for Science and Technology, Government of Pakistan, was the keynote speaker.

During a technical session of the event, the Principal Medical Officer, COMSATS, made a presentation on Potential of mHealth in Pakistan. Other speakers of the session were policy makers, medical specialists, professionals from development sector and media, as well as civil society.

Also, during the reporting period, the Principal Medical Officer, COMSATS, continued to participate in the Board and Core Group meetings of eHAP in her capacity as the Joint Secretary of the Association. Dr. Azeema also prepared and presented an initial draft of the concept paper on capacity-building strategy for eHAP. The concept paper was also prepared and presented to the Board. The concept paper provides outline of the future capacity-building programmes of eHAP.

- **eHealth Web-portal:** The web-portal especially designed and developed for COMSATS Telehealth programme has now become an essential online tool for carrying out tele-consultations. During the reporting period, the number of user-groups of COMSATS web-portal has increased owing to the inclusion of data and users from Telehealth clinics linked to the Telehealth project of COMSATS Internet Services. An effort is being made to optimize the web-portal and updating it based on the feedback received from the users.



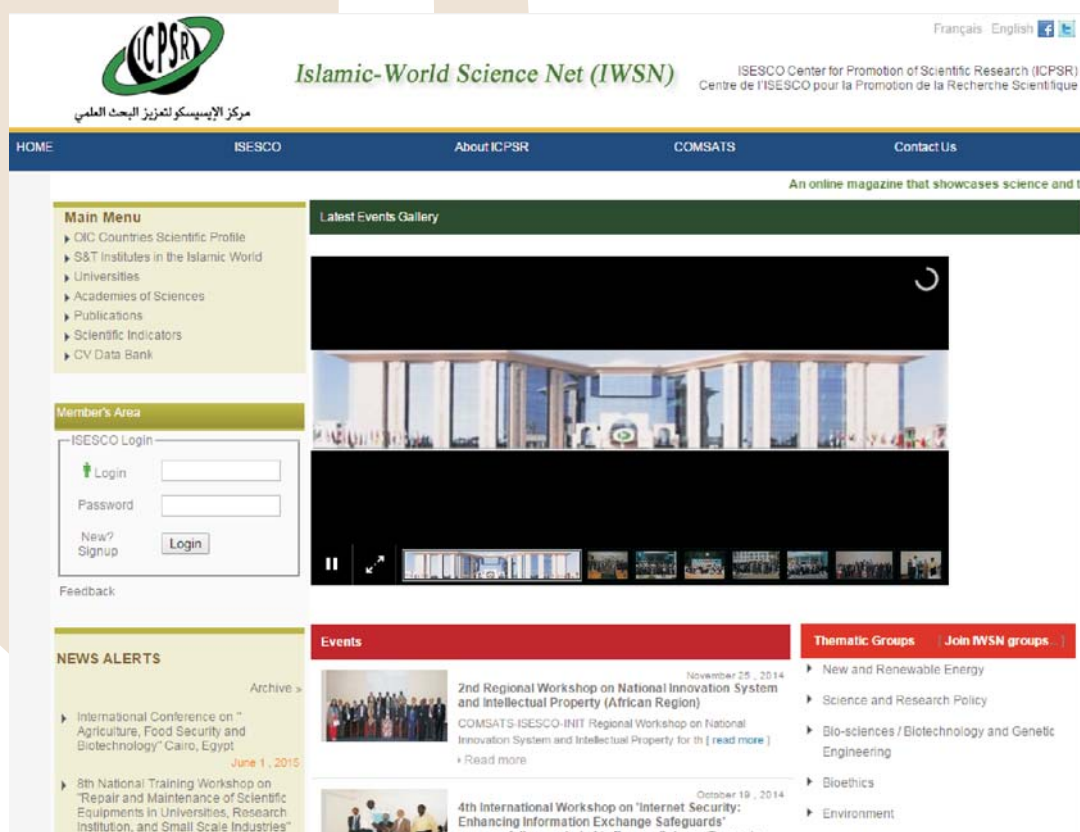


## Islamic World Science Net (IWSN) Web Portal

In 2007, COMSATS in collaboration with ISESCO jointly initiated a project, titled Islamic World Science Net (IWSN) Web-portal, to enhance networking and cooperation among S&T researchers and scientific community in the Islamic countries some of which are also COMSATS members. The IWSN web-portal was completely designed, developed and launched by COMSATS. Since its launching, COMSATS dedicated team has been constantly updating and maintaining the web-portal to serve the needs of the growing number of its users.

IWSN's data bank has become a useful source of information to the scientific community of the world. At present, the web-portal is hosting: S&T profiles of fifty seven (57) OIC Member Countries, and information on 699 R&D institutes; as well as profiles of 774 universities and 25 academies of sciences in these countries. The S&T profiles are based on fifty eight (58) scientific indicators under nine main categories, i.e. general, scientific, economic, educational, healthcare, agricultural, industrial, telecommunication and environmental. Moreover, the portal is also hosting a data-bank of curriculum vitae of scientists, and a number of publications, including research references, science journals and research papers.

To enhance cooperation among the Islamic countries, the most important feature of the web-portal, the Virtual Scientific Thematic Groups (VSTGs), was launched jointly by COMSATS and ISESCO, in March 2009. IWSN is hosting ten (10) VSTGs in various important scientific areas which are being administered by renowned scientists.



At present, IWSN has 4,238 registered members that may be seen in the following category-wise distribution.

Thematic Group Name	Total Users (as on Dec 31, 2014)
New and Renewable Energy	506
Science and Research Policy	457
Bio-sciences / Biotechnology and Genetic Engineering	524
Bioethics	163
Environment	459
Mathematics	164
Water Management	303
Nanotechnology	301
Science & Technology Park Management	194
ICTs in Science and Technology	238
Others	929

Under the ISESCO-COMSATS Action Plan 2014 for IWSN, the interface of the web-portal has been improved both in terms of its layout and functionality enabling better accessibility of the information stored on the portal.

The analytical reports of IWSN portal for 2014, show a rising trend of the usage of the web-portal by scientists and students, not only from the Islamic World but also from other developing/developed countries. Seventy eight thousand nine hundred and fifty eight (78,958) visits were made to the portal from 193 countries/territories during 2014. United States, United Kingdom, Canada, Germany & India are among the top fifteen (15) countries, from which the web-portal has been accessed.

## COMSATS Graduate Scholars

In order to help member countries to develop technically qualified human resources, COMSATS encourages its Centres of Excellence and partner institutions to make study and research scholarship offers to the outstanding scholars and researchers from COMSATS Member States. Over the last 20 years, COMSATS Scholarship have helped further the higher educational pursuits of many promising international students from its Member States.

During the 17<sup>th</sup> Coordinating Council Meeting of COMSATS, the Pro-Rector of COMSATS Institute of Information Technology (CIIT), Pakistan, reiterated the offer of postgraduate scholarships for studies at any of the seven campuses of CIIT in various disciplines. Later, as a standard practice, the announcement of the scholarship offer of CIIT was circulated by COMSATS Secretariat to the Focal Points in its Member States. As a result, COMSATS Secretariat received 11 nominations for MS-studies (Fall 2014). Upon completion of necessary pre-requisites, the postgraduate scholarships were awarded to 8 nominees belonging to Nigeria (6), Bangladesh (1),



and Sudan (1) for their MS studies in the various departments of CIIT, including Physics, Mathematics, Biosciences, Computer Science and Meteorology. CIIT scholarship covers 100 % tuition fee; a 50 % rebate on boarding/lodging cost; as well as upto 80 % waiver on admission and other fees.

COMSATS Secretariat provided financial support to the six Nigerian students who came to Pakistan to commence their studies in September 2014 at CIIT Islamabad Campus, in the form of air travel from Abuja (Nigeria) to Islamabad (Pakistan).

Administrative support for the management of all affairs related to the studies of COMSATS scholars is provided on routine basis by the Secretariat.





# 10

## PUBLICATIONS AND INFORMATION DISSEMINATION

- COMSATS Newsletter 140
- COMSATS Journal, Science Vision 142
- Proceedings of the 50<sup>th</sup> Anniversary of AS-ICTP held in Islamabad 144
- COMSATS Website and Other Information Material 144
- COMSATS Projection in the Print Media of the Host Country 145

Information dissemination and outreach is done by COMSATS through four tools: bimonthly Newsletter, bi-annual journal Science Vision, COMSATS Series of S&T Publications and COMSATS official website, apart from other promotional material.

## PUBLICATIONS AND INFORMATION DISSEMINATION

### COMSATS Newsletter

COMSATS bimonthly Newsletter was initiated in 2009 for frequent projection of COMSATS international programmes and activities, as well as to regularly sensitize all concerned about the Secretariat's undertakings and achievements of COMSATS Network of S&T Centres of Excellence, among other things.

During the year 2014, six issues of COMSATS Newsletter were published that include five issues of volume 6 and one issue of preceding volume. The six issues published during the year comprised of 12 to 20 pages each. Apart from the regular sections covering the activities of COMSATS Secretariat and Centres of Excellence, comprehensive reports of the 17<sup>th</sup> Coordinating Council meeting held in Tehran, Iran, and a report on 20<sup>th</sup> Anniversary of the Establishment of COMSATS were covered

under Special Section of the Newsletter. A report of the three capacity-building events supported/organized by COMSATS during November/December 2014 in Egypt, Morocco and Pakistan will be published in Issue 6 of Volume 6 in January 2015.

For Volume 6, COMSATS introduced a section on S&T Indicators of Member State to highlight the socio-economic and scientific standing of COMSATS Member States. Under the new



section, so far four member countries have been projected with coverage of their broad spectrum of developmental indicators. These countries are: Jordan, Bangladesh, Ghana and China. In the sixth issue of the volume, this section will highlight the S&T standing of Tanzania as a developing country. Moreover, under this section, interviews of Jordanian and Chinese Ambassadors to Pakistan were also featured to get their Governments stance on the role of S&T for development, as well as the efforts made in the past and planned for the future in partnership with other developing countries and COMSATS. The interview of the Jordanian Ambassador was conducted by the officials of COMSATS Secretariat at the Member Country's embassy in Islamabad. This section will be maintained for the volume 7 during 2015.

COMSATS maintaining a strong focus on S&T and sustainable development also published an article by Rachel Mundy titled Science - What Can it Do for the Sustainable Development Goals? in issue 3.

Under the section Profile of Head of Centre of Excellence, which was introduced in the 5<sup>th</sup> issue of the 3<sup>rd</sup> volume, profiles of six Heads of COMSATS Centres of Excellence were coverage in volume 6. The profiles of following Heads of Centres of Excellence were published:

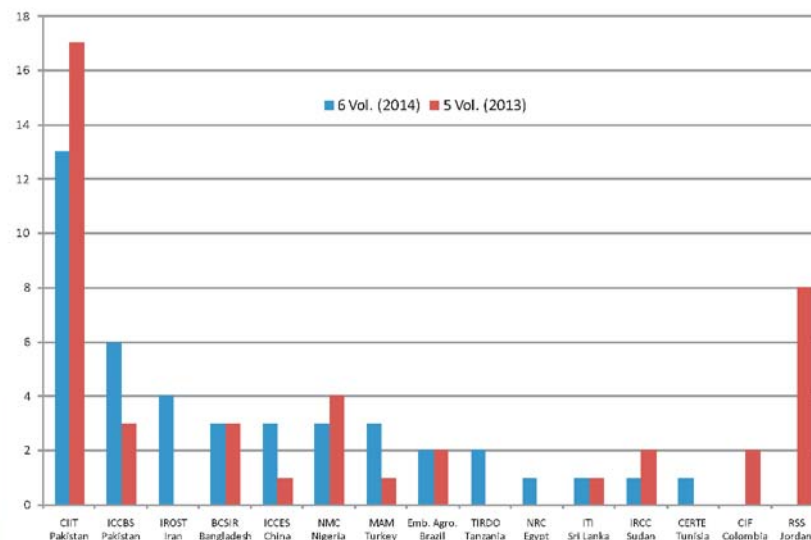
Dr. Wael Khansa, Director HIAST, Syria;  
 Prof. M. M. A. Mtambo, Director-General TIRDO, Tanzania;  
 Dr. Gustavo Ribeiro Xavier, Director-General Embrapa Agrobiologia, Brazil;  
 Dr. Bahadir Tunaboylu, President MAM, Turkey;  
 Mr. Charles N. Grant, Director-General ICENS, Jamaica; and  
 Dr. Mohamed Ben Youssef, Director-General CERTE, Tunisia.

The section on Science, Technology and Development of the Newsletter was continued in the sixth volume keeping in view the interest of scientists, researchers, and policy-makers. The section featured important scientific findings in various fields of science and cutting edge technologies from across the globe having potential to affect the socio-economic condition of the developing world.

The section covering the activities of COMSATS affiliated Centres of Excellence was continued on the basis of the contributions received in response to the regular calls made by COMSATS Secretariat, as well as selected entries through web-based search. The inflow of content contributions remained almost consistent to that of the 5<sup>th</sup> Volume. This is reflected from the total number of news entries published in Volume 6. A comparison of the entries in the said section of Volumes 5 and 6 is illustrated in the following graph.





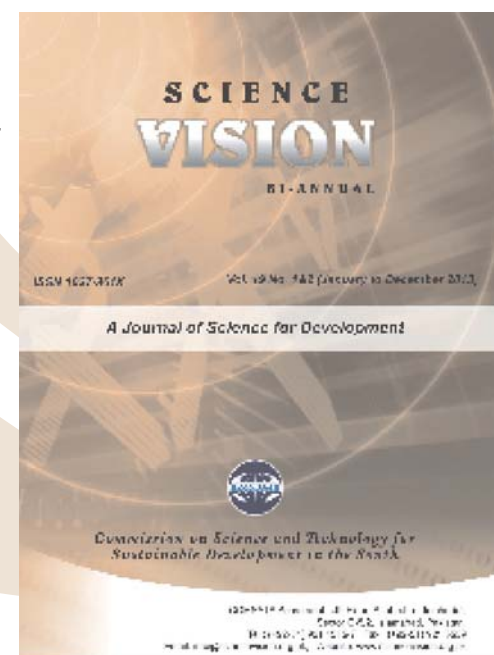


As per practice, the printed issues of COMSATS Newsletter were distributed, inter-alia, among COMSATS Focal Points, affiliated Centres of Excellence, partner and other international organizations, R&D organizations, S&T institutions, and universities around the world. Copies of the Newsletter were also distributed amongst the participants of COMSATS sponsored S&T capacity building events. In order to enhance outreach and impact of the publication over a diverse audience, the circulation list of the newsletter was gradually expanded to accommodate the growing demand. The total number of copies of the newsletter was increased from 700 to 900 for the last two issues of the volume in 2014. Moreover, the free electronic subscription of the e-newsletter was initiated from January 2014.

### COMSATS Journal, Science Vision

Science Vision is a bi-annual peer-reviewed journal of COMSATS that was launched in 1995 with an aim to highlight the important scientific and technological developments having a bearing on socio-economic conditions of the world populations. During the reporting period, a combined issue of volume 19 was published, whereas peer reviewing and editing work of the papers included in the first issue of volume 20 was completed.

During 2014, extensive efforts were made by COMSATS Secretariat to invite papers in line with the focus of the journal. In this connection, correspondence was made with officials, representatives and members of various S&T institutions, R&D organizations, as well as academic circles from across the world by introducing them to the journal, its focus and format, types of papers accepted, and broad instructions for authors. The Executive Director COMSATS as the Patron and Editor-in-Chief of the journal has been inviting papers for the journal at various international events and fora. Call for papers were regularly made through COMSATS bi-monthly Newsletter, website of the journal and through the one-page flyer of the journal distributed along



with other publications of COMSATS. The Patron and Editors of the journal sent around 1,900 formal invitations during 2014 to the following focused groups:

Heads of COMSATS Centres of Excellence;  
Members of COMSATS Technical Advisory Committee;  
Rectors and Presidents of Universities from OIC Member States;  
Participants of COMSATS sponsored S&T Conference/ Symposia/ Seminars held during 2014;  
Subject experts from various field of S&T;  
Members of Scientific societies;  
Authors of scientific publications in various journals; and  
Faculty members of universities of Pakistan.

The recipients were also encouraged to pass on the invitations to their peers and colleagues. Moreover, the call for papers for Science Vision has also been placed on the social media pages of COMSATS.

The combined issues of volume 19, covering the period January to December 2013 comprised 11 papers; whereas the first issue of Volume 20 comprise 12 papers, which will be printed soon. For both these issues a combination of invited as well as conference papers from the biennial event of COMSATS Institute of Information Technology (CIIT), titled Environmentally Sustainable Development (ESDev-2013) have been included. Considering 2014 being the UN's International Year of Crystallography, efforts were made to specifically invite papers on the theme to be covered under the volume 20.

In addition to the usual activities for the management of the journal, COMSATS Headquarters has been able to materialize its efforts for consolidating its Editorial Board with inclusion of international experts from different fields. The new editorial board, expected to be further strengthened incrementally over time, will help solicit papers for Science Vision and review papers relevant to their expertise, as well as provide necessary consultancy on various matters related to the journal. Following new members of the Editorial Board have been appointed during the reporting period and have already started rendering their services with effect from the Volume 20 (1) of the journal:

Prof. Allam Ahmed  
Middle Eastern Knowledge Economy Institute (MEKEI)  
University of Brighton, and  
Science Policy Research Unit (SPRU)  
University of Sussex, UK

Prof. M. Aslam Khan  
HEC Foreign Professor  
COMSATS Institute of Information Technology (CIIT), Pakistan

Dr. Gary Straquadine  
Professor and Department Head  
Agricultural Communication, Education, and Leadership  
College of Food, Agricultural, and Environmental Sciences  
The Ohio State University, USA



Dr. Amitava Biswas  
Technical Leader - Engineering  
CISCO, USA

The volume 19 of the journal was distributed among Heads of Centres of Excellence, representatives and members of various science academies, R&D organizations, and academic circles in COMSATS Member States.

## Proceedings of the 50<sup>th</sup> Anniversary of AS-ICTP held in Islamabad

COMSATS has initiated work for the publication of the proceedings of the ceremony held in connection with the 50<sup>th</sup> Anniversary of Abdus Salam International Centre for Theoretical Physics (AS-ICTP), at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, on 18<sup>th</sup> October 2014 (Page 43). The publication will cover talks by 11 Pakistani scientists who have benefited from the international programmes of AS-ICTP over the years. To make the publication more informative, a short note from the incumbent Director of ICTP; chronology of key events in the history of ICTP; and historical data on the Centre's programmes will be covered, which will highlight the significance of the Centre's role in support of scientists from the developing countries.

## COMSATS Website and Other Information Material

Apart from year-long incremental updates, COMSATS Headquarters has adopted a practice of reviewing its official website at the turn of each year to refreshing its outlook. On January 1, 2014, the content on the website was thoroughly updated and revised for its layout and format. The homepage of the website was given a new outlook to enhance its visual appeal. The new features added to the website included: search option; picture/video gallery; web-links to social-media.

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

Introduction | Headquarters/Secretariat | Member Countries | Network of Centres of Excellence | Programmes | News Archives | Events Archives

**Brief Introduction**

COMSATS is an intergovernmental organization with its permanent Secretariat based in Islamabad, Pakistan. Established in 1994, the organization comprising 21 Member States, strives to promote South-South cooperation in the fields of Science and Technology that are most relevant to socio-economic development. A Network of 19 Centres of Excellence in four continents affiliated with COMSATS, provides the necessary pool of human resources and scientific infrastructure for undertaking a variety of capacity-building programmes, bilateral and multilateral cooperative research and consultancy/advocacy for the promotion of S&T as primary ingredient of national development plans. The mission of COMSATS is to help create a world where all nations are at peace with one another and capable of providing good quality of life to their populations in a sustainable way using modern S&T resources.

COMSATS also provides an institutional platform for North-South technical cooperation in areas of common interest such as Energy, Health, Education, Information Technology, and Environment. The flagship projects of COMSATS in Pakistan are open to all Member Countries for training and consultancy.

**17th Meeting of COMSATS Coordinating Council**

**2nd Commission Meeting of COMSATS**  
16-17 April 2012, Islamabad, Pakistan

**2nd Meeting of COMSATS Consultative Committee**  
1 May 2013, Accra, Ghana

**17th Meeting of COMSATS Coordinating Council**  
19-20 May 2014, Srinagar, India

**Latest News** | Statutory Meetings | Research Groups | Flagship Projects

**19th - 20th December 2014**  
**COMSATS and CERN to Share Resources for Science Teachers' Trainings**

The Director-General CERN, Prof. Dr. Rolf-Dieter Heuer visited Pakistan on 19-20 December 2014, in connection with the signing of Pakistan's accession agreement as CERN Associate Member. Availing the opportunity of his presence in Islamabad, the Executive Director COMSATS, Dr. IE Qureshi and senior officials... [Read more]

**Upcoming Events**

- 18th Meeting of COMSATS Coordinating Council, Colombo, Sri Lanka
- 18th Meeting of COMSATS

Tentative List of Upcoming Events

**Activities of Centres of Excellence**



To keep the its stakeholders and scientific community abreast with the latest events co-organized by COMSATS in collaboration with its partner institutions, COMSATS Secretariat meticulously prepared information material, and first announcements of various capacity building events, covered in the earlier parts of this Annual Activity Report.

## COMSATS Projection in the Print Media of the Host country

In order to improve the visibility of COMSATS and better projection of its events and activities, COMSATS Secretariat regularly issued pre- and post-event press releases, announcements, and summaries to print and electronic media on the events and other important happenings of the COMSATS.

A major activity in this regard was undertaken in October 2014 in the form of bringing out a supplement in one of the well-reputed English news dailies of Pakistan, Express Tribune, on the occasion of the organization's 20<sup>th</sup> Anniversary. An attractive layout spanning a full page of the Daily, suitably projected COMSATS international role for sustainable development and its S&T-based activities in Member States. A detailed article highlighting various international projects and programmes, as well as presenting a comprehensive picture of the organization's statutory bodies and modus operandi was accompanied by relevant tabular information and pictorial content. The activities in print media are being coordinated with a Media Consultant on the payroll of COMSATS Secretariat, active since November 2013.

Continuing its efforts for creating a stronger rapport with the national print and electronic media of the host country, COMSATS Secretariat held a meeting with the editors and reporters of newspapers working in Islamabad, on December 5, 2014. The objective was to mainly inform them about the recommendations of the Science Journalism and Communication Seminar organized by COMSATS in April 2014 (Page 50), and offer COMSATS support to the journalistic community to strengthen the neglected area of science journalism in the country.





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# 11

## FINANCIAL AFFAIRS OF COMSATS

- Accounts and Audit 148
- Contributions of Member States 148



Since the inception of the organization, COMSATS Secretariat's Finance and Accounts Department has been managing its financial activities, including the grant by the Government of Pakistan for meeting the overhead expenditure of the Secretariat, and the Annual Membership Contributions received from the Governments of COMSATS Member States.

## FINANCIAL AFFAIRS OF COMSATS

### Accounts and Audit

The accounts of COMSATS Secretariat are maintained as per the International Accounting & Financial Standards. The fiscal year of COMSATS Secretariat begins from July 1 and ends on June 30 of the succeeding year. After closing of the accounts on 30<sup>th</sup> June every year, COMSATS gets its accounts audited by a reputed chartered accountancy firm. The audited accounts, along with Auditors Report, are submitted to COMSATS Management Committee for endorsement and the Coordinating Council for approval.

M/s. M. Yousuf Adil Saleem & Co., Chartered Accountants, conducted audit of accounts of COMSATS Secretariat for the financial year that ended on June 30, 2013. The Auditors Report and Audited Financial Statements of COMSATS Secretariat for the financial year commencing from July 1, 2012 and ending on June 30, 2013, are given in this report.

### Contributions of Member States

The voluntary contributions of Member States towards COMSATS are kept as a trust fund and are spent to support the technical activities and programmes of COMSATS related to the contributing country.

During the year 2014, COMSATS received Annual Membership Contributions (AMC) from three Member States, Pakistan (In Pak Rupees equivalent to US\$ 20,000/-), China (US\$ 20,000/-) and Iran (US\$ 10,000/-). In addition to the AMC, the Government of Pakistan also contributes PKR 40 million (~US\$ 400,000) per annum towards the running costs of COMSATS Secretariat based in Islamabad, Pakistan.

## AUDITORS' REPORT TO THE COORDINATING COUNCIL

We have audited the annexed balance sheet of the Commission on Science and Technology for Sustainable Development in the South (COMSATS) Secretariat ("the Secretariat") as at June 30, 2013 and the related income and expenditure account, cash flow statement and statement of changes in funds together with the notes forming part thereof, for the year then ended and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit.

It is the responsibility of the Secretariat's management to establish and maintain a system of internal control, and prepare and present the above said statements in conformity with the approved Accounting and Financial Reporting standards for Medium-Sized Entities (MSF) issued by the Institute of Chartered Accountants of Pakistan. Our responsibility is to express an opinion on these statements based on our audit.

We conducted our audit in accordance with the international auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said statements are free of any material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the above said statements. An audit also include assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said statements. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

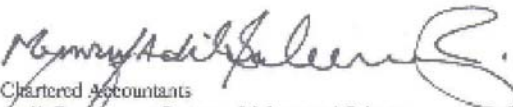
- (a) in our opinion, proper books of account have been kept by the Secretariat;
- (b) in our opinion-
  - (i) the balance sheet and income and expenditure account together with the notes thereon have been drawn up in conformity with the Accounting and Financial Reporting Standards for Medium-Sized Entities (MSF) issued by the Institute of Chartered Accountants of Pakistan, and are in agreement with the books of account and are further in accordance with accounting policies consistently applied;
  - (ii) the expenditure incurred during the year was for the purpose of the Secretariat's business; and
  - (iii) the operations conducted, investments made and the expenditure incurred during the year were in accordance with the objects of the Secretariat.

Member of  
Deloitte Touche Tohmatsu

**Deloitte.**

M. Yousef Adil Saleem & Co.  
Chartered Accountants

- (c) in our opinion and to the best of our information and according to the explanations given to us, the balance sheet, income and expenditure account, cash flow statement and statement of changes in funds together with the notes forming part thereof conform with approved accounting standards as applicable in Pakistan, and, give the information required by the Accounting and Financial Reporting Standards for Medium-Sized Entities (MSEs) issued by the Institute of Chartered Accountants of Pakistan, in the manner so required and respectively give a true and fair view of the state of the Secretariat's affairs as at June 30, 2013 and of the surplus, its cash flows and changes in funds for the year then ended.

  
Chartered Accountants  
Audit Engagement Partner: Mohammad Saleem

Dated: 20 MAY 2014  
Islamabad

Member of  
Deloitte Touche Tohmatsu



**COMMISSION ON SCIENCE AND TECHNOLOGY FOR  
SUSTAINABLE DEVELOPMENT IN THE SOUTH (COMSATS) SECRETARIAT  
BALANCE SHEET  
AS AT JUNE 30, 2013**

	Note	2013 (Rupees)	2012
<b>NON-CURRENT ASSETS</b>			
Property and equipment	4	26,123,576	22,825,121
Investment property	5	913,104	561,478
Investment in Joint Venture	6	591,215	558,113
Long term loan	7	59,536,249	61,315,834
Long-term security deposits		536,100	585,460
		<u>87,800,204</u>	<u>91,252,006</u>
<b>CURRENT ASSETS</b>			
Advances and prepayments	8	3,603,115	2,432,209
Short-term investments	9	29,961,334	21,781,738
Current portion of long term loan		1,500,000	1,305,000
Accrued interest on bank deposits		398,013	284,857
Other receivables	10	4,558,006	3,430,612
Cash and bank balances	11	38,256,876	57,428,582
		<u>77,287,354</u>	<u>65,557,828</u>
<b>TOTAL ASSETS</b>		<u><b>165,088,258</b></u>	<u><b>157,809,834</b></u>
<b>FUNDS AND RESERVES</b>			
Technical assistance fund	12	32,000,800	52,000,000
Accumulated surplus		84,469,271	73,807,863
		<u>116,469,271</u>	<u>105,807,863</u>
<b>NON-CURRENT LIABILITIES</b>			
Deferred grants	13	35,395,723	33,065,046
Deferred liabilities	14	9,770,823	11,573,149
		<u>45,166,546</u>	<u>44,638,195</u>
<b>CURRENT LIABILITIES</b>			
Creditors, accrued and other liabilities	15	3,453,241	4,175,778
Unearned income		-	3,150,000
		<u>3,453,241</u>	<u>7,365,778</u>
<b>TOTAL FUNDS AND LIABILITIES</b>		<u><b>165,088,258</b></u>	<u><b>157,809,834</b></u>
<b>CONTINGENCIES AND COMMITMENTS</b>	16		

The annexed notes from 1 to 22 form an integral part of these financial statements.

  
DEPUTY DIRECTOR (F&A)

  
EXECUTIVE DIRECTOR



COMMISSION ON SCIENCE AND TECHNOLOGY FOR  
SUSTAINABLE DEVELOPMENT IN THE SOUTH (COMSATS) SECRETARIAT  
INCOME AND EXPENDITURE ACCOUNT  
FOR THE YEAR ENDED JUNE 30, 2013

	Note	2013 (Rupees)	2012
<b>INCOME</b>			
Grant income	17	40,711,000	40,748,421
Other income	18	17,907,885	13,581,889
		<u>58,618,885</u>	<u>54,330,310</u>
<b>EXPENDITURE</b>			
Administrative expenses	19	47,728,504	45,274,408
Finance cost		28,973	25,621
		<u>47,757,477</u>	<u>45,300,029</u>
<b>SURPLUS FOR THE YEAR</b>		<u><u>10,861,408</u></u>	<u><u>9,030,281</u></u>

The annexed notes from 1 to 22 form an integral part of these financial statements.

*Signature*

*Signature*  
DEPUTY DIRECTOR (P&A)

*Signature*  
EXECUTIVE DIRECTOR

**EDITOR-IN-CHIEF**

Dr. Imtinan Elahi Qureshi  
Executive Director COMSATS

**EDITORS**

Mr. Irfan Hayee  
Ms. Farhana Saleem  
Ms. Narmeen Khurram

**DESIGNED BY**

Mr. Imran Chaudhry

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*The editors would like to acknowledge Mr. Farhan Ansari, Ms. Huma Balouch and Mr. Abdul Majid Qureshi for their special support towards finalization of this report.*







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2014



## **LIST OF MEMBERS OF COMSATS' NETWORK OF INTERNATIONAL S&T CENTRES OF EXCELLENCE**

- Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh
- Embrapa Agrobiologia, Brazil
- International Center for Climate & Environment Sciences (ICCES), China
- Centro Internacional de Fisica (CIF), Colombia
- National Research Centre (NRC), Egypt
- Council for Scientific and Industrial Research (CSIR), Ghana
- Iranian Research Organization for Science and Technology (IROST), Iran
- International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica
- Royal Scientific Society (RSS), Jordan
- National Mathematical Centre (NMC), Nigeria
- COMSATS Institute of Information Technology (CIIT), Pakistan
- International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- Université Cheikh Anta Diop (UCAD), Senegal
- Industrial Technology Institute (ITI), Sri Lanka
- Industrial Research and Consultancy Centre (IRCC), Sudan
- Higher Institute for Applied Sciences and Technology (HIASST), Syria
- Tanzania Industrial Research and Development Organization (TIRDO), Tanzania
- Water Research and Technologies Centre (CERTE), Tunisia
- TÜBİTAK Marmara Research Center (MAM), Turkey

# ANNUAL REPORT 2014



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