



Participants of 22nd Coordinating Council Meeting gathered at Tianjin Institute of Industrial Biotechnology (TIB), China, this April to deliberate on a 15-point Agenda.

Eighteen participating Centres made pledges to further their technical cooperation and reiterated their commitment to UN's 2030 Global Agenda.

(Details on page 7)

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From the Executive Director's Desk

The world today is confronted with enormous challenges ranging from poverty, hunger and disease as well as the looming threats related to climate change and environmental degradation. The survival of the planet as a viable and livable globe is at stake. The increasing focus on science, technology and innovation in reversing some of these negative trends cannot be understated, especially in the context of the developing countries and sustainability. The interconnectedness of the world and regions and the peoples has become synonymous with the world as a Global Village. The development problems of countries of the South cannot be seen in isolation – a realization that is reflected in the collective commitment of all countries for pursuing the 2030 Global Development Agenda. A broad spectrum of measures involving all stakeholders has been recognized as key to promoting sustainable development.

Addressing inequality both within and among countries cannot be achieved without partnerships and collaborations aimed at sharing experiences, best practices, knowledge and technical resources. Such cooperation can help build and sustain not only indigenous capacities in science and technology, it can also spur innovation bringing about the achievement of the much desired goal of socio-economic progress. COMSATS can take pride in the fact that it has been able to create a niche in promoting science and technology in

different fields that have had socio-economic impact. COMSATS is committed to expanding the horizons of its operations especially in the developing world by fostering bilateral and multilateral collaborations. To further this objective, COMSATS recently signed a Memorandum of Understanding with the Organization of Islamic Cooperation (OIC), which will enable it to harness the necessary support of the Organization for scientific and technological cooperation.

I am pleased to report that the past two months have been eventful. The 22nd Meeting of COMSATS' Coordinating Council (comprising the Network of 22 Centres of Excellence) was graciously hosted by Tianjin Institute of Industrial Biotechnology (TIB) – COMSATS' second CoE from China. I am grateful to the CoEs for their active participation as well as to the Chinese officials for excellent arrangements for the meeting and for making it successful. I congratulate all the members and more importantly our host, TIB, for the successful deliberations. The meeting also afforded an excellent opportunity to confer Honorary Lifetime Membership of the Coordinating Council upon Prof. Dr. Ashraf Shaalan and to renew his chairmanship of the Coordinating Council for another term of three years. I extend my congratulations to him. His

HIGHLIGHTS FROM COMSATS SECRETARIAT

COMSATS signs an MoU with OIC for the Promotion of STI

COMSATS and the Organization of Islamic Cooperation (OIC) inked a Memorandum of Understanding (MoU) on 19th March 2019 at COMSATS Secretariat, Islamabad. Dr. S.M. Junaid Zaidi, Executive Director, COMSATS and Mr. Muhammad Naeem Khan, Assistant Secretary General for Science and Technology (Ambassador – OIC) signed the MoU on behalf of their organizations. The MoU aims to promote science, technology and innovation for achieving sustainable socio-economic development in 17 common member states of COMSATS and OIC.

Under this Agreement, both sides have pledged to organize scientific events and conferences, capacity building and training workshops, high-level public awareness seminars and related activities. The Agreement also seeks to enhance exchange and sharing of experiences, expertise and resources for joint programmes.

COMSATS Strengthens Cooperation with China

On the sidelines of the 22nd Meeting of COMSATS Coordinating Council



(Page 5), a delegation of COMSATS Secretariat and COMSATS University Islamabad (CUI) visited the Tianjin University of Science and Technology (TUST) and Embassy of Pakistan in Beijing, China.

The senior officials and faculty of TUST received briefing about COMSATS' programmes and activities as well as proposed initiating faculty/student exchange between TUST and COMSATS Centres of Excellence. Reciprocally, Prof. Zhang Aihua, Vice Chairman, TUST, gave an overview of the academic and research activities being undertaken by the University and its umbrella departments. The University, he added, is well-known

for the research in food sciences, biotechnology and chemical engineering and is conducting 80 innovative projects at the national level. Besides, it was informed that thousand foreign including eleven Pakistani students are studying at the University.

Prof. Aihua was appreciative of COMSATS' sustainable development-led activities and encouraged COMSATS and CUI to benefit from the opportunities available under Belt and Road Initiative (BRI). During the meeting, both sides pledged to further cooperation with potential support under BRI.

On 19th April 2019, the delegates met with H.E. Mr. Masood Khalid, Ambassador of Pakistan to China, to seek Embassy's support towards COMSATS collaborative activities with China especially those under BRI. The Ambassador was appreciative of COMSATS ongoing collaboration with its Centres of Excellence in China, i.e., International Centre for Climate and Environment Sciences (ICCES) and Tianjin Institute of Industrial Biotechnology (TIB).

Further, H.E. Mr. Khalid encouraged COMSATS University Islamabad (CUI) to join the Consortium of CPEC



universities in order to fully benefit from the initiative.

COMSATS-NRC Workshop on Water Resources: Expected Crises and Strategies of Predomination held in Egypt

COMSATS in collaboration with its Centre of Excellence in Egypt, National Research Centre (NRC), organized an international workshop on "Water Resources: Expected Crises and Strategies of Predomination" from 11th – 12th March 2019, in Cairo, Egypt. The event brought together scientists, academicians, managers in private sector, and mid-to senior-level government officials to discuss and find solutions to the issues related to water resources.

The workshop was inaugurated on 11th March 2019 in the presence of scientists and researchers from China, Egypt, Nigeria, Pakistan, Sri Lanka, and Sudan. Speaking at the inaugural, Dr. S.M. Junaaid Zaidi, Executive Director COMSATS, noted that water availability, quality and management are the most significant challenges in developing countries, especially under changing climatic conditions. He pledged COMSATS' continued support to its member countries and developing world as well for addressing these challenges.

Prof. Ashraf Shaalan, Chairman COMSATS Coordinating Council, in his remarks, appreciated the work of COMSATS in supporting young researchers from the South and strengthening the South-South and Triangular cooperation.

Prof. Mohamed Hashem, President of NRC, Egypt; Dr. Ahmed Abdul-Nazeer of the Ministry of Military Production, Egypt; and Prof. Mahmoud M. Sakr, President, Academy of Scientific



Research and Technology (ASRT) also spoke at the inaugural.

The technical proceedings of the two-day Workshop comprised thirty (30) sessions including two plenary sessions during which speakers from Pakistan, Egypt, China, Sri Lanka, Nigeria, and Sudan made their presentations on various topics which, inter alia, included: rational use of water in agriculture, green environment, irrigation, water resources, wastewater treatment, improving water productivity and quality, and sustainable water management.

Earth Day 2019 Commemorated

COMSATS, in collaboration with the American Institute of Pakistan Studies (AIPS) and the Centre for Climate Research & Development (CCRD) of CUI, organized a consultative dialogue on "Air Pollution in Pakistan" to observe the Earth Day 2019. The main highlight of the event was the talk on "Air Pollution in Pakistan: Current Scenario and the Way Forward" by Prof. Dr. Gabriel Filippeli, Director of Center for Urban Health, Department of Earth Sciences at Indiana University-Purdue





University Indianapolis (IUPUI).

The event was opened by Dr. S. M. Junaid Zaidi, the Executive Director of COMSATS, who thanked the participants and noted that air pollution in Pakistan is causing serious health problems. He informed that COMSATS is establishing COMSATS Centre for Climate & Sustainability (CCCS) involving twelve of its member states.

Mr. Hassan Nasir Jamy, Secretary, Ministry of Climate Change, Government of Pakistan, in his keynote highlighted the need for having strategies to tackle urban air pollution that has increased the disease toll, especially among children. He mentioned that the problem of smog in Pakistan is being addressed with the patronage of international partners, like the World Bank. He suggested adopting measures such as tree plantation for reducing the effect of climate change.

In his talk, Prof. Dr. Gabriel Filippeli appreciated the interest of the government and other stakeholders of Pakistan towards addressing the issue of climate change. He stated that air quality varies globally from continent to continent and so are associated challenges. He enumerated

the negative effects of bad air as: susceptibility to respiratory diseases, reduction in brain cognitive functions, and reduction in the life span of an individual. He also elucidated the association of particle matter (PM) 2.5 and PM 10 with the diseases of upper and lower respiratory tract.

He pointed out that Pakistan is far behind in curbing the problem of bad air and cited the example of China where significant measures were taken during the Olympic Games to avoid bad air. In addition to funding, Prof. Filippeli considered adequate scientific knowledge and expert programmes mandatory for tackling the problem of air pollution.

The talk was followed by a discussion session moderated by Dr. Anjum Rasheed, Assistant Professor at Centre for Climate Research & Development (CCRD), COMSATS University Islamabad. During the session, a number of issues related to the theme were discussed, in addition to a few Q&As with Dr. Filippeli. In connection to the strategic and policy interventions that could be taken to remedy the situation of air pollution in Pakistan, Dr. Filippeli indicated the following important: Improvement in

fuel standards with lesser sulfur content; phasing out mal practices resulting in poor air quality incrementally; and incorporation of RETs in the energy mix as a cleaner option that would ameliorate the environment greatly. He considered photovoltaic and wind energy as viable options for Pakistan in this regard. Based on the recent research, Dr. Filippeli further highlighted the negative implications of pollution in the form of health hazards especially affecting neural, cardiac, and hepatic health that tend to affect more the already under-privileged/ low-income parts of the populace. He recommended government and civil society collaborations, whereby the data collected through cooperation may be made public for mutual trust. He believed that good real-time data on air-pollution would help in better decision making by public and government. While Dr. Filippeli appreciated the idea of academia and government in this regard, he was of the opinion that data collection and management is primarily a task of government agencies.

Director General Pak-EPA, Ms. Farzana Altaf Shah, who was also present at the talk indicated other aspects pertaining to causes, monitoring, and management of air pollution. She highlighted that in addition to what fuel is used, how it is used also determines how much air pollution it will cause. In order to incorporate better practices in fuel usage and consequent reduction of air pollution in the society, she proposed strong legislations that may include economic disincentives.

Mr. Nadeem Akbar, Director of American Institute of Pakistan Studies, closed the event with his remarks in which he recalled his institute's efforts to bring on board experts like Dr. Filippeli, as well as thanked Pakistani organizations that hosted his lectures.

Seminar on Role of Youth in SDGs marks the 1st UN day on Multilateralism and Diplomacy for Peace

COMSATS' seminar on 'The Role of Youth in the Implementation of the SDGs' held on 24th April 2019 marked the 1st UN day on Multilateralism and Diplomacy for Peace. The faculty and students from Abdul Wali Khan University (AWKU), Mardan, Pakistan and COMSATS University Islamabad (CUI) participated in the event. Mr. Vlastimil Samek, Director of United Nations Information Centre (UNIC) graced the occasion as the Chief Guest.

Speaking on the occasion, Ambassador (R) Fauzia Nasreen, Advisor (SDGs) highlighted the stakes that the youth has in SDGs and sustainable development. She laid great emphasis on equality, quality education, gender parity, employment opportunities and due engagement of youth in society. She also touched upon the pillar three and four of the Government of Pakistan's poverty alleviation strategy titled Ehsaas (human capital development, and jobs and livelihood, respectively) especially in the context of youth development.

In his address, Mr. Samek called for due commitment towards achieving SDGs at national, regional and global levels. He laid emphasis on "Partnerships for the Goals" and considered it the most important of all SDGs. Mr. Samek mentioned UN's commitment towards youth empowerment and participation. He was pleased to note that COMSATS University Islamabad is a part of UN's academic initiative.

In his remarks, Mr. Dalair Khan, Lecturer at Abdul Wali Khan University (AWKU), Mardan, appreciated the theme of the event and opined that investing in youth is investing in future. He considered the



event important due to its emphasis on SDGs and hoped for it to address key issues of gender parity and inclusion.

The main highlights of the technical session that followed were talks by Mr. Adam Koniuszewski, CEO of the Bridge Foundation, Poland; and Mr. Faran Mahmood, Acting Director and Manager (SDGs) at United Nations-SPIDER Lab at Space and Upper Atmosphere Research Commission (SUPARCO), Islamabad.

Mr. Koniuszewski shared the experience of his organization for inclusion of immigrants in society and informed how improvement in their communication abilities helped integrate them in society. He deemed youth's role in achieving sustainability and SDGs of crucial importance. He considered quality education as the most important tool for achieving the SDGs.

The technical session also featured talks of four young university students from Pakistan, Nigeria and Nepal, who delineated on various aspects of the theme of the event from youth's perspective.

In his talk, Mr. Prem Thapamagar, a Nepalese undergraduate student at COMSATS University Islamabad, emphasized engaging youth at various levels for effective implementation

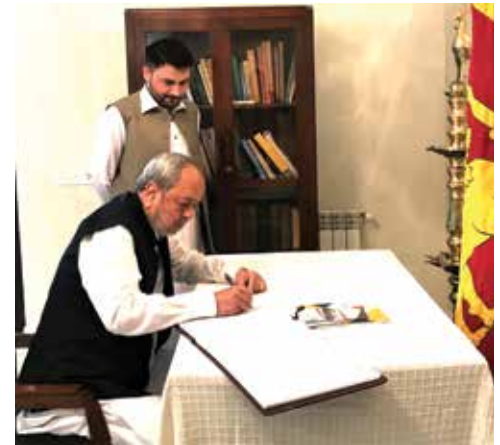
of Sustainable Development Goals (SDGs). He was of the view that youth, if provided, with the enabling environment, can effectively advocate the United Nations cause for sustainable development. Youth which comprises 24% of the world's population can also offer innovative solutions to prevailing challenges.

A Nigerian student of COMSATS University Islamabad, Mr. Anya Augustine Igwebuikwe, opined that investment in youth in areas of education, innovative skills, industrial trainings, capacity building, and leadership roles must be of prime concern of nations as it can bring about the anticipated transformations and change.

The talks were followed by interactive panel discussion that had an active participation from the audience comprising young Pakistani and foreign students. The session was moderated by Mr. Faran Mahmood.

Science Diplomacy: COMSATS to jointly Organize Science Exhibition with Pakistani Foreign Office

Under a cooperative arrangement recently forged between COMSATS and the Science Diplomacy wing of the



Pakistani Ministry of Foreign Affairs, the two organizations are planning to co-organize a Science Exhibition in collaboration with relevant partners and institutions in Pakistan, including the Higher Education Institution of Pakistan and COMSATS University Islamabad.

The event, to be held in Islamabad in the near future, would gather universities, entrepreneurs, industry, R&D institutions and organizations working in a number of fields to exhibit their R&D strengths, products, services, patents and inventions. With an overarching theme of SDGs, participation is expected in a number of fields, including health, higher education, agriculture, water, energy, food security, and environment.

With the diplomatic community and government functionaries as the major target audience, the event would serve as an interface between them, academia and R&D institutions to help understand the latter's potential in development process, as well as open avenues for possible collaboration and commercialization opportunities.

COMSATS Mourns the Victims of Easter Sunday Attacks in Sri Lanka

On April 26, 2019, the Executive

Director of COMSATS, Dr. S. M Junaid Zaidi, visited the High Commission of Sri Lanka to sign the condolence book maintained at the Commission's premises. He inked his condolence remarks in memory of the victims and all those affected by the Easter Sunday attacks on 21st April 2019. The Executive Director was received by the High Commissioner of Sri Lanka to Pakistan, H. E. Mr. Noordeen Mohamed Shahied.

Dr. Zaidi condemned the Easter Sunday attacks as a horrific event

against humanity and expressed grief over the tragic loss of lives on a holy day. Dr. Zaidi expressed solidarity and sympathy to His Excellency and assured him of COMSATS' highest regard for the Government and the People of Sri Lanka that have been a part of COMSATS' fraternity since the organization's inception.

The High Commissioner noted that Sri Lanka stands united in the face of this national tragedy and appreciated the nations' empathy towards his country.

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extended association with COMSATS will undoubtedly continue to add value to our programmes and activities.

I would also like to highlight another important milestone which involves the Scientific and Technological Research Council (TUBITAK) of Turkey. By becoming a part of the Network, the Council renders it significant strength in a number of fields.

As outlined in the opening, COMSATS is ardently pursuing the 2030 Global Development Agenda, of which the Sustainable Development Goals (SDGs) constitute an important pillar. Mindful of the crucial role of youth in the implementation of the SDGs, a seminar was organized with the participation of an international speaker, Mr. Adam

Koniuszewski. It coincided with the United Nations' Day of Multilateralism and Diplomacy for Peace with principle theme "The Role of Youth in the Implementation of the SDGs". The event also had the participation of Mr. Vlastimil Samek, Director, UNIC in Islamabad. On the occasion of the Earth Day another activity was organized. It adequately underlined the environmental, specially air and land pollution, problems and the need for better data collection and research. I am thankful to the American Institute of Pakistan Studies (AIPS) for making it possible for Prof. Dr. Gabriel Filippeli, Director of Center for Urban Health, Department of Earth Sciences at Indiana University-Purdue University Indianapolis (IUPUI), to interact with Pakistani researchers and policy makers working in the field.

SPECIAL SECTION: THE 22ND MEETING OF COMSATS COORDINATING COUNCIL, TIANJIN, CHINA

The 22nd Meeting of COMSATS Coordinating Council was successfully held on 16th - 17th April 2019 in Tianjin, China. The meeting was hosted by COMSATS' most recently inducted Centre of Excellence, the Tianjin Institute of Industrial Biotechnology (TIB), China.

The meeting was attended by the Council members or their representatives from 18 Centres in Bangladesh, China, Colombia, Egypt, Ghana, Iran, Jamaica, Kazakhstan, Nigeria, Pakistan, Palestine, Sri Lanka, Sudan, Syria, Tanzania, and Turkey.

Two officials belonging to COMSATS' international partner organizations, i.e., TWAS and UNESCO, as well as a representative of diplomatic mission of Pakistan in China also attended the meeting as observers.

Inauguration

The event was inaugurated on the morning of 16th April 2019, by H.E. Laiying Yao, Vice Mayor of Tianjin Municipal Government, China. In addition to the Council members, representatives of international partner

organizations and COMSATS' officials, the inaugural ceremony was attended by the senior officials of Chinese Ministry of Science and Technology (MoST), Chinese Academy of Sciences (CAS), other Chinese R&D organizations and universities, etc.

Mr. Laiying Yao stated that Innovation was the most important and lasting driving force for economic growth. Mr. Yao commended COMSATS' outstanding contributions towards South-South cooperation and scientific and technological development since its inception in 1994.

"In view of the overwhelming economic globalization and increasingly active transnational flow of innovative elements and resources, the world, especially the developing countries, needs to work hand in hand through mutual learning"

**– Mr. Laiying Yao, Vice Mayor ,
Tianjin Municipal Government**

In his keynote address, Prof. Dr. Ashraf Shaalan, Chairperson COMSATS Coordinating Council, recalled the

essence of COMSATS' foundation and activities, which is the promotion of South-South cooperation in S&T for facilitating socio-economic uplift of developing countries. Speaking about his own Centre of Excellence, the National Research Centre (NRC), Egypt, Prof. Shaalan informed that the Centre is actively working to implement the MoUs with other Centres of Excellence signed during the last Council meeting. It was informed that being the Chairperson Coordinating Council, Prof. Shaalan is working closely with COMSATS Secretariat for facilitating and enhancing the capacity building and cooperative activities of the Centres of Excellence.

"Creation of COMSATS' and its activities essentially aim at the promotion of South-South cooperation in the fields of science and technology to facilitate socio-economic progress in developing countries."

**– Prof. Dr. Ashraf Shaalan,
Chairperson COMSATS
Coordinating Council**





Welcoming the participants, Dr. S. M. Junaid Zaidi, Executive Director COMSATS, thanked TIB for making excellent arrangements for the meeting and extending generous hospitality to foreign participants. Dr. Zaidi considered the Belt and Road Initiative (BRI) by China an extremely important enterprise and advised the Centres of Excellence to benefit from its vast opportunities. He believed that effective South-South and Triangular Cooperation in the fields of science and technology could greatly help achieve Sustainable Development Goals (SDGs).

COMSATS is looking forward to extending the scope of its activities to all developing countries through expansion of its membership. The efforts by different Centres of Excellence for carrying out South-South cooperation related activities are laudable.

- Dr. S. M. Junaid Zaidi,
Executive Director COMSATS

In his opening remarks, Prof. Dr. Yanhe Ma, Director General, TIB, warmly welcomed the participants of the meeting and expressed his pleasure over hosting the Council meeting. He considered COMSATS as a facilitating platform for networking and scientific collaborations among developing countries and stated that the member countries could greatly benefit from COMSATS in achieving the UN 2030

Agenda. He informed that TIB had established a COMSATS' office to strengthen its links with Member States/ Centres of Excellence and for the promotion of COMSATS' mission in China. Prof. Ma further informed that TIB was developing the Technology Innovation Centre for Synthetic Biology to serve as a platform for COMSATS member states and Centres of Excellence to engage in bilateral and multilateral collaboration in the relevant fields. He offered initiating joint research projects to other Centres of Excellence in synthetic biology for industrial bio-production, advanced microbial manufacturing and advanced bioprocess engineering. He thanked the Ministry of Science and Technology, China, for sponsoring the meeting and wished the participants to have a productive conference.

Technical Deliberations

The technical deliberations comprising



of a 15-point agenda spanning over three sessions and two days were presided over by the Chairperson of the Council, Prof. Ashraf Shaalan.

After the approval of the previous meeting of the Coordinating Council, Mr. Farhan Ansari, Sr. Assistant Director (Programmes) COMSATS, briefed the Council on the implementation status of the decisions taken by the Council in its





previous meeting, while Dr. S. M. Junaid Zaidi, Executive Director COMSATS presented COMSATS' Annual Activity Report (April 2018 – March 2019).

The Coordinating Council expressed satisfaction on the implementation status of the decisions of last Council meeting, annual activity report (2018-19) and future plans.

The Heads/representatives of the Centres of Excellence made presentations on their activities related to South-South and Triangular Cooperation during last one year, including the ongoing interaction and collaboration with other Centres of Excellence, as well as future plans for COMSATS' Network. The progress reports on COMSATS' International Thematic Research Groups were also shared by the respective Lead Centres. The Lead Centres and collaborating institutions of ITRGs were encouraged to continue their research activities for the benefit of COMSATS' Member States and may jointly submit project proposals to international donor agencies for seeking financial support for the projects.

The representatives of TWAS and UNESCO also made presentations, in which they highlighted the ongoing programmes and activities of their respective organizations as well as possibilities of support and collaboration with COMSATS.

A key decision taken during the meeting was the induction of Prof. Dr. Ashraf Shaalan (Egypt) as Honorary

Lifetime Member of Coordinating Council, and his re-election as Chairperson Coordinating Council

for another term of three years (2019 - 2022). Furthermore, the Scientific and Technological Research Council

Members of the Council or their Representatives and other Participants

- **Prof. Dr. Ashraf Shaalan, Chairperson Coordinating Council**
- Dr. Md Sarwar Jahan, Chief Scientific Officer, Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh
- Prof. Lin Zhaohui, Director, International Center for Climate and Environment Sciences (ICCES), China
- Prof. Dr. Yanhe Ma, Director General, Tianjin Institute of Industrial Biotechnology (TIB), China
- Prof. Jibin Sun, Deputy Director-General, Tianjin Institute of Industrial Biotechnology (TIB), China
- Ms. Qianqian Chai, Officer of Foreign Affairs and Academic Exchange, Tianjin Institute of Industrial Biotechnology (TIB), China
- Dr. Eduardo Posada F., Director, Centro Internacional de Fisica, Colombia
- Prof. Hosam El-Sayed, Assistant Vice President for Research, Head of Proteinic and Man-Made Fibres Department, Professor of Textile Chemistry and Technology, National Research Centre (NRC), Egypt
- Prof. Dr. Victor Agyeman, Director-General, Council for Scientific and Industrial Research (CSIR), Ghana
- Dr. Foad Farhani, Acting President for International Cooperation, Iranian Research Organization for Science & Technology (IROST), Iran
- Mrs. Sandra Hunter, Director of Finance and Administration, International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica
- Prof. Dr. Tlekkabul Ramazanov, Vice-Rector for Research & Innovations, Al Farabi Kazakh National University (KazNU), Kazakhstan
- Prof. Stephen E. Onah, Director/Chief Executive, National Mathematical Centre (NMC) Nigeria
- Prof. Dr. M. Iqbal Choudhary, Director, International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- Prof. Dr. Raheel Qamar, Rector, COMSATS University Islamabad (CUI), Pakistan
- Prof. Dr. Imad F. S. Abukishek, President, Al-Quds University, Palestine
- Dr. J. K. R. R. Samarasekara, Director General, Industrial Technology Institute (ITI), Sri Lanka
- Dr. Widad Hassan Abdel Halim Hassan, Director General, Industrial Research and Consultancy Centre (IRCC), Sudan
- Dr. Maher Suleiman, Director, Higher Institute for Applied Science and Technology (HIASST), Syria
- Dr. Lugano Wilson, Director of Engineering Development and Head, Energy Technologies Division, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania
- Dr. Murat MAKARACI, Acting Vice President, Strategy, Technology & Corporate Development, TUBITAK Marmara Research Center (MAM), Turkey
- Dr. Max Paoli, Programme Coordinator, The World Academy of Sciences (TWAS), Italy
- Ms. Marielza Oliveira, Director, UNESCO's Office, China
- Dr. Ata ur Rahman, Counsellor of Scientific & Technical Affairs, Embassy of Islamic Republic of Pakistan in Beijing, China
- Dr. S. M. Junaid Zaidi, Executive Director COMSATS Secretariat
- Mr. Bilal Chohan, Director (A&E), COMSATS Secretariat
- Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS Secretariat

Collaborations Offered and Sought

- **BCSIR-Bangladesh:** Offered collaborative research in nanotechnology, renewable energy, food safety, essential oil, industrial surfactant, herbal medicine and medicinal plant, biotechnology, biomedical, leather/shoe technology, biomaterials, biochemical and bio-fuel (bio-refinery), materials and metallurgical science and engineering; sought support in the areas of genomic research, bio-equivalence studies and pharmaceuticals science, biomedical and dielectric material
- **ICCES-China:** Invited scientists from other CoEs to participate in its forthcoming capacity building events on Aerosol and Climate Change.
- **TIB-China:** Expressed interest in initiating collaboration for joint R&D projects supported by the Belt and Road Programs, social capitals and industry; symposia and conferences; joint trainings (researchers exchange, MS and PhD scholarships, post-doctoral fellowships); and bi-directional technology transfer.
- **CIF-Colombia:** Offered expertise in environmental and climate change policies, science policy, rational use of energy and climate change, and development of solutions for industrial problems
- **NRC-Egypt:** Mutual collaboration with TIB-China offered in the following fields: green technologies to promote the traditional textile industries, construction of fungal cell factory from chemical production from biomass, inositol production from starch via in-vitro synthetic enzymatic biosystems, biotechnologically-propagated mulberry cultivation, sericulture, and textile products
- **CSIR-Ghana:** Collaboration in the following fields: food security & poverty reduction; biotechnology & biomedical science; materials, environment & manufacturing; electronics & ICT; science & people / technology for society; energy & petroleum; and climate change & environmental conservation
- **IROST-Iran:** Offered mutual collaboration with CUI-Pakistan in cyber security; offered to extend research and technological cooperation in water technologies such as desalination and waste water treatment and improved water utilization in various sectors (SDG6); innovative technologies for sustainable development and utilization of clean/renewable energy resources (SDG7); sustainable environment such as controlling dust storms and reduction of greenhouse gases; issues related to food security & health improvement; and development of Biotechnology for applications in various sectors. IROST-Iran pledged to provide advanced technological and vocational training opportunities to researchers, university staff and technical manpower in related areas of interest/need.
- **ICENS-Jamaica:** Collaboration offered in the following areas: environmental geochemistry protection, greenhouse emission and its mitigation, trace elements in air particulate matter, heavy metal pollution in Jamaica, biogeochemical cycles, forensics, food safety, cyber security, renewable energy, and waste water treatment/management
- **NMC-Nigeria:** Offered mutual collaboration with CUI-Pakistan for scientific activities, exchange of staff/scientists and students for the period between 1-3 months
- **CUI-Pakistan:** Collaboration extended for student & faculty exchange, hybrid teaching, joint research projects, and student supervision.
- **AQU-Palestine:** Sought collaboration in the fields of biotechnology, environment, agriculture, health and medicine, and green energy; and offered to collaborate with other Centres for exchange programs, knowledge transfer through the development of master and PhD programs, and training on applied sciences and advanced technologies.
- **ITI- Sri Lanka:** Collaboration offered in medicinal & aromatic plants, spices and essential oils, food technology, minerals, and accredited technical services; offered partnership for commercialization of technologies and establishment of incubation facility
- **IRCC-Sudan:** Showed interest in launching of tele-health program in Sudan; offered to establish joint research laboratories.
- **HIAS-Syria:** Pledged to follow-up the potential joint cooperation with TIB-China
- **TIRDO-Tanzania:** Offered technology transfer in the fields of agro processing, industrial technologies, coal and mining, among others. The Organization expressed willingness to participate in COMSATS' ITRG on Mathematical Modeling
- **TUBITAK MAM-Turkey:** Invited other Centres to benefit from and collaborate with its Biomaterials, Biomechanics and Bioelectronics (3B) Center of Excellence
- **ICCES-China, KazNU-Kazakhstan, IRCC-Sudan and TIRDO-Tanzania:** expressed interest in participating in COMSATS Centre for Climate and Sustainability (CCCS)



of Turkey (TUBITAK) was designated as COMSATS' Centre of Excellence in place of TUBITAK Marmara Research Centre (MAM), Turkey. Due to this development, all of the research institutes under TUBITAK have come under the ambit of the Coordinating Council.

The Council also appreciated the nomination of the Food and Nutrition Research Institute (FNRI) and Philippine Textile Research Institute (PTRI) by the Government of the Philippines for induction in COMSATS Network.

The Council was pleased to learn that COMSATS' delegation led by Prof. Dr. Ashraf Shaalan had a productive meeting with the honourable

Chairperson of COMSATS, President of Ghana, during which His Excellency's guidance was sought regarding the ongoing and future activities of the organization.

The Council members also deliberated upon the ongoing programmes of COMSATS, including Scholarships, Post-doctoral Fellowships (Last Page), Tele-health Programme, capacity building activities, publications, etc.

The Council appreciated the efforts being made by COMSATS to establish new Centres of Excellence and Universities in the Member States in the cutting-edge fields of science and technology for addressing their socio-economic needs. They were especially

pleased to learn that eleven Member States have so far agreed to participate in the COMSATS Centre for Climate and Sustainability (CCCS) network and extend support for the success of this important initiative. The Council agreed that CCCS will enhance capacity of COMSATS member countries as well as other developing countries in addressing challenges related to climate change that directly impact the areas of agriculture, water, health, etc.

Subsequently, Mr. Bilal Chohan, Director (A&E) COMSATS, presented the Administrative and Financial Matters of COMSATS, which were endorsed by the Coordinating Council. Moreover, the Council discussed matters related to financial sustainability of the organization and encouraged all Network members to sensitize their respective governments regarding the importance of regularly making annual membership contribution. The next meeting of the Coordinating Council will be hosted by the International Centre for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, during the first half of 2020. The meeting Communiqué (Page 13) encapsulated the resolve of the Council with regard to COMSATS' activities in the preceding and proceeding months.



Concluding Ceremony

Prof. Dr. Jibin Sun, Deputy Director General, TIB, formally closed the event and expressed pleasure on successfully hosting the meeting. Prof. Shaalan thanked TIB for hosting the meeting and pledged to continue working closely with COMSATS Secretariat for achieving the objectives of COMSATS Network. Speaking on the occasion, Dr. Zaidi, inter alia, thanked TIB for excellent arrangements for the meeting and congratulated Prof. Shaalan on his re-election as Chairperson Coordinating Council.

Visit to TIB Laboratories

Availing the opportunity of being at one of the Chinese Centres of Excellence, the participants of the Council meeting visited the laboratories of TIB on the morning of 18th April 2019. Prof. Jibin Sun gave introduction on the laboratories and facilities of the institute, which include: National Engineering Laboratory for Industrial Enzymes; Laboratory of Systems Microbial Biotechnology; Laboratory for Industrial Biological Systems and Bioprocessing Engineering; and Tianjin Engineering Center for Biocatalytic

Technology. Faculty members at TIB made presentations to show the impact made by the Institute for sustainable development of China. The visitors took great interest in the technologies and products developed by TIB, and had in-depth exchanges with the scientists of the Institute.

The visit encouraged the Council Members to further strengthen communication and exchanges with TIB and help promote bilateral and multilateral cooperation among COMSATS' member states in the field of biotechnology.

Statements/ Presentations on Belt and Road Initiative of China

China's Action Plan for the Belt and Road Science, Technology and Innovation Cooperation consists of 4 actions: people-to-people exchanges, build joint laboratories, science park cooperation and technology transfer. During next five years, China will host 2,500 young scientists for short-term scientific research, train 5,000 scientific, technical and management personnel, and establish 50 joint laboratories under the project. The countries of COMSATS and the Centers of Excellence can benefit from these opportunities. China is willing to work with COMSATS member countries in the fields of mutual interest for ensuring a more prosperous future.

Mr. Linhao Chen, Deputy Director-General, Department of International Cooperation, Ministry of Science and Technology, China; Presentation on China's Action Plan for the Belt and Road Science

Belt and Road Initiative is based on cooperation, respect and friendship. In BRI project, science is a key to provide possible solutions to many of the common challenges. CAS attaches great importance to international cooperation and works closely with partner organizations around the world. The Alliance of International Science Organizations (ANSO) is an international S&T non-governmental organization and is the first International Science Forum of National Scientific Organizations on the Belt and Road Initiative. ANSO aims at promoting sustainable socio-economic development in the Belt and Road Region, and will be a platform for catalyzing regional and global collaborations in Science, Technology, Innovation and Capacity building. ANSO shall facilitate in uniting the common scientific resources and wisdom in the grand mission of providing science-based inputs and assistance to support global, regional and national development.

Dr. Yin Li, Deputy Director-General, Bureau of International Cooperation, Chinese Academy of Sciences (CAS), China

Communiqué of the 22nd Meeting of COMSATS Coordinating Council (16-17 April 2019, Tianjin, China)

The participants of the 22nd meeting of COMSATS Coordinating Council, including the representatives of eighteen Centres of Excellence, deliberated upon the fifteen-point agenda of the meeting during 16-17 April 2019, and are pleased to unanimously adopt the following:

- The Coordinating Council appreciates the excellent arrangements made by the Tianjin Institute of Industrial Biotechnology (TIB) for the 22nd Council meeting and for providing generous hospitality to its participants. The preparation of necessary documentation by COMSATS Secretariat and the administrative support provided to TIB for the successful organization of the meeting is praiseworthy.
- The Council is grateful to the representatives of the Chinese Ministry of Science and Technology as well as Chinese Academy of Sciences for briefing on the key activities and action plan of the Chinese government under Belt and Road Initiative (BRI). The Centres of Excellence are urged to benefit from the opportunities of collaboration and funding available under this initiative.
- The Council pays gratitude to the Government of China for increasing its Annual Membership Contribution (AMC) to COMSATS from US\$ 20,000/- to US\$ 50,000/-.
- The outstanding leadership provided by Prof. Dr. Ashraf Shaalan as the Chairperson of the Council during the period (2016 – 2019) and his services for the cause of COMSATS are duly acknowledged and highly applauded.
- The Coordinating Council is pleased to elect Prof. Dr. Ashraf Shaalan, as its Chairperson for another term of three years (2019 - 2022), and hopes that he will be able to provide a new thrust to the COMSATS' Network with regard to achieving its objectives.
- The Council is delighted to learn that a delegation of COMSATS Headquarters led by Prof. Dr. Ashraf Shaalan, Chairperson Coordinating Council, had a very productive meeting with the honourable Chairperson of COMSATS, President of Ghana. The guidance of the honourable Chairperson would enable the organization to achieve its mission and objectives. The COMSATS Secretariat is advised to keep close contact with the office of the Chairperson to receive guidance regarding the on-going and future programmes of COMSATS, from time to time.
- The Council warmly welcomes the Republic of Yemen as the 27th Member State of COMSATS. It is hoped that Yemen will actively participate in the programmes and activities of the organization. In this regard, request will be made on behalf of the Council to the Government of Yemen to nominate one of its renowned R&D organizations, for induction in COMSATS' Network of Centres of Excellence. The consistent efforts being made by COMSATS Secretariat for extending COMSATS' membership to other developing countries is noted with approbation.
- The Council welcomes the designation of the Scientific and Technological Research Council of Turkey (TUBITAK) as COMSATS' Centre of Excellence. The addition of TUBITAK and its 15 research institutes has further added strength to COMSATS' Network. TUBITAK is expected to play a significant role in the achievement of COMSATS' objectives.
- The Council appreciates the nomination of the Food and Nutrition Research Institute (FNRI) and Philippine Textile Research Institute (PTRI) by the Government of the Philippines for induction in COMSATS Network. The endeavour would now be to complete the necessary formalities for induction of the nominated institutes in COMSATS' Network before the next Council meeting. COMSATS Secretariat is encouraged to continue its efforts to extend the membership of COMSATS' Network to all Member States.
- The Council appreciates the efforts being made by COMSATS to establish new Centres of Excellence and Universities in

the Member States in the cutting-edge fields of science and technology for addressing their socio-economic needs. The Centres of Excellence and international partner organizations are requested to play a facilitative role in this regard.

- The activities undertaken by Centres of Excellence during the period since the last Council meeting are highly appreciated.
- The Council while recognizing the significance of the linkages between climate change and sustainable development is pleased to note with appreciation the progress made with regard to the establishment of COMSATS Centre for Climate and Sustainability (CCCS). The Council expressed appreciation that eleven Member States have so far agreed to participate in the CCCS network and urges other Member States to join COMSATS Centre for Climate and Sustainability and extend support for the success of this important initiative.
- The Council recognizes that South-South cooperation and triangular cooperation enable developing countries to achieve sustainable development through close cooperation. It is heartening to note that the work and activities of the Centres of Excellence are aligned with the SDGs. The Centres of Excellence are encouraged to strengthen collaboration and partnership for the realization of the Sustainable Development Goals (SDGs) in the framework of the 2030 Agenda for Sustainable Development.
- The Council is pleased to learn that COMSATS Secretariat is making preparations to hold the 4th Consultative Committee Meeting (June 2019, Turkey) and 4th General Meeting of the Commission (August 2019, Ghana). The Centres of Excellence are requested to provide inputs for the afore-mentioned meetings, as well as to share joint proposals for projects and programmes to be considered during these meetings for support/funding.
- The Council appreciates the standing offer of 100 postgraduate scholarships made by CUI-Pakistan; and the post-doctoral fellowships offered by NRC-Egypt, ICCBS-Pakistan and BCSIR-Bangladesh. While this effort should be continued, other Centres of Excellence may beneficially make use of these opportunities.
- The Lead Centres and collaborating institutions of ITRGs are encouraged to continue their research activities for the benefit of COMSATS' Member States. They may jointly submit project proposals to international donor agencies for seeking financial support for the joint research projects.
- The payment of AMC by Pakistan, Sri Lanka and Jamaica during the period since the last Council meeting is also noted with appreciation. The Council encourages all other Network members to sensitize their respective governments regarding the importance of regularly making AMC for the financial sustainability of COMSATS.
- The Council appreciates the following efforts/achievements of COMSATS Secretariat with regard to fulfilling the objectives of the organization:
 - i. Continuous expansion of COMSATS Member States and Centres of Excellence;
 - ii. Steady growth of COMSATS flagship projects, i.e., COMSATS University Islamabad (CUI), COMSATS Internet Services (CIS) and COMSATS Telehealth Programme;
 - iii. Organization of six (06) capacity building events in collaboration with Centres of Excellence and international partner organizations, which benefited the scientists, researchers, academicians, engineers and technicians belonging to the Member States;
 - iv. Increased interaction and collaboration among the Centres of Excellence for the exchange of human and technological resources;
 - v. Outreach to the institutions of the North and conclusion of various MoUs/Agreements;
 - vi. Regular publication of COMSATS' Annual Report, Newsletter and other information material. The inputs and support of the Centres of Excellence in this regard is highly appreciated.
- The Council accepts and highly appreciates the offer made by ICCBS-Pakistan to host the next (23rd) Meeting of COMSATS Coordinating Council in Karachi, Pakistan, during March/April 2020.

SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

Workshop on Social Entrepreneurship in the MENA Region: Inclusiveness and Growth held at RSS-Jordan

On 17th April 2019, the Royal Scientific Society (RSS), Jordan, hosted the Workshop on Social Entrepreneurship in the MENA Region: Inclusiveness and Growth. The event was organized under the patronage of HRH Princess Sumaya bint El Hassan, President of the RSS, in collaboration with iPARK, Forum EuroMéditerranéen des Instituts de Sciences Economiques (FEMISE) and CASE (Center for Social and Economic Research). The Workshop was held with the objective to address the issues of social entrepreneurs (SE) in the MENA region and the roles of actors in supporting financially and technically these initiatives in addition to the role of social entrepreneurship in improving the livelihood of refugees and host communities.

Speaking on the occasion, Her Royal Highness highlighted the importance of social enterprises in the Jordanian landscape, and of institutional cooperation towards building a supportive environment.

The Workshop was attended by different stakeholders including supporting institutions, international organisations, private sector,

researchers and social entrepreneurs. The participants discussed a number of issues related to the role of social entrepreneurship in the region which, inter alia, include: the potential contribution towards solving some of the most pressing issues in the MENA countries, including the case of the Refugees crisis in Jordan and Lebanon; the applicability of different Social Entrepreneurship business models in the region; creating an enabling environment that facilitates their most efficient and effective operations; and ways in which cross-country and cross-regional cooperation can induce a virtuous circle for the emergence of Social Entrepreneurship ecosystems in the MENA region.

RSS-Jordan Elected to Executive Board of IAP for Science

The Royal Scientific Society (RSS) has been elected to become a part of the Executive Committee of InterAcademy Partnership (IAP) for Science during IAP Triennial Conference held in Seoul, Korea. RSS has been awarded one of eleven places on the IAP for Science committee, in recognition of its contributions to global science engagement and its support for the activities of IAP, particularly through organizing and hosting World Science Forum 2017.

Currently, RSS also holds a seat on the executive committee of IAP for Policy, which is another of the three IAP pillars.

ICCBS-Pakistan Inks MoU with a Chinese Hospital and Pakistani Engineering University

The International Centre for Chemical and Biological Sciences (ICCBS), Pakistan, and the Southwest Medical University Hospital (HASMU), China, signed a Memorandum of Understanding (MoU) on March 27, 2019, for cooperation in the field of traditional medicine. Under this MoU, both sides will exchange research staff and R&D faculties.

Another MoU was signed by ICCBS with a local Higher Education Institute, the Khawaja Fareed University of Engineering and Information Technology (KFUEIT), that entails cooperation in sharing analytical facilities for research in synthetic organic and natural products chemistry.

ICCBS-Pakistan and KazNU-Kazakhstan Open Joint Lab on Innovation in Natural Products

The first "Joint Laboratory for Innovation in Natural Products Research and Development" was inaugurated at the International Center for Chemical and Biological Sciences (ICCBS), Pakistan, on March 05, 2019. The laboratory has been jointly established by ICCBS and Al-Farabi Kazakh National University (KazNU), Kazakhstan.

Prof. Dr. Tlekkabul Ramazanov, Vice-Rector of Science and Innovations, KazNU; Prof. Dr. Zharylkassyn Abilovov, KazNU; Mr. Tajammul Hussain, Advisor (Programmes) COMSATS Secretariat; Prof. Dr. Tabassum Mahboob, Dean Faculty of Sciences, University of





Karachi; Prof. Dr. Muhammad Iqbal Choudhary, Director of ICCBS; Mr. Aziz Latif Jamal, Chairman Hussein Ibrahim Jamal Foundation; and other officials expressed their views during the inauguration. A Memorandum of Understanding (MoU) between ICCBS and KazNU was also signed after the laboratory inauguration.

STEP5 Conference held at ICCBS-Pakistan

The 5th Science and Technology Exchange Program (STEP5) Conference was held by the International Center for Chemical and Biological Sciences (ICCBS), Karachi, in collaboration with the Mustafa Science and Technology Foundation (MSTF), Iran, at ICCBS from 28th February – 2nd March 2019. The 3-day conference was held with the theme “Health Challenges of Communicable Diseases (CDs) and Non-Communicable Diseases (NCDs)” with an emphasis on female scientists’ contribution in future global village.

The conference comprised of scientific and technological panels, STEP talks, round tables, keynote addresses and invited talks focusing on the areas of influential actions to overcome health-related challenges lying in the Islamic World, and latest development to

overcome challenges arising from CDs and NCDs in the Islamic countries. Over 500 eminent scientists from 40 countries participated in the Conference.

Director, ICCBS-Pakistan Awarded with Honorary Doctorate Degree by KazNU

In recognition of his extraordinary and outstanding scientific achievements in the field of organic chemistry and natural products chemistry, Prof. Dr. Muhammad Iqbal Choudhary, Director, ICCBS, was awarded the title of Al-Farabi KazNU Honorary Doctor by Al-Farabi Kazakh National University (KazNU), Kazakhstan, in a ceremony held at the University on 2nd April 2019.

Prof. Choudhary’s career includes 1098 research papers, 51 patents, a cumulative impact factor of 2120 and 2300 citations, as well as a number of national and international awards and honours.

Standard Tests for Non-Metallic and Stainless Steel Products launched by TÜBİTAK-MAM

TÜBİTAK Marmara Research Center (MAM) Environment and Cleaner Production Institute has launched BS Standard Tests on “Non-metallic”

and “Stainless Steel” Products. The standard test for non-metallic products concerns the evaluation and reporting on suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water. On the other hand, the standard test on stainless steel products provides evaluation of the passive behavior of stainless steels.

Immuno-Affinity Columns (AFLAMAM) developed by TÜBİTAK-MAM

As part of a project partnered by Genetic Engineering and Biotechnology Institute of TÜBİTAK Marmara Research Center (MAM) and the Turkish Ministry of Agriculture and Forestry, TÜBİTAK MAM has developed “AFLAMAM Immuno-Affinity Columns for Aflatoxin Analyses” from natural resources. The columns have been developed in response to the need of the Turkish Ministry of Agriculture and Forestry for mycotoxin analyses.

CUI-Pakistan Awarded For Excellence in Higher Education

The Cambridge IFA and UK has awarded COMSATS University Islamabad (CUI) the Global Good Governance (3G) Award for Excellence in Higher Education on 15th March 2019, in Jakarta, Indonesia. 3G is a premier awards programme that highlights excellence in good governance and commitment to social welfare in major streams of government and politics, corporate and social sectors and philanthropy.

CUI-Pakistan Enhances Cooperation in Higher Education

The Ambassador of Egypt to Pakistan,



H.E. Mr. Ahmed Fadel Yacoub, visited CUI on 12th March 2019, with a view to explore avenues of collaboration in the field of higher education. In the meeting held with Prof. Dr. Raheel Qamar, Rector of CUI, it was agreed that in order to promote bilateral cooperation, high-level officials from 8-10 Egyptian universities shall visit CUI.

In the similar vein, a four-member delegation from Tsinghua University (TU), China, visited COMSATS University Islamabad (CUI) on March 20, 2019. During the visit, both sides agreed to strengthen linkages, collaboration and engagements in academia.

A Swedish delegation led by H.E. Ms. Ingrid Johansson, Ambassador of Sweden to Pakistan, visited CUI on April 2, 2019, with a view to promote exchange of faculty and students between CUI and Swedish universities. Dr. Hans Pohl, Program Director, Swedish Foundation for International Cooperation in Research and Higher Education (STINT), urged CUI to benefit from the STINT's portfolio, which included grants and scholarships for start-up and dual degree programs, teaching sabbaticals besides funding for enhancing research cooperation and support for internationalizing the University.

On April 26, 2019, Ms. Aila Khan, Senior Lecturer and Academic Course Advisor at Western Sydney University, Australia, visited COMSATS University Islamabad (CUI) with a view to further the already established collaboration between CUI and Western Sydney University. Along the same line, a 12-member delegation from Kabul Polytechnic University, Rana University and officials from Ministry of Foreign Affairs of Afghanistan also visited CUI.

IROST-Iran Holds 32nd Al Khwarizmi International Award

On March 04, 2019, the Iranian Research Organization for Science & Technology (IROST) held the 32nd Al Khwarizmi International Award ceremony. The Award is conferred annually to researchers, inventors and innovators from all over the world in recognition of their outstanding scientific achievements.

Out of 271 Iranian and 111 foreign researchers from 40 countries across the world, 16 were conferred the Award. COMSATS has been sponsoring the cash prize and certificates of the first and second prize winners of the Award since 2000. This year's first and second prizes worth US\$ 1,500 and US\$ 500 were granted to Dr. Mohammad Durali

and Mr. Hamid Raza Nasiri, respectively.

AQU-Palestine Wins the First Place in Hult Prize Regional Summit 2019

A "Clear E Care" team of Al-Quds University, Palestine, won the first place in the Palestinian Hult Prize Summit 2019 held under the sponsorship of Palestinian Higher Council for Youth and Sports (HCYS). The Summit had the participation of 32 teams from different local universities.

The team comprising of Samah Ayyad, Lotfi Al-Atrash, Rola Odeh, and Ahmed Touqan, presented their pioneer project with the idea of creating a new sterilization system for medical clothing. Based on the results of the contest, the "Clear E Care" team will represent Palestine in the London Business Accelerator, the Hult Prize Castle.

TIRDO-Tanzania Signs MoU to Support Agro-Processors

The Tanzania Industrial Research and Development Organization (TIRDO), Tanzania, signed a Memorandum of Understanding (MoU) with Tanzania Agricultural Development Bank Ltd (TADB) for cooperation in building technical capacity of farmers' groups and agro-processors. Prof. Mkumbukwa Madundo Angelo Mtambo, Director General, TIRDO, and Mr. Japhet Justine, Managing Director, TADB, signed the MoU on behalf of their Organizations. Collaborating under the agreement, both sides will ensure the availability of agro-services to farmers' associations, agro-processors and other players in agriculture production. Both sides will also facilitate development of a knowledge database and network with adequate agro-industrial information to facilitate informed decisions at the policy and implementation levels.

S&T AND DEVELOPMENT NEWS FROM MEMBER STATES

Ghanaian Team Bags Africa Biodiversity Challenge Award

A Ghanaian consortium focusing on nature conservation won the African Biodiversity Challenge (ABC) Award in Accra, Ghana, on March 28, 2019 (Ghana web, 1st April 2019). ABC is a regional initiative being managed and implemented by Sanbi in collaboration with Global Biodiversity Information Facility and other project partners. The Initiative seeks to mobilise data on thematic areas relevant to the country's reporting and economic processes, thus incorporating the value chain of primary data in information management and decision-making.



Picture: PATRICK DICKSON

The Consortium, comprising of the Conservation Alliance International, a Rocha Ghana, Ghana Biodiversity Information Facility of the University of Ghana, and the Council for Scientific and Industrial Research (CSIR), gathered 23,932 foundation data on nature including pollinators, forestry, food crops and class of animals.

Tunisia to Launch its First Satellite

A Tunisian company TELNET entered into an Agreement with GK Launch Services of Russia for launch of the Challenge ONE satellite on board a Russian Soyuz-2.1, a launch vehicle integrated with the Fregat upper stage in 2020. Mr. Mohamed Frikha, CEO of TELNET Group, and Mr. Alexander V.



Executives from Tunisian company Telnet and from GK Launch Services at the signing of their contract in Tunis on 1 April 2019. Photograph courtesy of Telnet)

Serkin, CEO of GK Launch Services, signed the Agreement at the Sfax Digital Research Centre, Tunisia on April 01, 2019 (Spacewatch, 1st April 2019).

Tunisia's Challenge ONE is a scientific research and innovation project offering new concepts in information technologies and their practical applications. The results of the Challenge ONE in-orbit operation will be used for building a future constellation of 30 communication satellites.

MIT to establish Center of Excellence in Energy at Ain Shams University, Egypt

U.S. Agency for International Development (USAID) has granted the Massachusetts Institute of Technology (MIT) an award of US \$30 million for developing a Center of Excellence in Energy at Ain Shams University, Mansoura University, and Aswan University, in Egypt (MIT News, 27th March 2019). The center will serve to connect researchers at the Egyptian universities with experts at MIT, to seek innovative solutions to the country's energy challenges.

The Center of Excellence in Energy is one of three centers to be established in Egypt and funded by USAID through a total investment of \$90 million. The centers are formal partnerships between

Egyptian and American universities and the private sector to foster research, scholarships, and innovation in agriculture, energy, and water. In addition to the MIT-led center, Cornell University, New York, will partner with Cairo University, and the American University, Washington DC will partner with Alexandria University in Cairo, to form comparable centers to address challenges in the areas of agriculture and water, respectively.

Drones to Deliver Medicines in Ghana

The Government of Ghana has launched medical drone delivery service which will be delivering life-saving vaccines, blood and medicines to patients in marginal parts of Ghana (Africa News, 24th April 2019). The orders placed by medics through text message will activate the drones in four distribution centres which will then drop deliveries using tiny parachutes.

The project is led by a California-based robotics company, Zipline, with the patronage of non-profits Global Alliance for Vaccines and Immunization (GAVI) and the Bill & Melinda Gates Foundation, as well as several companies including the parcel delivery firm UPS and the pharmaceutical giant Pfizer. Initially, the drones are intended to make up to 600 on-demand delivery flights a day which will subsequently can extended up to 2,000 per day. The drones fly autonomously arriving within 30 minutes and can carry up to 1.8 kilograms of cargo.

The projects aims to deliver medicines to around 2,000 health facilities serving 12 million people across Ghana. Up to 12 routine and emergency vaccines will be available, including shots for yellow fever, polio, measles, meningitis and tetanus, as well as 148 blood products and other critical medicines.

SCIENCE, TECHNOLOGY AND DEVELOPMENT

Renewable Energy Options from Seawater and a Peltier Element

A team of researchers from Stanford University have devised a way to generate hydrogen fuel using solar power, electrodes and saltwater from San Francisco Bay (Science Daily, 18th March 2019).

Splitting water into hydrogen and oxygen presents an alternative to fossil fuels, but pure water is a precious resource. The research will pave way to harness seawater for chemical energy, while using the worsening climate change problems.



Credit: H. Dai, Yun Kuang, Michael Kenney

On the other hand, an amazingly simple device that allows heat to flow temporarily from a cold to a warm object without an external power supply has been developed by a physicist at the University of Zurich (Innovation Toronto, 21st April 2019).

The researchers used a Peltier element, a component commonly used, for example, to cool minibars in hotel rooms to achieve this result. These elements can transform electric currents into temperature differences. It functions in the same way as an electrical oscillating circuit, in which the voltage oscillates with a constantly changing sign.

Breakthrough in Air Purification with a Catalyst that Works at Room Temperature

A team of researchers from Tokyo Metropolitan University have demonstrated a newly engineered catalyst made of gold nanoparticles supported on a metal oxide framework that can breakdown ammonia impurities in air with excellent selectivity for conversion to nitrogen gas (Phys.org, 25th March 2019). Thus, the team of researchers has successfully identified the mechanism behind this behavior, paving the way towards the design of other novel catalytic materials. They collaborated with industrial partners from NBC Meshtec Inc. to produce a working prototype; the filter has already been applied to reduce gases contaminated with ammonia to undetectable levels. The catalyst is effective at room temperature and hence suitable for everyday air purification systems.

First-ever computer-generated genome, and a biosynthetic dual-core cell computer

A team of scientists from ETH Zurich have created a bacterial genome entirely by using a computer algorithm (European Scientist, 3rd April 2019). The new genome, named *Caulobacter ethensis-2.0*, is not a living organism but exists as a bundle of DNA.

The scientists radically simplified the genome sequence without modifying the actual genetic information. There is ample latitude for the simplification of genomes, because biology has built-in redundancies for storing genetic information. The algorithm developed by the scientists at ETH Zurich makes optimal use of this redundancy of the genetic code.

Researchers from ETH Zurich have integrated two CRISPR-Cas9-based core processors into human cells. This gives light towards creating powerful bio-computers (Science Daily, 16th April 2019). Controlling gene expression through gene switches based on a model borrowed from the digital world has long been one of the primary objectives of synthetic biology. The digital technique uses what are known as logic gates to process input signals, creating circuits where, for example, output signal C is produced only when input signals A and B are simultaneously present. A cell computer could be used to detect biological signals in the body, such as certain metabolic products or chemical messengers, process them and respond to them accordingly.

New Technique to Test for Viral Infections

Team of researchers from Colorado State University has developed technology that can detect extremely small amounts of antibodies in a person's blood (Colorado State University, 8th April 2019).

Antibodies were developed to infect cells or kill pathogens, essentially fighting off a bacteria or virus. The levels of antibodies in the blood can tell whether that person is sick. The researchers used a small wire that is one-fourth the size of a human hair, to develop a cost effective sensor that can detect as few as 10 antibody molecules within 20 minutes.

Standard medical testing and practices, requires billions or trillions of antibody molecules for detection and can take up to a day to process. Furthermore, the researchers pointed out that this type of device could also be used in agricultural settings for livestock disease surveillance and environmental sensing.

Scholarships offered by COMSATS' Centres of Excellence for Member States

Students from COMSATS' Member States are welcome to benefit from the following offers from COMSATS' Centres of Excellence:

- Hundred (100) scholarships for students/researchers for postgraduate studies at all campuses of COMSATS University Islamabad (CUI), Pakistan.
- Five (05) post-doctoral fellowships at the International Center for Chemical and Biological Science (ICCBS), Pakistan.
- Five (05) post-doctoral fellowships at the National Research Centre (NRC), Egypt.
- Postgraduate Scholarships and Post-doctoral Fellowships at International Centre for Climate and Environment Sciences (ICCES), and Tianjin Institute of Industrial Biotechnology (TIB), under PIFI programme.
- One (01) post-doctoral fellowship at Bangladesh Council for Scientific and Industrial Research (BCSIR), Bangladesh.
- Five (05) Ph.D scholarships at Al-Farabi Kazakh National University (KazNU), Kazakhstan.

For further details on the scholarships, please visit www.comsats.org or write to tajammul@comsats.org and farhan@comsats.org.

Selected Forthcoming Scientific Events in COMSATS' Countries

- 1-3 August 2019 3rd International Conference on Artificial Intelligence Applications and Technologies (AIAAT 2019), Beijing, China (<http://www.aiaat.org/>)
- 26 August 2019 International Conference on Pollution Control & Sustainable Environment (ICPCSE-19) Khartoum, Sudan (<https://www.sciencesociety.co/conf/index.php?id=1039225>)
- 12-13 Sept. 2019 ISER-658th International Conference on Nanoscience, Nanotechnology & Advanced Materials (IC2NAM), Cairo, Egypt (<http://iser.co/Conference2019/Egypt/2/IC2NAM/>)

COMSATS Network of Centres of Excellence



BCSIR-Bangladesh
www.bcsir.gov.bd



Embrapa Agrobiologia-Brazil
embrapa.br/grobiologia



ICCES-China
english.icces.ac.cn



TIB-China
english.tib.cas.cn



CIF-Colombia
www.cif.org.co



NRC-Egypt
www.nrc.sci.eg



CSIR-Ghana
www.csir.org.gh



IROST-Iran
www.irost.org



ICENS-Jamaica
www.icens.org



KazNU-Kazakhstan
www.kaznu.kz/en/



RSS-Jordan
www.rss.jo



ICCBS-Pakistan
www.iccs.edu



NMC-Nigeria
www.nmcabuja.org



CUI-Pakistan
www.comsats.edu.pk



AQU-Palestine
www.alquds.edu/en



UCAD-Senegal
www.ucad.sn



ITI-Sri Lanka
www.iti.lk



IRCC-Sudan
www.ircc.gov.sd



HIAST-Syria
www.hiast.edu.sy



TIRDO-Tanzania
www.tirido.org



CERTe-Tunisia
www.certe.rnr.tn



TÜBİTAK-Turkey
www.tubitak.gov.tr/en

Honourable mentions: Mr. Tila Mohammad, and Mr. Anya Augustine Igwebuike



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



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