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OIC MINISTERIAL STANDING COMMITTEE ON SCIENTIFIC AND TECHNOLOGICAL COOPERATION

From Coordinator General's Desk

Prof. Dr. M. Iqbal Choudhary H.I.,S.I.,T.I. Mustafa (pbuh) Prize Laureate

The catastrophic floods in Pakistan have caused human tragedy of epic proportion. The nation has faced nothing of this sort before. Similar climate extremities are regularly unfolding in many other OIC member states. Tropical cyclones in Mozambique, forest fires in Turkey, desertification and prolonged drought in Sahel regions, disappearing land mass due of sea level rise in Bangladesh, Indonesia, and the Maldives, and heatwave in MENA region are some of the devastating implications of fast occurring climate change. According to UN-COP 27 (Egypt), the planet earth is at the brink of point of no return, called "climate tipping point". To effectively tackle these challenges, all nations have to work together and the resources for global climate actions must come from rich countries.

Unfortunately, countries of the Global South, where most of the OIC member states located, are the most vulnerable, and direct affectees, while their contributions in green-house gas emission is only minimal. This situation demands collective action,

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Iran supports COMSTECH activities for the development of OIC states, Ali Hosseni

COMSTECH in collaboration with Inter-Islamic Network of Science and Technology Parks in Iran inaugurated two-day International advanced training course on Intellectual property, at COMSTECH.

The inaugural session of the training was presided by the H. E. Mr. Seyed Mohammad Ali Hosseni, the Ambassador of Islamic Republic of Iran. He said the goal of COMSTECH is to help in promoting of bilateral and multilateral relations of Islamic countries in the development of science and technology and scientific capacity building, the important steps have been taken and there is a long way to go.

Mr. Hosseni said that Islamic world is full of talent and human capital which needs to be tapped for the development of Islamic world. He said that Islamic Republic of Iran always supports COMSTECH activities and hosts COMSTECH Networks in the fields of intellectual property and virtual universities of Islamic world.

Mr. Hosseni said that intellectual property rights preserve and protect the right to benefit from thought and creativity and transform it into economic value. He said maintaining the ownership and rights are particularly important for the development of regional trade. He suggested that the Islamic countries should consider it as one of the main prerequisites for the development of regional trade.

Mr. Hosseni said that Iran and Pakistan are two brotherly countries and have deep religious, cultural and historical ties and have been living together in peace and friendship for more than 7 decades.

The Coordinator General COMSTECH, Prof. Dr. M. Iqbal Choudhary said in his welcome speech that I feel proud to welcome the Chief Guest, H. E. Ambassador Hosseini.

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Translate Science in Urdu, Iqbal Advised the Father of Urdu Molvi Abdul Haq, Walid Iqbal

COMSTECH organized a webinar on "Allama Iqbal's Perspective on Science and Technology" which was delivered by Senator Walid Iqbal, the grandson of Allama Dr. Muhammad Iqbal.

Mr. Walid said that a few are aware that Iqbal had a complete understanding of all contemporary disciplines and had deep understanding of the scientific developments and philosophical debates of the 20th century. He said that Iqbal was well versed with the science and the science of anatomy and the latest inventions in the fields of engineering and technology.

He said that Iqbal's poetry and philosophical thoughts are not only a combination of the impact of modern scientific developments but also contain

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COMSTECH Organizes Awards Investiture Ceremony in Tehran

COMSTECH organized the awards investiture ceremony in collaboration with Mustafa (pbuh) Science and Technology Foundation (MSTF) to honor the award winners of COMTSTECH Award 2021 from Islamic Republic of Iran. The ceremony was held at the Ministry of Science, Research and Technology (MSRT), Tehran.

The Acting Minister for International Cooperation, Dr. Vahid Haddadi Asl, the Vice Minister for Research, Prof. Dr. Peyman Salehi, and the Deputy Minister for Technology and Innovation, Prof. A. Kheroddin, of MSRT attended the ceremony. The CEO of MSTF, Mr. Mehdi Saffarinia, and the heads of three COMSTECH Networks hosted by Islamic Republic of Iran attended the ceremony. The representative of the Ambassador of Pakistan in Iran, Ms. Ambreen Gul Shahid, Press and Cultural Attache joined the event.

Two Iranian scientists, Prof. Ali A. Mosavi-Movahadi and Dr. Esmael Ghavanloo won the

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CG COMSTECH Calls on the Head of OIC-CERT

Coordinator General COMSTECH, Prof. Dr. M. Iqbal Choudhary, called on Senior Vice President of International and Govt. Engagement Division and Head of Organization of the Islamic Cooperation - Computer Emergency Response Teams (OIC-CERT), Mr. Mohd Shamir Hashim, on 10 August 2022 at Menara CyberAxis, Cyberjaya, OIC-CERT Secretariat, Malaysia.

Mr. Hashim gave a brief presentation on the activities of OIC-CERT and discussed the mechanism and highlighted the key areas of implementation. He informed that OIC-CERT would participate in the Steering Committee meeting of the Implementation of OIC STI Agenda.

Both the heads of organizations discussed ISO IEA 17001 certification, whereas OIC-CERT offered organizing online certificate courses together with COMSTECH along with jointly organizing an international conference with COMSTECH.

OIC-CERT is an affiliate institution of the OIC with the vision to be a leading cyber security platform to make the world a safe cyber space and the mission is to provide a platform to develop cyber security capabilities.♦

CG COMSTECH Calls on ED INTROM and Director IMR, in Kuala Lumpur

Coordinator General COMSTECH, Prof. Dr. M. Iqbal Choudhary invited the head of Inter-Islamic Network on Tropical Medicine (INTROM), Dr. Murizal Zainol, and Director Institute of Medical Research (IMR), Dr. Tahir Aris, at a breakfast meeting on August 10, 2022 at Concorde Hotel, Kuala Lumpur, Malaysia. Dr. Ahmad Faudzi Yusoff of International Collaboration Secretariat, IMR, National Institute of Health, Ministry of Health, Malaysia also attended the meeting.

The issues related to the activation of INTROM and potential collaboration with the IMR were discussed in detail. It was agreed that INTROM will submit the Act for establishment of its secretariat to the Malaysian parliament again to support and establish the permanent secretariat and provide regular annual

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CG COMSTECH Calls on the High Commissioner of Pakistan in Malaysia

Coordinator General COMSTECH, Prof. Dr. M. Iqbal Choudhary, had a meeting with the High Commissioner of Pakistan in Malaysia, H.E. Ms. Amna Baloch. The meeting was held at the Pakistan High Commission in Kuala Lumpur, Malaysia.

Coordinator General COMSTECH proposed the establishment of an alliance of the Islamic universities whose founding meeting to be held in Islamabad. The High Commissioner liked the proposal and assured her support. The High Commission of Pakistan in Kuala Lumpur is the member of board of governors of the International Islamic University, Malaysia, and is also a focal point of ASIAN region.

Coordinator General also briefed the High Commissioner about the MiGHT and TUBITAK joining of COMSTECH Consortium of Excellence.

Both the dignitaries discussed the avenues of COMSTECH and ICCBS collaboration with Malaysia. The High Commissioner and the Coordinator General agreed to structure the fellowships program for Malaysia and other ASIAN member countries and to launch this program in consultation with the Ministry of Foreign Affairs of Pakistan. ♦

Pakistan's Food Security Challenge Needs a Systematic Approach, Experts Urge

The International Symposium on "Climate Smart Sustainable Rice and Wheat Production System" was held at the Faculty of Agriculture, University of the Punjab in cooperation with COMSTECH, UPSIGN, SAWIE, SACAN & Dawood Agro.

The keynote talks of eminent scientists emphasized design policies, indigenous farming solutions, and better management of the most important resources of soil and water to address the climate change crisis.

Chairman PHEC, Prof Shahid Munir inaugurated the symposium saying that food security is strategically important for Pakistan to feed its growing population, and the research and industry linkages could play a vital role in developing new technologies and promoting farmers to enhance their yield under the changing climatic conditions.

Prof. Munir said that the per capita annual water availability in Pakistan has dropped to 1,017 cubic meters from 5300 in 1947 and may lead to absolute water scarcity by 2025. He said this will result in severe water shortages for the next generation of farmers. Future water requirements and challenges impose a serious threat to Pakistan due to its agrarian economy where wheat and rice are primary food crops, he informed. There is an urgent need to develop innovative solutions for efficient and sustainable use of water, improving nutrient use efficiency, reducing the crop losses from pests & diseases both pre & post harvesting, and thus requires utmost priority in our national planning, he suggested. We have seen unprecedented weather events happening this year, post-Covid-19, the extreme heat early in March, and the early monsoon affected our food production, he noted. Prof. Munir mentioned that Pakistan will be importing 4 million tons of wheat this year to meet its food demand, which is quite an alarming situation for our nation.

Program Manager COMSTECH, Ms. Khazima gave an overview of COMSTECH's support for promoting science and innovation in the Muslim world to tackle the food security challenge.

Dean Faculty of Agriculture Prof. Saleem Haider, welcomed the delegates who joined in-person and online audiences from Canada, the UK, the USA, India, Pakistan, and other countries.

Co-founder UPSIGN, Dr. Khalid Mahmood said that we are delighted to work with Punjab University and the industry to discuss the important subject of the Rice and Wheat system to address food security under the climate change crisis. He said we need to better build collaboration, cooperation, and communication among all the stakeholders.

Dr. Mahmood Farooq from Sultan Qaboos University said that Pakistan is one of the most vulnerable countries severely affected by climate change causing unprecedented droughts, floods, the influx of pests, diseases and locust attacks in 2020, and the severe heatwave in 2022 affecting wheat crop. The heavy rains and hailstorms have adversely impacted the wheat crop with reducing yields by 25% to 30% in 2020.

CEO of SAWIE/SACAN, Eng. Mushtaq Gill (TI), said Pakistan needs to address its Rice and Wheat system on an emergency basis. Wheat prices around the world are soaring due to the Ukraine war and the climate change crisis. Pakistan is ranked 77/113 in the Global Food Security Index, 71/113 for food affordability, and 74/113 for food quality and safety, having few food safety net programs, and scoring 40.5% below average.

Director of Rice Research Institute, Syed Sultan Ali, said our Rice production is 100% dependent on flood irrigation which consumes 35% of total water available in the country. Its future is at risk if we do not promote sustainable practices. Rice crop supports foreign exchange earnings by more than $2.5 billion.

Director General Punjab Agriculture Research, Mr. Muhammad Nawaz Khan, chaired the first session and shared developments of the Punjab Agriculture Department to develop climate-smart varieties to address the water scarcity and heat challenge. He said that Rice and Wheat crop yields in Pakistan are low compared to the rest of the world due to an array of factors such as water shortage, crop pests & disease infestations, and improper use of fertilizers like nitrogen.

Director of Wheat Research institute, Dr. Javed Ahmad said AARI is taking a challenge in developing new germplasm to tolerate drought and heat and also improving the nutrients uptake.

Dr. Abdul Wakeel, from the University of Agriculture Faisalabad, said that the nutrient use efficiency of wheat and rice crops is the lowest in the region. We use more nitrogen fertilizer compared to other countries in the world. Only one-third of the nitrogen is available to plants and the rest all gets wasted. This is not only a loss for the farmer but causing damage to our environment due to NO2 emissions.

International speaker, Prof. Bijay Singh from Punjab Agriculture University Ludhiana said, there is a dire need for a second green revolution to enhance our grain yields based on developing strong communication links between farmers, academicians, planners, and politicians.

Mr. Abdul Hanan explained the features of SAWIE App that are available for farmers for free. SAWIE outreach program is supporting more than 0.6 million

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SPCAI and COMSTECH Organize International Workshop on Artificial Intelligence

Sino-Pak Center for Artificial Intelligence (SPCAI) located at Pak-Austria Fachhochschule: Institute of Applied Sciences (PAF-IAST), and COMSTECH co-organized an International workshop on the role of Artificial Intelligence (AI) in healthcare, agriculture and energy sectors to showcase and debate emerging AI technologies and innovative practices at the COMSTECH Secretariat.

The workshop started with the keynote address by Prof. Dr. Atta-ur-Rehman, Former Chairman, Prime Minister's National Task Force on Science and Technology, Pakistan. Prof. Atta shared his views about the impact of AI on various walks of everyday life. He appreciated the remarkable increase of per capita international research publications in the country.

The inaugural session of the event was also addressed by the chief guest, Mr. Mohsin Mushtaq, Additional Secretary IT and Telecommunication, Dr. Atif Mashkoor, Managing Director SPCAI, Dr. Mohammad Mujahid, Rector PAF-IAST and Prof. Dr. Syed Khurshid Hasanain, Advisor COMSTECH.

The workshop comprised on three technical sessions on healthcare, agriculture, and energy respectively. Each session was addressed by three field experts and followed by panel discussion. The workshop was attended by more than 300 participants in-person and many joined online.

SPCAI is a center of excellence in AI and has been empowering the innovation ecosystem. It has recently invested 65 million rupees in research and development in its Lab2Market project to build national capacity in the emerging field of artificial Intelligence.

COMSTECH is an OIC Ministerial Standing Committee on Scientific and Technological Cooperation headquartered in Islamabad and works for the socio-economic development of OIC member states.♦

COMSTECH and PNAC Cerebrate Accreditation Day

COMSTECH and Pakistan National Accreditation Council (PNAC) jointly celebrated the accreditation day by organizing a seminar on "Accreditation for Quality Assurance and Socio-economic Development in OIC Countries".

Secretary for Ministry of Science and Technology, Mr. Ghulam Muhammad Memon participated as the chief guest in the event. He said that this is an honor and privilege to address such an august gathering of scientists, policy makers and diplomats. He said today's event emphasizes the importance of accreditation and its role for socio-economic development. Mr. Memon said that sustainable economic growth and poverty reduction can be achieved by augmenting the international trade which can only be possible through robust accreditation, certification, quality and testing infrastructure recognized by the relevant international forums. He appreciated COMSTECH and PNAC joint initiative to strengthen accreditation bodies to enhance the conformity and assessment quality in Pakistan and least developed African countries.

The Assistant Secretary General of Organization of Islamic Cooperation, Ambassador Askar Mussinov said in his message that I am really delighted to have an opportunity of speaking at this event jointly organized by COMSTECH and PNAC. The OIC is at the same page in celebration of the accreditation day. He said that it is of immense importance to ensure the quality measurement for socio-economic development of any country. He said that accreditation and conformity assessment play major role in achieving technical competence, integrity and impartiality of organizations along with making them to conform with international standards. He said that International standards organizations also open ways to secure markets to provide sale able products. He said that accreditation organizations help in reducing the human impact on the environment. Mr. Mussinov commended COMSTECH for its numerous capacity building initiatives for the least developed member states to help them to acquire knowledge and skills.

Coordinator General COMSTECH, Prof. Dr. M. Iqbal Choudhary, welcomed the participants and shed light on the importance of accreditation for OIC member states. Prof. Choudhary said that accreditation is an extremely important approach towards standardization of the processes and products, analytical and diagnostic methods, scientific research or even business. He said that accreditation is now globally accepted as the gold standard of best practices in all forms of human endeavors. He briefed the audience about the large portfolio of S&T capacity building programs of COMSTECH in its 57 member states, as well as its role in Pakistan's science diplomacy initiative.

The Director General PNAC, Ms. Ismat Gul Khattak gave a comprehensive talk on the importance of accreditation in achieving sustainable economic growth. She talked about the PNAC initiatives and achievements. Ms. Khattak said that PNAC can collaborate with OIC member states to provide accreditation training, develop pool of assessors, help in capacity building, share experiences, conduct joint assessment, provide accreditation services and conduct peer evaluation.

The President of Kazakhstan National Center of State Scientific and Technical Expertise (NSCTE), Prof. Dr. Adil Ibrayev, joined the session through Zoom. He talked about the aims, objectives and current achievements of NSCTE. Prof. Ibrayev offered collaboration of NSCTE with COMSTECH, PNAC and the OIC member states to work together.

The event was attended by participants both in-person and online from different OIC member states.♦

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From Coordinator General's Desk

including major shift in consumption pattern, global alliance for mitigation, remediation, building climate resilient communities, and investment in ecosystem restoration.

We need to understand and appreciate the fact that we are the last generation of human race which can save the planet from the point of no return.

COMSTECH – OIC ministerial standing committee on scientific and technological cooperation, in collaboration of several international partners, including CILSS, UNEP, ICARDA, IOFS, Sahel Coalition, Royal Scientific Society, Centre for Water Research Technologies, Tunisia, POSTDAM Institute for Climate Impact Research, Germany and others are working to build cross boundary alliances for climate actions and ecosystem restoration. COMSTECH Forum on Environment and Ecosystem Restoration is a new but significant initiative. We wish to invite member states, relevant OIC institutions, and interested forums to join hands towards tackling the monumental challenges of climate change (www.comstech.org).♦

COMSTECH Contributes $5000 to Khwarizmi International Award

The Iranian Research Organization for Science and Technology (IROST) bestows with the Khwarizmi International Award (KIA) to recognize the efforts made by researchers, innovators and inventors from all over the world and to appreciate their invaluable achievements and contributions to various fields of science and technology.

COMSTECH has been contributing US$5000/- annually since Twelfth Khwarizmi International Award, in 2022 provided US$5000 for the 35th Khwarizmi International Award.

The Khwarizmi International Award is named after Muhammad ibn Musa al-Khwarizmi, the Iranian mathematician and astronomer, in memory of his achievements.

The Khwarizmi International Award consists upon an engraved trophy, certificate — with inscription of the awardee's contributions, and the signature of H. E. the President of the Islamic Republic of Iran and the Chairman of the KIA — a valuable Prize, and the four-day academic visit to the Islamic Republic of Iran, including the delivery of lectures at different scientific institutions.

The award is personally presented to the KIA Laureates by His Excellency, the President of the Islamic Republic of Iran.♦

Webinar on Machine Learning for Sustainable Urban Development

COMSTECH organized a webinar on "Machine Learning and Data Driven Policy Making for Sustainable Urban Development". Dr. Zubair Khalid, Associate Professor of Electrical Engineering, Lahore University of Management Sciences delivered this webinar.

Dr. Zubair talked about the methods of use of technology, data and machine learning to design data-driven policy making for sustainable urban development.

He said Pakistan is facing a grand challenge of runaway urbanization, and said we are trying to address this challenge by using data, technology, and machine learning.

Dr. Zubair informed that we are looking at urban sprawl, mobility, environment and health issues. He said that developing countries don't have planned urbanization, have mobility issues to address, and there is no adequate waste management systems and air pollution is causing health problems.

Dr. Zubair said we are using technology and data to make evidence based decision making to address these problems. He said along with this we are trying to address social issues of acceptability, inclusivity, equity and transparency of any intervention or policy introduced to the society for the development of sustainable urban communities.

He said our aim is to collect massive urban data by introducing openly accessible technology solutions for data collection, novel algorithms and software toolset for data analysis to make data-driven decision making and evidence based policy design possible.

Dr. Zubair informed that they are working with many state and private institutions to use their data and introduce and implement technology and data based policies for solving problems being faced by the urban community.

Dr. Zubair Khalid is currently working as Associate Professor of Electrical Engineering, and also looking after Smart Data Systems & Applications Lab, at Lahore University of Management Sciences.♦

Iran supports COMSTECH activities

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He said this advanced course is jointly being organized by COMSTECH and Inter-Islamic Network on Science and Technology Park (INSTP), Iran.

He said INSTP is one the thirteen networks, established by COMSTECH General Assembly. I am pleased to report here that Islamic Republic of Iran hosts three of these networks which are contributing towards the science and technology development of the OIC region.

Prof. Choudhary said that Innovation in technology is moving very fast and a credible intellectual property system is a powerful stimulus to such innovation. The protection of intellectual property rights (IPRs) greatly influences investment decisions, both in industrial sector as well in research and development. However, nations can only benefit from the innovation potential of their scientists and technologists if they have the competence and capacity to protect their IPRs both nationally and internationally to translate them into saleable products and services for socio-economic development.

He said that IPRs is now the backbone of global trade and business and mentioned that in 2020, developing countries have paid 340 billion USD in royalties for the use of IP, and received 80 billion USD. A large portion of innovation of developing world is either wasted or pirated due to the lack of IPRs policies and practices. He said that nations and individuals build their capacity to protect their intellectual capitals and use them for socio economic development.

The Ambassadors of Yemen, Iraq and Sudan participated in the inaugural session along with the participants from Uzbekistan, Malaysia and Iran. Over 300 participants, including over 230 online participants from some 11 countries, are participating in this important event.♦

COMSTECH Organizes Awards Investiture Ceremony in Tehran

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COMSTECH awards 2021 in the fields of Chemistry and Best Scientific Book respectively, were honored in the ceremony. The COMSTECH award comprises upon a shield of honor, certificate of award and cash prize.

A two-member delegation of COMSTECH comprising upon Senior Director HR and Administration, Syed Aftab Hussain Zaidi and the Executive Secretary, Mr. Mohammad Ameen Kalroo, participated in the ceremony.♦

CG COMSTECH Calls on ED INTROM and Director IMR

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funding from the government of Malaysia. It was decided that further discussions on the collaboration between COMSTECH, IMR and INTROM will remain continued.

COMSTECH will help IMR/ INTROM to disseminate information about their activities including seminars, webinars, and online lecture series, and the Director IMR, Dr. Tahir Aris will identify some tropical medicine experts from different OIC member states as COMSTECH distinguished scholars, agreed in the meeting.

COMSTECH will provide travel support to scientists from Cote de Ivoire and African least developed countries for participation in IMR/ INTROM short training courses, and COMSTECH will also help INTROM to expand its membership.♦

Translate Science in Urdu, Iqbal Advised the Father of Urdu Molvi Abdul Haq

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impressive predictions on the basis of his study of modern science.

Mr. Walid said that in poetry, lectures and particularly the reconstruction of religious thought in Islam, Iqbal had benefitted from the modern scientific theories.

He said Iqbal was in firm belief that Muslim students should get involved in scientific education in order to meet

the modern day challenges. He informed that Iqbal advocated the translation of scientific books into Urdu so that Muslim students can understand scientific concepts.

He mentioned that in 1932, Iqbal advised the father of Urdu Moulvi Abdul Haq, that he should understand the need of the hour and translate books of science into Urdu to help Muslims to extricate themselves from the world of fantasy and to step into the field of real knowledge.

He said that Iqbal was in the view that Muslims had failed to understand that it was the religion of Islam which has furnished to the world the basic perquisites of scientific study.

He mentioned many examples of the predictions of scientific discoveries Iqbal wrote about many years before their actually discovery.

Mr. Walid said that Iqbal remained obsessed, with the past glory of the Muslims and the sorts of attitude that they had towards science and learning, and what happened to the Muslims after the decline of Islamic civilization.

Mr. Walid Iqbal gave a very comprehensive talk on Iqbal's scientific, social, religious and philosophical thoughts by elaborating his verses and quoting several biographers of Iqbal.♦

Pakistan's Food Security Challenge Needs a Systematic Approach

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farmers across Pakistan to provide the knowledge base and smart weather & crop advisory.

Mr. Yayah Hameed from Bank Alfalah supported the need for investment in farm machinery to promote essential climate-smart practices at the farm level.

Mr Adil Farooq, from Dawood Agro, said, through mechanical planting, we can increase the plant population of 120,000 plants per acre to achieve 40 mounds yield compared to 15 mounds. This will help to spare land to grow other crops.

FAO in charge of Conservation Agriculture, Prof Kassam said that we need to educate our farmers about conserving our natural resource soil and water by promoting practices like zero tillage method, optimal agronomic practices such as balanced application of fertilizer & irrigation schedule that not only improve input use efficiency but also will make the Rice and Wheat production system more sustainable in the context of environment and economics.

Progressive farmer, Mr. Sultan Bhatti shared his experience on his farm in Sukiki. Mr Bhatti said he has not burned his Rice straw and any other farm residues for the last 10 years. He is using minimum tillage. As a result of this, his soil health has improved, the biological population has increased, and his soil structure improved resulting in better water holding capacity. He said that this simple intervention has helped to increase yield for both Rice and Wheat crops.

Chairman Soil Science Department, Dr. Rashid Mahmood said that Punjab University is committed to work with the industry partners to promote knowledge and good practices for enhancing agriculture and food production through climate-smart agriculture, water conservation, and to save biodiversity and ecosystem.

Dr. Tahir Awan from PARB shared his experience of the Dry Seeded Rice method and the need for herbicides to address weeds.

Eng. Faakhar from PCRWR said, they are providing irrigation advisory to farmers and are keen to share their knowledge of using IoT and sensors to help farmers cut down water consumption by 40%.

In concluding remarks, Dr. Abdul Majid from ICARDA said, there is an urgent need to adopt green practices in agriculture, such as conservative and regenerative agriculture along with transitioning to sustainable food production.

Former Chairman of Pakistan Agriculture Research Council, Dr. Muhammad Azeem Khan said that we need to bring a system thinking to address the climate change crisis, issue of crop productivity, and improving farmer's income.

Director ORIC, Virtual University, Dr. Arshad Hashmi said that VU has four TV channels and campuses across Pakistan and is keen to support the digital literacy of farmers, especially women to take advantage of smart farming solutions.

Eng. Zakir Sial emphasized the need for judicious use of groundwater, utilization of renewable energy sources, building existing clean energy capacities, low-carbon mass transit systems, water conservation/preservation mechanisms, and improving irrigation water use efficiency aimed at reducing and curbing the wastage of precious water & GHG emissions.

Ms. Farah Naz from GAIN said we need to promote the seed varieties and use of balanced fertilizer with trace elements of Zinc & Boron to address malnutrition in Pakistan.

At the end the participants of the symposium recommended the need for developing a center of excellence in conservation agriculture and digital climate-smart farming solutions at Punjab University.♦

CCoE Member Institutions

Webinar on Genomic Characterization of Neuromuscular Disorders in Pakistan

COMSTECH, Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD), Royan Institute, Mustafa (pbuh) Science and Technology Foundation and Sindh Innovation, Research, and Education Network jointly organized international webinar on "Genomic Characterization of Neuromuscular Disorders in Pakistan".

This was the third webinar of the PCMD-Royan Institute webinar series. This webinar series is a joint venture of PCMD and Royan Institute, Iran. It is held physically in Pakistan and Iran and people around the world join these webinars online. COMSTECH, Mustafa (pbuh) Science and Technology Foundation and Sindh Innovation, Research, and Education Network provide support in the organization of these webinars.

Dr. Ishtiaq Ahmad Khan, Associate Professor at the Dr. Panjwani Center conducted this webinar. He talked about the genomic characterization of neuromuscular disorders in Pakistan. He said neurological disorders are heterogeneous group of disorders, they affect the peripheral and central nervous system. Dr. Ishtiaq talked about neuromuscular disorder and presented the current status of the prevalence of this disorder in Pakistan. He said Pakistan lies in the region which is under high burden of neuromuscular disorder and the basic reason is consanguineous marriages.

Dr. Ishtiaq mentioned that neurological conditions pose a great diagnostic challenge due to complex clinical presentation, phenotypic overlap, and rare disorders. He said that next generation sequencing and bioinformatics are very helpful in diagnosing neurological disorders.

Dr. Ishtiaq said that Jamil-ur-Rahman center for genomics research center at the ICCBS is first genomics facility of Pakistan. He said this center is providing training to researchers from all over Pakistan.

Dr. Ishtiaq Ahmad Khan is Associate Professor at the Dr. Panjwani Center. He is Ph.D. from the H. E. J. Research Institute of Chemistry, ICCBS, University of Karachi, and is post-doctorate from the Beijing Genomics Institute, Shenzhen China, and the Sanger Wellcome Institute, Cambridge.

His research group is working on microbial, viral, and human disease genomics. During the current pandemic, his group carried out genomic surveillance studies on SARS-CoV-2 and contributed to informed decision-making at the national level. ♦

News from OIC Member States

SIERRA LEONE

Sierra Leonean Student Wins Inaugural $100,000 Global Student Prize

Jeremiah Thoronka, a student from Sierra Leone who invented a device that uses kinetic energy from traffic and pedestrians to generate clean power, has been named the winner of the Chegg.org Global Student Prize 2021.

Jeremiah is the first winner of this new $100,000 award, which is given to one exceptional student who has made a real impact on society.

Jeremiah, a 21-year-old student from Freetown, Sierra Leone, was selected from over 3,500 nominations and applications from 94 countries around the world.

Actor and humanitarian Hugh Jackman announced Jeremiah as the winner of the inaugural Chegg.org Global Student Prize as part of a virtual ceremony broadcast from UNESCO's headquarters in Paris.

The Varkey Foundation launched the Chegg.org Global Student Prize earlier this year, a sister award to its $1 million Global Teacher Prize, to create a powerful new platform that shines a light on the efforts of extraordinary students everywhere who, together, are reshaping our world for the better.

The prize is open to all students who are at least 16 years old and enrolled in an academic institution or training and skills program. Part time students as well as students enrolled in online courses are also eligible for the prize. This year also saw US teacher Keishia Thorpe named as the winner of the Global Teacher Prize 2021.

Jeremiah Thoronka was born amid the fighting of the Sierra Leone civil war and grew up with his single mother in a slum camp for displaced people on the outskirts of the capital Freetown, having to burn charcoal and wood for lighting and heating. Jeremiah young contemporaries fell behind in their schoolwork

because of a lack of decent lighting. Jeremiah will use the prize money to expand Optim Energy to reach 100,000 people by 2030.

Dan Rosensweig, CEO & President of Chegg said Jeremiah's work is inspirational and pioneering clean, affordable energy makes him a thoroughly deserving winner of the inaugural Chegg.org Global Student Prize. ♦

BURKINA FASO

Burkina Faso Providing Urban and Rural Students Equal Opportunities to Study Science

OUAGADOUGOU, January 13, 2022: In 2017, Burkina Faso embarked upon a program to build high schools for the teaching of science in all 13 regions of the country. The most deserving students can now attend these institutions, which prepare them to excel at the tertiary level and put them on track to fulfilling their childhood dreams. The high schools for the teaching of science have become centers of excellence that foster equality between girls and boys, as well as between rural and urban youth.

One of these schools is the Science High School of Ouagadougou built in 2017 and financed by the World Bank through the International Development Association. Since its opening the school has consistently recorded 100% pass result in the Baccalaureate," says Jean Paul Boumboundi, headmaster of the school.

To deal with the dire shortage of secondary schools for the teaching of the science, the Government of Burkina Faso is planning to build at least one science high school in each of the 13 regions of the country. Statistics from the Ministry of National Education, Literacy and the Promotion of National Languages reveal that, to date, there are 14 affiliated science high schools, with two national schools (in Ouagadougou and Bobo-Dioulasso), and 12 regional science high schools. A total of 1,175 students are enrolled in these institutions, with 727 boys and 448 girls. Students come from all over the country, and are chosen on the basis of their performance in the Brevet d'Étude du Premier Cycle (BEPC). ♦

MOROCCO

Morocco Establishes Its First Green Hydrogen Production System

Rabat - Morocco's Research Institute for Solar Energy and New Energies (IRESEN) announced that it "successfully completed" the installation of its first micro-pilot green hydrogen production system.

The pilot project consists of an electrolyzer with a capacity of 20kW and photovoltaic (PV) solar panels. The electrolyzer used to produce carbon-free hydrogen from water will undergo tests in the upcoming days.

Besides producing green hydrogen that will be used to generate green ammonia, green methanol, and green fuels, the micro-pilot will train and upskill students, researchers, engineers, technicians, and managers from IRESEN, Mohammed VI Polytechnic University (UM6P), the National Hydrogen Commission and the Green H2 Morocco Cluster.

Incubated in the Green Energy Park of Benguerir, the project is part of the "Power-to-X μPilot" launched by IRESEN and UM6P. It is set to advance sustainable mobility and renewable electricity storage in Morocco, using hydrogen and fuel cells.

As Morocco continues to invest in upgrading its already largely advanced renewable energy infrastructure, numerous recent reports have confirmed the country's potential to produce green hydrogen at a low cost to meet domestic demands and even support energy security in Europe.

In June, the International Renewable Energy Agency (IRENA) reported that Morocco is expected to have the third lowest green hydrogen production cost in 2050, ranging between roughly $0.7/kgH2 and $1.4/kgH2.

The kingdom ranked third behind China and Chile, placing it ahead of well-established players in the global energy sector such as Australia, Mexico, India, and US. ♦

KAZAKHSTAN

Kazakhstani Scientists Present Unique Technology to Solve "The Millennium Problem"

NUR-SULTAN, KAZINFORM: The researchers from Kazakhstan had found a possible solution to the second of the seven "millennium problems" - the problem of equality of P and NP classes. Its essence is as follows: if a positive answer to a question can be quickly checked, then can the answer to this question also be quickly found? The presentation of the algorithm took place at the site of the National Pavilion of the Republic of Kazakhstan as part of Expo 2020 Dubai.

This is a complex problem of modern computer science and its solution can fundamentally change the principles and speed of computer manipulation processes of any type of data.

To the present day, only the Poincaré conjecture was solved, being a part of the most important classical problems in mathematics formulated by the famous Clay Institute. The institute had appointed a reward of $1 million for solution of each of these problems.

The new development can mean a gigantic step forward for the entire world community. The researchers have immediately proposed the practical application of their work results.

So, according to the results of 4-year period of scientific research, the scientists have created a polynomial algorithm for solving the NP-complete problem. This is a computer code, and reliable data analysis results can be obtained faster than any existing exact methods with it.

The scientific discovery was made under the guidance of the Kazakh scientist Bakhytgerey Sinchev - the Doctor of Technical Sciences, Professor of the International University of Information Technologies, one of the developers of automated on-board control systems of "Buran" spacecraft.

According to developers, the algorithm is able to produce accurate results faster than any existing methods. Thus, all computer modeling tasks requiring large time and material resources can be accomplished much more quickly.

The scientists have tested the mechanics of the technology and its effectiveness on the example of competitive task posted on specialized portal of Kaggle.com to detect the coronavirus infection. The Kazakhstani team have managed to find a solution 10 times faster than the best algorithm presented on the resource.

The technology can change the future of all mankind having gained practical application in all sectors of the economy. The authors of the project have received the patents for developed technology (including USPTO patents) and scientific articles have been published in specialized journals. ♦

Editor
Ikram Abbasi, *Programme Manager*

Email Distribution
Usman Quddus, *Senior Manager IT*

Your views are welcome on: ikramabbasi@comstech.org

COMSTECH Secretariat, 33-Constitution Avenue,G-5/2, Islamabad-44000, Pakistan, Tele: (92-51) 9220681-3, Email: comstech@comstech.org,
URL: www.comstech.org