



Head of COMSATS' Focal Ministry in Pakistan, H.E. Mr. Shibli Faraz, the Federal Minister for Science and Technology (MoST), along with Incumbent Executive Director COMSATS, Dr. Akhtar Nazir (Federal Secretary MoST), visited COMSATS Secretariat (details on page 2).

Inside this Issue

- From Editors' Desk 1
- Highlights from COMSATS Secretariat 2
- Some Activities of COMSATS' Centres of Excellence 5
- World Hepatitis Day 2021: Interview with National Focal Person on Hepatitis in Pakistan, Dr. Huma Qureshi 10
- Development and S&T News from Member States and Beyond 13
- COMSATS' Brief and Announcements 16

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From Editors' Desk

The globe underwent an IT revolution at the turn of the third millennium; something that has helped salvage 'business as usual' and retain a sense of normalcy and continuity of operations during the ongoing Pandemic.

The transformations and changes during the last two decades have been of incredibly varying nature and fast, one being Climate Change. The Intergovernmental Panel on Climate Change (IPCC) in its 2021 session held in July 2021 has highlighted the impact of human activity, which shows stark trends based on the last two decades alone. Record high temperatures have been documented for past five years – highest during a century and a half. The recent global extreme weather events making headlines have also been largely attributed to the human interventions in different ecosystems. The temporary dip in global CO₂ emissions seen during last year has also bounced back fast. In this scenario, the world needs a dynamic change from carbon-intensive to low-carbon economies eventually leading to net-zero CO₂ emissions.

Owing to the irreversibility for huge timescales and global impact, therefore, Climate Change remains an emergent issue and a policy concern for a long time to come. Integration of sustainable and eco-friendly practices for every action and at every level cannot be over-emphasized. This is also a call for action for the world leaders and policy-makers to scale-up efforts to mitigate the effects of the crisis and to put forth ambitious targets to reach net-zero emissions. Smart, clean practices at individual and mass scales are needed, along with civic planning, education and execution.

Through these old and new emerging issues, importance of knowledge as a driver of sustainable development of nations, for fostering necessary collaborations, and for overcoming challenges is undeniable. Youth around the world could aide global efforts towards addressing key issues and their necessary capacity building could be a crucial factor for success. International organizations have an important role to play in this regard.

Realizing its role in this respect, COMSATS collaborated with the University of Chinese Academy of Sciences (UCAS) and the Alliance of International Science Organizations (ANSO) of China to organize a training on Sustainable Development and Leadership Enhancement, benefitting 150 participants from across the globe that includes 80 participants from 13 Member States of COMSATS.

A highlight of this issue is also the news on the discussions held with H.E. Shibli Faraz, Federal Minister for S&T, Government of Pakistan, during his visit to COMSATS Secretariat, accompanied by the incumbent Chairperson COMSATS Consultative Committee and Executive Director COMSATS, Dr. Nazir Akhtar (Federal Secretary MoST, Pakistan). The honor of their visit comes with assurances of consistent support of the Ministry that is COMSATS' Focal Ministry in Pakistan, as well as highest state level patronage as Host and Member State.

This issue covers a special dialogue on hepatitis in connection with World Hepatitis Day 2021, as well as some interesting advancements in R&D from COMSATS' member states and developments from COMSATS' centres towards the realization of 2030 Global Goals.

HIGHLIGHTS FROM COMSATS SECRETARIAT

Visit by Federal Minister for S&T, Government of Pakistan, and Chairperson COMSATS Consultative Committee

H.E. Mr. Shibli Faraz, the Federal Minister for Science and Technology (MoST), Government of Pakistan, visited COMSATS Secretariat on 11th August 2021. Mr. Faraz assumed his office at COMSATS' Focal Ministry in Pakistan in April 2021. He was accompanied by Dr. Akhtar Nazir, Federal Secretary MoST, who is also the incumbent Executive Director COMSATS, as well as Maj. Qaiser Majeed Malik, Additional Secretary (MoST).

The Minister and his colleagues were received by senior officials of COMSATS Secretariat that included Mr. Bilal Chohan, Director (Administration); Mr. Amanullah Khattak, Director (Finance); and Mr. Irfan Hayee, Deputy Director (Programmes).

During the meeting, a comprehensive briefing was given to the honorable guests highlighting COMSATS' role as an intergovernmental S&T organization of the countries of the South.

Besides, an overview of COMSATS' financial standing was given by Mr. Khattak who also made key recommendations to help improve the existing financial standing of COMSATS. The case of COMSATS Internet Services (CIS) – COMSATS' flagship project established in 1996 – also came under consideration and Mr. Faraz recommended taking progressive measures to ameliorate the pioneer internet service provider (ISP) of Pakistan.

Further during the meeting, discussions were held on making COMSATS' programmes and operations more efficient and impactful, in particular, matters related to establishment,



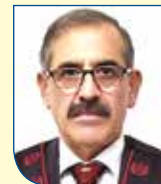
administration and finances. It was also noted that Pakistan as a member state and COMSATS' host country has been the main beneficiary of COMSATS' programmes and activities. Moreover, it was hoped that scientific organizations under the Ministry of Science and Technology will extend their support for COMSATS and at the same time benefit from its international linkages.

H.E. Mr. Faraz was appreciative of COMSATS' role as a key regional player in international cooperation in S&T. He hoped to see COMSATS' activities aligned with national development agenda of Pakistan through applied R&D, commercialization and monetization of the research outputs, in addition to finding innovative solutions to national challenges. He also advised re-thinking strategies to help achieve COMSATS' international mandate. Dr. Nazir, who also chairs one of COMSATS' statutory organs (COMSATS Consultative Committee) in ex-officio capacity, noted that international S&T organizations, including those based in Pakistan have a long way to go in adapting to the needs of 21st century that it has presented in the last two decades. He hoped COMSATS is cognizant of these needs and will make leaps in this direction in the coming years.

The meeting concluded with the presentation of souvenir to the Honorable Minister.

Profile of Incumbent Executive Director COMSATS

H.E. Dr. Akhtar Nazir is the interim Executive Director of COMSATS. He assumed the office after taking charge as the Federal Secretary, Ministry of Science and Technology, Government of Pakistan on 27th July 2021.



An officer of Pakistan Administrative Services (PAS), Dr. Nazir has vast administrative experience and served on deputation at different departments of Federal and Provisional governments of Pakistan. Recently, he has served as Secretary, Election Commission of Pakistan; Secretary, Senate Secretariat; and Chief Secretary, Government of Balochistan. He has also served as Commissioner Dera Ismail Khan Division of Pakistan.

COMSATS-UCAS Collaboration

Under COMSATS' MoU with UCAS (July 2020) for cooperation in the areas of



Closing Ceremony of ANSO-BIDI School

COMSATS collaborated with the Centre for Environmental Economics of the University of Chinese Academy of Sciences (CEE-UCAS), and the Alliance of International Science Organizations (ANSO) for organizing a virtual ANSO-BIDI School from 12th May to 4th August 2021. Earlier started as ANSO Training on Sustainable Development and Leadership Enhancement, the School was held under the Belt & Road International Innovation Development Institute Network of ANSO (ANSO-BIDI Institute Network). The two and a half months long training concluded in a virtual ceremony that was attended by organizers, representatives of collaborating organizations, course participants as well as officials from COMSATS Secretariat.

The ceremony was opened by Prof. Desheng Wu, Dean of the Belt and Road College of UCAS, Director of the Research Centre for Environmental Economics of UCAS, China. Speaking on the occasion, Prof. Dr. Ashraf Shaalan, Chairperson COMSATS Coordinating Council and Fellow of ANSO-BIDI Institute Network, considered activities such as this training important for enhancing collaboration and bringing relevant stakeholders together for drawing up innovative solutions to accelerate socio-economic development.

Over 150 participants, including 80 belonging to COMSATS Centres of Excellence from 13 Member States of COMSATS, i.e., Egypt, The Gambia, Ghana, Iran, Jordan, Kazakhstan, Nigeria, Palestine, Pakistan, Syria, Sri Lanka, Sudan, and Tanzania, as well as COMSATS Secretariat benefited from the three-month training.

The 11 modules of the training were framed on the following themes:

mutual interest, COMSATS' continued to participate in UCAS activities. The following provides a glimpse at recent activities in this connection:

Inauguration of ANSO-BIDI Institute Network

The Alliance of International Science Organizations (ANSO) inaugurated its Belt & Road International Innovation Development Institute Network (ANSO-BIDI Institute Network) on 7th July 2021. Prof. Dr. Ashraf Shaalan, Chairperson COMSATS Coordinating Council, spoke on behalf of COMSATS, who deemed establishment of the Network a step forward in building stronger South-South cooperation in the field of science and technology for sustainable development.

COMSATS is a member of ANSO since 2019 and actively participates in its activities as well as seeks to form active liaison with its other members. The inauguration ceremony was held at the University of Chinese Academy of Sciences (UCAS), China, and was physically attended by heads/representatives of relevant scientific institutions and Chinese governmental bodies as well as had virtual presence of foreign participants.

Instituted with an aim to facilitate sustainable development in the countries of the South, particularly, Belt & Road countries through a long-term training and exchange mechanism, the Network is a non-profit, non-government international organization established by the College of Belt & Road, UCAS, China. ANSO-BIDI Institute Network has various organizations/ institutions as its members, including COMSATS.

Prof. Desheng Wu, Dean of the Belt and Road College of UCAS & Director of the Research Centre for Environmental Economics of UCAS, China, opened the event that featured speeches of representatives of ANSO-BIDI Institute Network member organizations.

Utilizing the platform of ANSO-BIDI Institute Network, UCAS conducted workshop on "ANSO-BIDI School for Innovation, Sustainable Development and Leadership Enhancement", with participation from across the globe. The ceremony was followed by the 8th module of the training themed on 'The changing role of cartography' conducted by Professor Vukotic, Rector of University of Donja Gorica (UDG), Montenegro.

sustainability and leadership; economic policies against climate change, sustainable development growth in digital economy era; science diplomacy for sustainable development; changing role of cartography; sustainable business in practice; and advisory role of academy of science during time of COVID-19 pandemic, among others.

Joint Research Project on SDG6 under Grant from D8 Secretariat

COMSATS Secretariat facilitates the research and development collaborations among its Centres of Excellence in order to enable them to collectively address the common challenges being faced by their respective countries, in particular, and COMSATS' member countries, in general.

In a recent development in this regard, a joint research project led by COMSATS Centre of Excellence in Pakistan, COMSATS University Islamabad (CUI), in collaboration with the Centre in Egypt, National Research Center (NRC), and Imo State University, Nigeria, has won grant under D-8 Project Support Fund with facilitation of COMSATS Secretariat and the Ministry of Foreign Affairs, Government of Pakistan.

Dr. Toqeer Ahmad, Assistant Professor at Centre for Climate Research and Development (CCRD), CUI, Pakistan, is overseeing this project entitled "Feasibility Study for Provision of Safe Drinking Water through Water Conservation (SDWC)". The project aims at carrying out the feasibility study for provision of 24/7 municipal drinking water supply to the inhabitants of the I-8 Sector, Islamabad, Pakistan, as a model. The subject feasibility study will digitize the existing water supply distribution network of the I-8 sector using GIS technology, cost-benefit analysis for

implementation of water metering and pricing in addition to the provision of safe drinking water as a model in the study area.

The project that will run for one year is expected to have great impact on provision of safe drinking water through water conservation. Egypt and Nigeria will also benefit by implementation of the same project/study to conserve water by using available recourses.

Cooperation Avenues Discussed with COMSATS' Centre in Indonesia

On 25th August 2021, COMSATS' officials held a virtual meeting with the representatives of its Centre of Excellence in Indonesia, Sepuluh Nopember Institute of Technology (ITS), with a view to expand and strengthen existing cooperation with this relatively new Centre that joined the Organization in July 2020.

The meeting was held with the Vice Rector of Research, Innovation, Partnership and Alumni – Prof. Bambang Pramujati; Director for Research – Dr. Agus M. Hatta; and Assistant Professor at Department of Chemistry – Dr. Sri Fatmawati. From COMSATS' side, Mr. Irfan Hayee, Deputy Director (Programmes); Mr. Nisar Ahmed, Deputy Director (Systems); Ms. Huma Balouch,

Sr. Assistant Director (Programmes); Mr. Farhan Ansari, Sr. Assistant Director (Programmes); and Mr. Baber Sultan, Programme Officer attended the meeting.

Discussions during the meeting focused on exploring ways Sepuluh Nopember Institute of Technology (ITS) could help achieve the central objective of COMSATS' Network with the larger aim of facilitating science-led sustainable development of COMSATS' member states. Few areas identified in this connection were:

- Post-graduate scholarships and post-doc fellowships for students and researchers;
- Technical trainings and scientific exchanges in areas, such as Artificial Intelligence and Natural Products Sciences;
- Research collaboration in emerging and contemporary areas.

Further during the meeting, ITS officials shared their Institute's response to COVID-19, which culminated in initiation of 90 projects dealing with the various aspects of the Pandemic. It was informed that ITS continued its academic and research activities during the Pandemic through digital resources. The Institute's future plans concerning mitigation of challenges posed by COVID-19 were also shared by ITS' officials.



SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

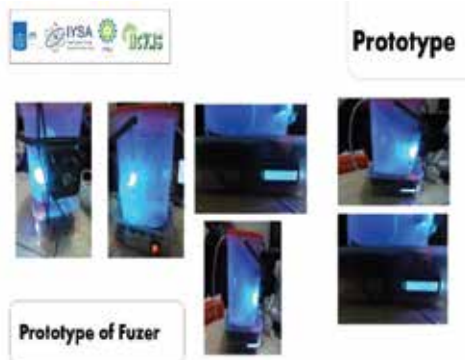
ITS-Indonesia to Establish 5G Experience Center

ITS, Indonesia, has entered into a partnership with Nokia and Indosat Ooredoo (a telecommunication provider in Indonesia) for developing 5G Experience Center at the Institute. The 5G Experience Center will allow students and millennials to learn the potential of 5G holistically – from applications, access technology to BTS radio technology.

The programme also aims to implement 5G in Surabaya city through the "Shining Surabaya programme".

R&D Activities at ITS-Indonesia

- A team of students from Environmental and Instrumentation Engineering Departments of Sepuluh Nopember Institute of Technology (ITS), Indonesia, have developed a fruit sterilizer "FUZER" to maintain the freshness of fruits and reduce the risk of coronavirus transmission. The device consisting of several components, including UV light, ozone generator, Peltier cooler, CPU fan, Arduino Uno R3, and temperature sensor, is able to sterilize the fruit in 30 – 40



seconds. This innovation has also led to winning of a bronze medal by the team at "2021 International Invention Competition for Young Moslem Scientists (IICYMS)".

- A web-based application dubbed "E-Trash" has been developed by three students of ITS, Indonesia, with the aim to reduce waste and encourage waste recycling for a clean and healthy environment. The application (downloadable from via <https://www.etrashidn.com>) allows people to buy and sell waste as exchange inorganic waste or used goods with coins that can be converted into cash.
- ITS team has designed a green hydrogen-based portable charger for the electric vehicles named

Antasena Portable Charger Electric Vehicle (Antasena PCEV). Through this development, the team aims to provide solution for the lack of infrastructure for charging vehicles and the high cost of electricity in the country in a bid to accelerate the "electric motor vehicle program" of the Indonesian government. The designed charger is capable of fast-charging electric cars with a time of 1 hour 58 minutes on a 13.8-kilowatt battery.

RSS-Jordan to Support NDC Action Project

The Royal Scientific Society of Jordan along with the National Agriculture Research Centre has been selected by the Government of Jordan and the UNEP DTU Partnership (UDP) to serve as a National Technical Institution (NTI) specialized in Water for Agricultural Use and Solid Waste Management to support Jordan's Nationally Determined Contribution (NDC) Action Project.

The NDC Action Project objective is to support the efforts of 10 partner countries including Jordan to translate NDCs into strategies and actions ready for financing and implementation. The project will work to secure a multi-



stakeholder and high-level engagement; provide technical support to strengthen relevant capacity of institutions responsible for NDC implementation; support development of a portfolio of sectoral policies and programmes in the priority sectors; support development of investment plans in these sectors; and facilitate experience-sharing among partner countries and others.

RSS-Jordan Researchers Win QRNEC

Researchers from Advanced Research Centre of RSS, Jordan, have won Queen Rania National Entrepreneurship Competition (QRNEC) after competing with 520 other entrepreneurs. Their business proposal was based on an atmospheric water generating device that they invented to capture water vapors from air via customized porous nanomaterials. After collection, the water is turned into clean, drinkable water.

The researchers' patent-pending prototype currently meets a person's daily consumption needs (>2.5 liters) at a projected price of 6.5 cents per liter, which is 480% less than the price paid per liter of bottled water.

Consultative Workshop of SwitchMed TEST III Project held by RSS-Jordan

RSS, Jordan, collaborated with the Jordanian Ministry of Environment to organize a consultation workshop as part of SwitchMed Transfer of Environmentally Sound Technology (TEST) project that aims to establish national mechanisms to enhance resource efficiency in industrial sector.

The project is being conducted under the "SwitchMed" programme jointly with the United Nations Industrial Development Organization (UNIDO);



Chambers of Industry; and Ministry of Industry, Trade and Supply, under the patronage of the European Union (EU).

During the workshop, briefs on the results of the first phase of the project (2015-2018) and progress of the current phase (2019-2022) were presented by RSS. Later on, working groups were formed to discuss the mechanisms to be implemented to institutionalize and govern the concept of resource efficiency in Jordan. The workshop concluded with establishing the need to form a legislative framework and an administrative structure that clarifies the tasks and roles of all relevant stakeholders, and to develop an interactive platform that allows transfer of knowledge for better resource efficiency.

KazNU-Kazakhstan Enhances Cooperation with Kyrgyzstan

A delegation of Al-Farabi Kazakh National University (KazNU), Kazakhstan, headed by the Rector of the University, Prof. Dr. Zhanseit Tuimebayev, visited the Kyrgyz Republic to discuss possibilities of opening a branch of KazNU.

Following the 9th meeting of the Kazakh-Kyrgyz Intergovernmental

Council, the decision was made to open a branch of Al-Farabi KazNU in the Kyrgyz Republic. The Rector met with acting Mayor of Bishkek, Baktybek Kudaibergenov, to discuss the prospects of opening a branch of KazNU in Bishkek.

Further during the visit, the delegation also met with the Deputy Chairman of the Cabinet of Ministers of the Kyrgyz Republic, Ms. Zhyldyz Bakashova; and the Minister of Education and Science of the Kyrgyz Republic, Mr. Bolotbek Kupeshev, and discussed possibilities of enhancing cooperation between the universities of the two countries. It was agreed that the faculty of Al-Farabi KazNU and higher educational institutions of the Kyrgyz Republic will conduct classes in universities of both countries within the framework of academic mobility.

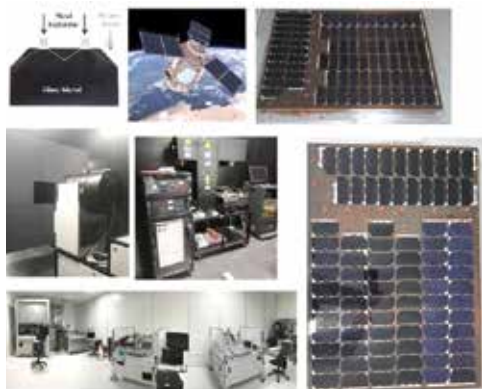
Endangered Frog Species Discovered by CSIR-Ghana's Scientist

A team of eleven scientists from the Council for Scientific and Industrial Research-Forestry Research Institute of Ghana (CSIR-FORIG) has discovered an endangered frog species (Atewa Slippery frog) from the Atewa Range Forest Reserve in South East of Ghana.

The species has been scientifically named *Conraua sagyimase* after the Sagyimase community located at the foot of Atewa Forest in order to honor community's support towards the research as well as their anti-mining campaigns.

TÜBITAK MAM-Turkey Develops Turkey's First National Space-Qualified Solar Panel

The space-qualified solar panel flight



model developed for IMECE Satellite by TÜBITAK MAM Materials Institute Photovoltaic Technologies Center has successfully passed ground-level acceptance tests in compliance with international standards. The space-qualified solar panel will take place as the base load in the earth observation satellite, IMECE, to be launched in 2022.

Under R&D since 2015, the space-qualified solar panels are being developed for use in next-generation satellite projects with the support of the Turkish Republic Presidency of Strategy and Budget and the coordination of the Presidency of Defense Industries.

ICCBS-Pakistan Signs Accord with Iranian Research Centre

Dr. Panjwani Centre for Molecular Medicine and Drug Research (PCMD) of the International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, has signed a Memorandum of Understanding (MoU) with the Neuroscience Research Centre at the Shahid Beheshti University of Medical Sciences, Tehran, Iran.

The prime objective of this MoU is to establish joint research programmes in the field of neurosciences. The agreed cooperation may include faculty and research staff exchanges, study abroad programme, collaborative research programmes, and service programmes.

CUI-Pakistan Holds Webinar on GIS and Remote Sensing

A webinar on "Introduction to GIS and Remote Sensing" was organized by COMSATS University Islamabad (CUI), Pakistan, under the platform of UNESCO Chair on Knowledge Systems for Integrated Water Resources Management (IWRM), on 28th July 2021. The webinar covered basics of GIS and Remote Sensing Data, Vector and Raster Data symbology, analysis of data, area calculations, merging / clipping and visualization of data through examples.

ITI-Sri Lanka Partners with State Ministry for SMEs Upgradation

The Industrial Technology Institute of Sri Lanka has joined hands with the State Ministry of Rattan, Brass, Pottery, Furniture and Rural Industrial Promotion for the capacity building of SME and cottage industries.

The entrepreneurs aspiring to initiate new business were facilitated through ITI technology transfer programmes and add further value to overall enterprise development by addressing

the specific issues of Micro, Small and Medium Entrepreneurs (MSMEs) who has limited access to technology. Progress monitoring and technical assistance are provided until the product is commercialized. The product is analyzed to check conformity with mandatory regulations, relevant specifications of Sri Lanka Standards and process validation is undertaken and improvements are prescribed if necessary.

ITI also participated in business clinics organized for selected entrepreneurs in different Provinces in Sri Lanka by the Ministry to provide technology support services responding to specific needs of MSME enterprises.

TM for Respiratory Problems Developed by TIRDO-Tanzania

The Tanzania Industrial Research and Development Organisation (TIRDO), Tanzania, has developed a drug dubbed "Buyegi" to treat conditions related to respiration. Approved by the National Institute for Medical Research, the traditional medicine is a volatile oil product made from eucalyptus and mint oil.



Testing Jordanian Dates for Hepatitis-A Virus

RSS' Contribution to Support a National Crisis Faced by the Agriculture Industry

Jordanian dates constitute important economic value to Jordan. This product has become competitive in the global market with Jordan exporting its dates to more than 15 countries around the world. With increasing international trade in fresh and frozen foods, including fruits and vegetables, the risk of infection increases through the consumption of Hepatitis A Virus (HAV) contaminated foods.

HAV is a communicable disease that commonly spreads through the stool and blood of an infected person; transmission can also happen by close contact with an infected person or by eating contaminated food or drink. The virus affects the liver and usually causes mild illnesses but may also cause severe disease and liver failure.

In order to ensure the safety and quality of the Jordanian dates and the safety of procedures followed by dates' growers and exporters, the RSS Bio-Safety & Bio-Security Centre has developed a standardized methodology for testing HAV in date samples. The Bio-Safety & Bio-Security Centre at RSS is currently the only reference laboratory in Jordan for testing HAV in food products.

Following the ban of Jordanian dates in Australia based on Australian authorities claiming that three people were infected with HAV after consuming fresh Medjool dates, the Jordanian Ministry of Agriculture in collaboration with the Royal Scientific Society (RSS) of Jordan thoroughly inspected and tested the dates for contaminants.

Twenty Medjool & Barhi date samples from different farms were tested in the Molecular and Virology Laboratory of the RSS Bio-Safety & Bio-Security Centre. All samples were negative for HAV. The testing methodology included: TGBF buffer for virus elution, Quick-RNA™ Viral Kit (Cat. R1035, ZYMO RESEARCH) for RNA extraction and PowerChek™ Hepatitis A Virus Real-time PCR Kit (Cat. No. R0212, Kogene) for molecular detection of the virus.

Based on the RSS test results, the Minister of Agriculture announced that Jordanian dates are completely safe: all tests were negative for contaminants. This work protected the reputation of the agriculture industry in Jordan and restored confidence in Jordanian date products.



Some Awards and Achievements of COMSATS Centres of Excellence

- Sepuluh Nopember Institute of Technology (ITS), Indonesia, has been shortlisted as one of the nine nominees for the Times Higher Education (THE) DataPoints Social Impact Award. The newly introduced Award of THE is denoted for data transparency and supporting evidence provided in the ranking of THE Impact Rankings that assess universities' performance against the United Nations' Sustainable Development Goals (SDGs).
- The "International Journal of Mathematics and Physics" of the Al-Farabi Kazakh National University, Kazakhstan, has been included in Scopus – the world's largest database of scientific publications. The Journal is also indexed in other reputable databases such as Web of Science, EBSCO, Research Bib, Scilit, and Cite Factor.
- According to "IAAR Eurasian University Ranking (IAAR EUR)" 2021 conducted by the Independent Agency for Accreditation and Rating "(IAAR), Al-Farabi KazNU has been recognized as the first and best university among universities in Kazakhstan, Russia, Kyrgyzstan, Belarus, Ukraine, Azerbaijan and Moldova. The IAAR EUR International Ranking ranks universities on the basis of following indicators: the quality of education (20%), the scientific potential of the university (30%), the international recognition of the university (20%), the academic reputation of the university (30%) and the IAAR EUR ranking methodology approved by international experts from the international IREG audit.
- Prof. Dr. Muhammad Abid from CUI Wah Campus, Prof. Dr. Robina Farooq from CUI Lahore Campus, and Prof. Dr. Junaid Mughal from CUI Attock Campus have been awarded Pakistan's civil award "Tamgha-i-Imtiaz" (Award of Excellence) for their meritorious services in the fields of Mechanical Engineering, Education, and Science and Education, respectively.

Some Scientific Events in Member States

National Research Centre (NRC), Egypt

- 9th International Conference of the Veterinary Research Division under the theme "Animal Health for Global Health Security"
Dates: 27th – 30th September 2021
For details and registration, visit: <https://www.nrc.sci.eg/the-veterinary-research-division-of-the-national-research-centre-is-about-to-hold-its-9th-international-conference-under-the-title-animal-health-for-global-security-27-29-september-2021/>
- 2nd NRC International Conference on Science & Sustainable Development
Dates: 25th - 27th October 2021
For details and registration, visit: <https://www.icssd2021.com/>



University of The Gambia, The Gambia

- 1st Annual International Conference under the theme "COVID-19 Pandemic – Economics, Health and Education: Impacts and Recovery"
Dates: 27th - 28th October 2021
For details and registration, visit: <http://utgsbpaconference.com/>



WORLD HEPATITIS DAY 2021

INTERVIEW WITH NATIONAL FOCAL PERSON ON HEPATITIS IN PAKISTAN, DR. HUMA QURESHI

World Hepatitis Day is observed every year on 28th July to help raise awareness and understanding of hepatitis – a major global health problem causing acute/ chronic liver infection (inflammation) that may lead to a life-threatening disease. Affecting 1.5 million people globally each year (World Health Organization, 2019), hepatitis is one of the key focus areas of national and global health agendas with a specific target (3.3) under United Nations Sustainable Development Goals (SDGs) earmarked for its elimination.

This year's theme for the Day, "Hepatitis Can't Wait", highlights the exigency of continuous efforts towards elimination of hepatitis as a public health threat by 2030 alongside the current COVID-19 crisis.

As the focus of health sector globally has shifted towards the management of COVID-19 Pandemic, the need to re-build and re-orient national and international collaborations to achieve collective health-related targets becomes more urgent. COMSATS as an international organization promoting sustainable development in the Global South is conscious of such issues.

This World Hepatitis Day, COMSATS Secretariat reached out to Dr. Huma Qureshi, a prominent name in the prevention of hepatitis in Pakistan, for an informative discussion on viral hepatitis, its public health implications, and efforts for its preventions and control within and outside Pakistan.

Dr. Huma Qureshi is the consultant Gastroenterologist with prime focus on liver diseases. Recently, she has retired from Pakistan Health Research Council, Islamabad, and national lead on prevention and control of viral hepatitis in Pakistan. Previously, she has held important positions relating to hepatitis control and prevention. An honorary fellow of the Royal College of Physicians, Ireland, Dr. Qureshi has played a pivotal role in the development of National Hepatitis



Strategic Framework (2017-2021) and National Hepatitis C testing and treatment guidelines.

Here is what we learnt during the session:

Can you please generally introduce us to hepatitis and its types? Which of these, in your experience, has been found more prevalent in Pakistan and other parts of the world?

Hepatitis is an inflammation of the liver caused by viral or bacterial infection, however, drug and alcohol abuse can also cause this disease. Viral hepatitis has 5 types, i.e., A, B, C, D and E, which, if left untreated, ultimately lead to chronic liver disease and liver cancer. In some parts of the world, alcohol-induced hepatitis is common but in Pakistan viral induced hepatitis type B and C are more prevalent and together these two have affected about 10 million people till now with 35,000 deaths each year. Annual death rate due to hepatitis is equal to a death toll of daily plane crash loaded with 90-95 people; that shows the severity of this disease.

Hepatitis is known as a "silent killer". What are the symptoms one needs to be on the look-out to ensure early diagnosis?

Silent means having no signs and symptoms while the infected person

harbors the virus for a long span of time without knowing.

Hepatitis, in general, has no loud symptoms. Anyone who has undergone a surgery, dental treatment, blood transfusion, shaving at barbers or is taking drug injections is at risk. It is necessary to undergo screening for hepatitis regularly instead of waiting for the symptoms to appear which is usually at later stages of the disease.

The virus of hepatitis B and C enters the human body through various means. Once the virus is inside the body, it continues to reside there for 20 – 30 years without showing any signs and symptoms of the disease. During this time, the virus continues to affect the liver leading to chronic liver disease which ultimately results in liver failure and death.

Is vaccination available for all types of hepatitis? How effective are these and what is the status of the vaccination in the developing world and specifically in Pakistan?

Yes, vaccines are available but not for all types of hepatitis viruses. For hepatitis A and E, which transmit through unsafe drinking water, effective vaccines are available. In Pakistan, we are exposed and immune to these viruses so the vaccination for these two types is generally not recommended for the local population. However, for people travelling to Pakistan from other countries where these infections are less common, such as United States and UK, these vaccinations are a part of travel advisory.

For Hepatitis B, a very effective vaccine is available globally since 1980s. It is an intramuscular vaccine with 3 shots administered 1 and 6 months apart, respectively. As the life threatening hepatitis B is more common in Pakistan, WHO recommends first dose of this vaccine for each child at the time of birth.



Despite being highly recommended at birth this vaccine has not been procured in Extended Immunization Programme (EPI) yet. If the mother is viral hepatitis B carrier, transmission possibility to her child is 100% during delivery and early childhood. This is why I highly recommend everyone to buy the birth dose of hepatitis B vaccine for their newborns till its inclusion in EPI, and it does not cost more than 100 PKR but is really a life-saver.

Unfortunately, there is no vaccine for Hepatitis C across the globe, so we must prevent this disease by taking precautionary measures because it is easily and commonly transmitted by exposure to blood via unsafe healthcare procedures and daily practices.

The theme of World Hepatitis Day this year is "hepatitis can't wait". Do you think COVID-19 has affected the campaign and efforts to slow down the hepatitis spread?

Yes, I fully agree. In the wake of the Pandemic, a number of other campaigns have slowed down all over the world particularly in the health sector as COVID-19 has put already stretched health systems into further distress. There has been a lot of pressure on hospitals and we saw that the health systems really suffered all over the world. Inevitably, all the attention and most resources were diverted to COVID-19 management.

In Pakistan, there are about 23,000 deaths due to the Pandemic, however, each year 35,000 people succumb to hepatitis and

we can't afford to neglect it. Even the Prime Minister's programme for hepatitis that offers free-of-cost testing and treatment for hepatitis has been delayed due to the Pandemic as the funds got diverted towards Pandemic management. As a result, we are now waiting for the Pandemic to be somewhat contained so we can resume the programme. The slogan "hepatitis can't wait" is very timely and apt because the disease can't wait to be tested and treated; with the passage of time it goes into chronic phase and once it does, it is very difficult to cure. We, therefore, cannot wait for people to go into complications and die. Our wait for full recovery from the Pandemic would only add more complications and burden to the already soaring cases of viral hepatitis. Hepatitis treatment should remain high priority even during the Pandemic.

What can we learn from COVID-19 Pandemic that can help fight other diseases, such as hepatitis, successfully and control their transmission?

COVID-19 Pandemic has inadvertently boosted coordination within the provinces; it has resulted in significantly improving our testing and reporting capacity. The management guidelines of COVID-19 can be used to improve the hepatitis response. Some success that we saw during the Pandemic is due to the active response of the National Command Operation Center (NCOC) which was able to get information from all the public and private health departments of each province which otherwise is not always made available. I see such a strong coordination in public

and private sectors, thanks to NCOC.

Another good aspect of COVID-19 response was that all the data related to cases, testing and vaccination was linked by NCOC with the National Identity Card numbers. Once our hepatitis programme is launched, we would really want NCOC to take it up as efficient strategies are lacking for the management of all other diseases, including hepatitis. If we link hepatitis programme with NCOC, we could easily get related information regarding tracking, cases, and testing.

Based on their common challenges, developing countries can learn from one another's experiences. What has been your experience as the focal person of Government of Pakistan for hepatitis? Would you highlight some steps the Government is taking to lower the disease burden?

Common challenges are many. The first and the foremost challenge is the large population that we have. Pakistan is the second country in the world with the largest hepatitis C burden, which is majorly due to the large population of the country.

Lack of awareness is another challenge. About 7.3 out of 225 million people in Pakistan have the active virus. Statistics show that less than 20% know that they have the disease. The biggest challenge is how to bring these people out for testing before the symptoms appear at the later stages of the disease.

In Pakistan, we have the 'Chief Minister's

Programme' running in each province and is catering to the needs of the population. Due to limited funds, they are unable to facilitate large populations of respective provinces.

Taking notice of the high Hepatitis C disease burden in Pakistan, the Prime Minister of Pakistan has agreed to launch the Hepatitis C elimination programme in the country. We have 7.3 million active disease cases already and the target is to treat one million each year. Therefore, to cater to these patients, the programme expands for over 10 years. It is an integrated programme that will support the existing provincial hepatitis programmes in testing and treatment. Worth over 70 billion PKR, the programme will be launched once COVID-19 threat is low.

How confident are you about the level of awareness on Hepatitis among the Pakistani population? What more can be done in this respect?

The level of awareness is quite low. There is a great need to encourage people to get themselves tested for which a simple finger prick test is an affordable and reliable means. College and university students can play a pivotal role in creating awareness about the disease in their households and communities and encourage people to get treatment. Hepatitis C is treated with oral medicine

which is taken once a day for 12 weeks and has a recovery rate of 98%.

The same awareness trend exists globally as in Pakistan. All over the world, countries are trying to bring awareness to their population by informing them about the risk factors. They are establishing easily-accessible testing sites. This is what we are trying to do under Prime Minister's Programme by instituting testing sites at the community level and not just at the tertiary care hospitals.

People need to be made aware of the initial testing for hepatitis which is very easy and can be done through a simple finger prick and now globally people are performing this at home. A little awareness would go a long way in managing the hepatitis-related toll on healthcare systems.

How can international organizations, like COMSATS contribute to combating communicable diseases, such as hepatitis in the developing countries?

International/ inter-governmental organizations, such as COMSATS, can undertake and support the on-going communication and advocacy relating to hepatitis awareness to support national, regional and global efforts towards the elimination of communicable diseases. The said can be achieved through, for example, developing consortia of

educational institutions within a province or country for necessary advocacy concerning hepatitis awareness and prevention through digital media, tools and marketing platforms. The consortia can also help institute a Hepatitis screening site to facilitate students in hepatitis screening and consultations.

Through advocacy, COMSATS can also encourage and communicate the need to general public for Hepatitis B vaccination at childbirth that can help prevent the disease and is carried out free-of-cost under the national Expanded Programme on Immunization (EPI). Similarly, the public can be made aware of the available treatment for Hepatitis C that continues for 12 weeks.

Utilizing ICTs for socio-economic gains, an interactive software can be developed that can help people identify and access their nearest healthcare facility for testing/ treatment.

Contributed by:

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DEVELOPMENT AND S&T NEWS FROM MEMBER STATES AND BEYOND

COVID-19 Related Developments from Member States

Republic of Ghana: In order to develop indigenous capacity and reduce dependency on foreign supplies amid global shortages, the President of Ghana (Chairperson of COMSATS), Hon. Nana Addo Dankwa Akufo-Addo, has announced the establishment of a National Vaccine Production Institute. The Institute is expected to serve as a self-sufficient and self-reliant local vaccine development enterprise that will also facilitate relevant R&D, bilateral and multilateral partnerships and human resource development in the field (Ghana Web, 26th July 2021).

Kingdom of Morocco: Morocco has opened 'smart vaccinodrome' digitalized COVID-19 vaccination centre in a bid to increase the efficiency of the national vaccination campaign to combat COVID-19 crisis. Located in Casablanca, the centre employs intelligent sensors to monitor vaccine cold chains, general supervision, and management, and to analyze medical, environmental, and logistical data (Morocco World News, 10th August 2021).

Republic of Senegal: In a bid to increase access to affordable vaccines as well as enable vaccine production within the continent to aid response to emerging diseases, Senegal has entered into a partnership with several European development partners for the construction of a new vaccine manufacturing plant in Senegal. To be housed at the Pasteur Institute in Dakar, once functional, the plant is expected to produce 25 million vaccine doses per month by the end of 2022.

Republic of Turkey: A prophylactic drug against COVID-19, in the form of a nasal spray, has been developed by Turkish researchers at the National Nanotechnology Research Center of Bilkent. Having completed animal trials successfully, the drug will soon start Phase 1 trials after approval from Turkey's health ethics board. The drug has been developed as part of the COVID-19 Platform – an initiative by the Scientific and Technological Research Council of Turkey (TÜBİTAK).

China Develops World's Most Powerful Quantum Computer

A team of Chinese researchers has set a new record in quantum computing by developing the world's most powerful

quantum computer thereby displacing Google's Sycamore processor as the holder of quantum supremacy. The Chinese team, based at the University of Science and Technology of China in Hefei, reported that their quantum computer is 10 billion times faster than Google's (New Scientist, 5th July 2021).

The computer dubbed Jiuzhang can complete a complex task in 70 minutes which the most powerful supercomputer would complete in at least eight years. The team's Zuchongzhi system is a two-dimensional programmable computer that can encode quantum information across 66 quantum bits in contrast to Google's 54 quantum bits (qubits).

Pakistan Launches its First Ever "Smart Forest" Project

In an effort to global warming and climate change, Pakistan has launched its first ever smart forest project. Equipped with modern-day technology sensors and surveillance systems, the "Smart Forest" will cover approximately 3000 acres (24,000 kanals) of land in Rakh Jhok area of Sheikhpura (Business Recorder, 25th August 2021).

Ten million trees that will be planted will be monitored for growth through technology provided by Tech giant Huawei and relevant authorities would be intimidated via sensors if a tree was





being cut down. It is estimated that the project will create employment for one million people and contribute US\$40 billion to national economy.

Senegal and Ghana Sign Climate Pacts with Switzerland

Senegal is greatly focusing on renewable energy and has built the largest wind farm in West Africa. To further offset its CO₂ emissions, Senegal has entered into an Agreement with Switzerland that will allow Swiss companies to invest in Senegal to help achieve the objectives of the Paris Agreement. Under this partnership, biogas plants are being installed on farms in Senegal with investments from Switzerland to help reduce the consumption of firewood and charcoal in the country (SWI, 6th July 2021).

In a similar vein, Ghana has signed an innovative "Climate Cooperation Agreement" with Switzerland to promote climate protection. As part of the agreement, a National Clean Energy Access Programme in Solar and improved Cook stoves will be implemented over a 10-year period. The accord, that will be implemented through the private sector, will have the financial backing of US\$20 million from the Swiss government (Pulse Ghana, 8th July 2021).

Novel Antibiotic Compound Discovered by Nigerian Scientists

Scientists in Nigeria have discovered a promising antibiotic compound from the waste (sludge) of industries located in the Ogun State Industrial Estate in the southwest of Nigeria (The Conversation, 13th August 2021). In their study, the scientists found six fungal isolates with potential to produce antibiotics. Out of the six isolates, the fungus *Geotrichum candidum* OMON-1 produced a novel compound that stopped the growth of and ultimately killed the bacterium *Staphylococcus aureus*. The discovered compound has been identified as "carboxymethylcystyl-asparagyl-aspartate" – a peptide with three amino acids in its sequence and has a low molecular weight compared to known antibiotics.

World's Largest Medical Drone Delivery Network Launched in Ghana

The world's largest medical drone delivery network has been launched in Ghana by Zipline, a health-tech drone delivery company (The NEWS, 7th August 2021). Once functional, the company will make 500 flights per day from each service centre making on-demand, emergency deliveries of

148 different vaccines, blood products and medications and will operate 24/7. Also, each centre will be equipped with 30 drones and deliver to 2,000 health facilities, serving 12 million people across the country.

Egypt's Efforts Towards SDGs

The Egyptian Ministry of International Cooperation has secured finances worth \$2.36bn from various development partners for the launch of 36 education and scientific research related projects across 74 locations in the country (Daily News Egypt, 14th August 2021). These projects will help the country achieve the various goals of UN 2030 Agenda for Sustainable Development.

Funding secured from various regional and international partners will be employed, inter alia, for the following purposes:

- Execution of US - Egypt Higher Education Initiative to increase access to quality education and strengthen the institutional capacity of the country's higher education through partnerships between Egyptian and American universities;
- Inauguration of second phase of King Salman International University (KSIU) as a way to enhance higher education opportunities for residents of the Sinai Peninsula;

- To supply research and educational equipment to the Egypt Japan University of Science & Technology (E-JUST) to support the performance of university's educational content in the undergraduate Faculty of Engineering;
- To improve the technical and vocational training, employ youth, and increase market competitiveness.

Ghana to Showcase ST&I Initiatives

The Ghanaian Ministry of Environment, Science, Technology and Innovation (MESTI), COMSATS' Focal Point in Ghana, is starting an initiative dubbed, "MESTI Visibility Project" to showcase success stories of projects undertaken by the Ministry and its agencies through the application of science, technology and innovation (Business Ghana, 8th August 2021).

The Ministry would provide a common platform for all of its agencies to showcase their programmes and initiatives that have a useful impact and sustaining livelihoods but unknown to larger population.

Zimbabwe Transitions Towards Clean Energy

Zimbabwe is currently resorting to power imports from neighboring countries of Mozambique and South Africa. However, the country aims to deploy 1 GW of clean energy capacity by 2025. Toward this end, Zimbabwe is constructing seven solar PV projects with a combined capacity of 66.6 MW.

The largest of these projects is a solar plant under construction in Matabeleland North province with a capacity of 25 MW (PV Magazine, 1st July 2021).

Faster COVID-19 Test Developed by American Scientists

Scientists at the National Eye Institute (NEI), NIH Clinical Center (CC), and the National Institute of Dental and Craniofacial Research (NIDCR), United States, have developed a novel sample preparation method to detect SARS-CoV-2, the causative agent of COVID-19 disease. The method bypasses extraction of the virus genetic RNA material hence simplifying sample purification and potentially reducing test time and cost (Science Daily, 16th August 2021).

In their study, the team used a chelating agent, resin, to preserve viral RNA in samples for detection by quantitative reverse transcription PCR (RT-qPCR). Nasopharyngeal and saliva samples with various virion concentrations were analyzed and viral RNA was detected with markedly high sensitivity. The preparation also inactivates the virus making it safer for lab personnel to handle positive samples. Besides, the method stabilizes the RNA at room

temperature for easier transport, storage, and handling in clinical settings.

Water Project inaugurated by Ghanaian President

The President of Ghana (Chairperson of COMSATS), Hon. Nana Addo Dankwa Akufo-Addo, has inaugurated a community water project to make potable water easily accessible to the people of Brosankro and adjoining communities in the Tano South Municipality of the Ahafo Region of Ghana (Ghana Web, 13th August 2021).

Powered by solar energy, the facility has the capacity to pump 132,000 gallons of water per day that will serve more than 8,000 rural populations. It has a public stand pipe that uses a smart tap device and a battery to store energy and is technologically designed in a way that could also be connected to households.

Started in 2019, the "Brosankro Small Town Water Project" was funded by World Bank and was aimed to achieve Goal 6 of United Nations Sustainable Development Goals (SDGs).



Scholarships/Fellowships for Member States by COMSATS' Centres of Excellence

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-graduate scholarships, for Masters of Science in Mathematics at Lahore Campus of COMSATS University Islamabad (CUI), in collaboration with the International Centre for Theoretical Physics (ICTP), Italy.
- 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.
- Two (02) PhD scholarships at the Al-Farabi Kazakh National University (KazNU), Kazakhstan.
- Long-term (1-2 years) and short-term (less than 6 months) fellowships for foreign scholars for collaborative research at Tianjin Institute of Industrial Biotechnology (TIB), Chinese Academy of Sciences.

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

Call for Applications

2022 OWSD-Elsevier Foundation Awards

Early-career women scientists from scientifically and technologically lagging countries (STLCs) are invited to apply for OWSD-Elsevier Foundation Awards. The candidate's current scientific research should be related to the area of "Climate action and the environment" and should have made demonstrable contributions to the achievement of the SDG13 (Climate Action), SDG14 (Life Below Water) and/or SDG15 (Life on Land).

Deadline: 28 October 2021

For details and application, visit:

<https://owsd.net/call-applications-2022-owsd-elsevier-foundation-awards>

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COMSATS Secretariat is saddened by untimely demise of one of its most valued employees. Having worked for COMSATS Secretariat for two decades, Mr. Yousaf, 50, passed away on 30th August 2021, leaving his family and colleagues at COMSATS Secretariat bereaved. He succumbed to heart attack while recovering from stroke triggered by COVID-19 last year. Known for his sense of responsibility and rendering services with a smile on his face, Yousaf will always be remembered for his pleasant personality, compassion, and good mannerism.



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.