

NCP, AS-ICTP hold S&T conference

STAFF REPORT ISB: National Centre for Physics (NCP) in collaboration with Abdus Salam International Centre for Theoretical Physics (AS-ICTP) has recently concluded the five-day International Scientific Spring (ISS-2016) - Pakistan's premier conference on science and research which is playing a major role in the viable development of science and research of Pakistan since 2009.

The conference featured more than 20 foreign experts with national and international participants to discuss the current and future scientific research scenario.

During the concluding session, Dr. Ruffat M. Qureshi, Director of Laboratories, said that the ISS always provided a better platform to young researchers to interact and present their research work with foreign and local experts. The deliberations of the activity impart useful knowledge to young researchers.

Dr. Khurshid Hasanain, Scientific Secretary of Event, thanked the distinguished guests for their participation in the event. He said that objective of holding this activity is to provide significant attraction to young Pakistani researchers with knowledge of foreign experts. He thanked COMSATS and ICTP for their generous support in organizing this event.

Foreign speakers from Algeria, Switzerland, China, USA, Italy, Sweden, Turkey and Saudi Arabia During the five days conference more than 90 research papers were presented.

Effective mechanism vital to promote S&T culture

STAFF REPORT ISB: The Executive Committee of the National Commission for Science and Technology (ECNCST) has stressed the need for installing an effective mechanism where the culture of Science and Technology in the current era of knowledge based economy can flourish.

The meeting was held at the Pakistan Council for Science and Technology (PCST), Minister of Science and Technology Rana Tanveer Hussain and Minister for Planning and Development Prof. Ahsan Iqbal co-chaired the meeting.

The participants were informed that Research and Development (R&D) spending is considered as an important indicator of competitiveness of a country's economy. Pakistan's R&D spending, as per-centage of GDP, is consistently declining since 2006-07 and at present it is only 0.29 per cent of its GDP.

The meeting noted that realization of the importance of R&D, fast growing countries are either spending or have set targets of investment between one per cent to four per cent of their GDPs on research and development.

They proposed the government to gradually raise the national R&D spending up to two per cent of the GDP by the year 2023 and provide appropriate tax incentives for enhancing R&D activities in the industry.

Pakistan's R&D System that is mostly in the public sector has poor linkages with the public and private sector industry/firms. Therefore, it was proposed that measures be taken for ensur-



ing that the R&D activities are planned and executed in consultation and collaboration with the industrial sector.

This engaging private sector to share R&D funds as practiced in developed countries is also proposed. Furthermore, the government was requested to consider incentives to promote R&D at the industrial level and adopt different approaches to encourage and engage industry and civil society in patronage of R&D activities in the country.

To overcome the problem of brain drain, a uniform salary structure for scientists, engineers and technicians of R&D organizations was proposed along with service structure ensuring merit and performance based promotions.

In his opening remarks, Rana Tanveer Hussain expressed his confidence that valuable inputs of the participants would help a lot in achieving the objectives for which

ECNCST are established. Furthermore, as a result of this meeting the forum will be able to put up concrete proposals for the meeting the National Commission for Science and Technology (NCST) to be chaired by the prime minister in the near future.

Prof. Ahsan Iqbal in his welcome comments highlighted the value of science and technology in the current era of knowledge based economy and assured that despite of some odds the Government is committed to promote S & T activities provided the efforts are directed to market driven research with potential of application and entrepreneurship.

Earlier, PCST Chairman Prof. Anwar Ghani in his capacity as Secretary ECNCST presented the agenda and informed that it has been prepared in consultation with the relevant stakeholders. Out of a total of 29 members including Secretaries of different federal Min-

Dr Atta to head UN body on science, technology

STAFF REPORT KHI: The United Nations has appointed Prof. Dr. Ataur Rahman as chairman of the UN committee on Science, Technology and Innovation.

Prof. Rahman, who is former federal minister for science and technology, after appointment chaired the first meeting of the committee in Bangkok.

The UN Economic Social Commission for Asia and Pacific also held its meeting in Bangkok the same day, says a message received here.

A senior official of the International Centre for Chemical and Biological Sciences, University of Karachi, said that the committee discussed ways and means to promote science, technology and innovation among the member states.

Knowledge is transform-

ing the landscape of many countries who are investing in higher education and promotion of innovation



through applications of science and technology, he said.

Prof. Atta ur Rahman obtained his PhD in organic chemistry from Cambridge University in 1968. He has got 1,021 publications in several fields of organic chemistry and 188 books published largely by the European and US press. Prof. Rahman has also served as chairman of the Higher Education Commission of Pakistan.

UNIDO, ICCI start initiatives for women business growth

STAFF REPORT ISB: Islamabad Chamber of Commerce and Industry (ICCI) in collaboration with UNIDO has recently organized a ceremony to celebrate the Women International Day 2016.

Gender mainstreaming is

aimed at encouraging women entrepreneurs to embrace clean technology products that offered immense potential for business growth.

Speaking at the occasion, Amina Malik, PML (N) Women Wing Punjab, Vice President and Chairman FP-



one of the major focuses of the UNIDO Global Clean-

tech Innovation Programme (GCIP), which employs a competition-based ecosystem approach to identify the most promising entrepreneurs across the country. It works as a local business acceleration programme that supports, promotes and "derisks" the participating companies and connects them to the potential investors, customers, and partners.

At this occasion, UNIDO in collaboration with ICCI also launched "Women in Cleantech Program for SMEs and Startups."

CCCI International Trade & Investment Committee, said that women have vital role in the economic development of the country and assured for support in training and capacity building programs for women.

MOL starts award winning talent-hunt programme

STAFF REPORT ISB: The MOL Group has launched two of its award winning talent acquisition programmes Groww and Freshly 2016, in line with its strategy to attract top talents from different regions and to cater for its business needs.

According to a statement of the company, Groww is a one-year graduate programme offering a unique opportunity for young professionals to kickstart an international career and learn about one of the most complex industries. Candidates can apply online for Groww latest by mid-April.

This programme offers graduates more than 170 Groww positions varying



from engineering, economics, IT, natural sciences, and social sciences on group-level in 13 countries including Hungary, Austria, Slovakia, Germany, Serbia, Slovenia, Pakistan, Croatia, Romania, Bosnia & Herzegovina, Italy, Poland and Czech Republic.

Rs100m released for completion of HU building

STAFF REPORT MANSEHRA: Higher Education Commission (HEC) has issued a grant of Rs 100 million for completion of



the building was completely demolished and some partially damaged where educational activities were not possible.

During the year-2006, a Turkish Non-Governmental Organization (NGO) "Light House" started construction of 10 towers with the cost of more than one billion rupees but unfortunately due to some reasons NGO left the work in the mid.

The HU administration has urged the federal government and HEC to grant funds for completion of leftover work of the academic blocks. HEC agreed to provide funds of Rs 662 million for completion of 8 towers of HU.

The university is also negotiating with the KP government for construction of two more faculty blocks whereas a sum of Rs 60 million is required to complete students of leftover blocks of the university.

It is worth mentioning that till now some of the facilities are still working in pre-fabricated buildings those were provided by Turkish after 2005 earthquake.

Dr. Hameed also said that it would also benefit thousands of the university students and research scholars those are getting education without facilities.

After the devastating earthquake of 2005 main campus of HU Manshehra was badly damaged, some of

1,976 students graduate at 24th NED convocation

STAFF REPORT ISB: As many as 1,976 students have been awarded degrees at the 24th convocation of the NED University of Engineering and Technology. The ceremony was held at the main campus of the university in which 1,439 undergraduate students in 23 disciplines received Bachelor's degrees and 535 postgraduate students in 21 disciplines were awarded Master's degrees.

Two doctorate degrees were conferred on two assistant professors, namely Dr. Amir Zeb of the electronic engineering and Syed Abbas Ali of the computer and information systems engineering.

A total of 1,325 candidates received degrees during the event, including 1,217 in Bachelor's programme and 106 students in Master's programme, whereas remaining students were conferred degrees in absentia.

Out of the 23 disciplines, 12 position holders were awarded two gold medals each, while the remaining two toppers were only given one gold medal.

Technology Times, PNS join hands to promote S&T

STAFF REPORT ISB: Pakistan Nuclear Society (PNS) and Technology Times have signed a memorandum of understanding (MoU) for the identification of core areas of cooperation especially in the field of science and technology awareness in the country.

The agreement was signed at the premises of PNS where senior officials from the Society and Technology Times were present.

Under the MoU, both the sides would work together to identify areas of mutual cooperation and share their expertise as well as facilitate each other for development and improvement of scientific culture in the society.

Other activities of collaboration would include organization of seminars, symposia, trainings, workshops, conferences and various types of events for awareness creation among university youth specifically and other communities generally, and socio-economic development of the society.

Speaking on the occasion, Dr. Syed Javed Khurshid, President PNS said that scientific temper is a social shield of thinking in-

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NOTICE

The office has established an Investigation Cell in order to unfold illegitimate activities as well as sensitize our readers on grey areas in various sectors including Science & Technology, Energy, Information Technology, Agriculture, Environment, Education and Health. Under this initiative, we plan to start publishing articles and news reports this Cell would clear after thorough scrutiny of information and related documents. Our readers can also share with us any information or documents about any illegitimate or non-professional activity or policy in these sectors for a good cause. Their identity would be kept confidential in any case. Information can be shared at: +92 51 2607219 Mobile: 0336383241 Email: ic@technologytimes.pk

ITU unfolds quality research ranking of over 200 varsities

STAFF REPORT LHR: Information Technology University (ITU) has launched quality research rankings of over 200



universities and research institutions of Pakistan. According to the rankings, Quaid-e-Azam University Islamabad topped the overall ranking followed by COMSATS Institute of Information Technology, University of Agriculture (UAG) Faisalabad, NUST University of the Punjab, Pakistan Council for Science and Technology (PCST), University of Karachi, and Government College University (GCU).

The ITU-QRR also issued rankings of specialised institutions of Pakistan. Aga Khan University topped the category followed by PIEAS, LUMS, National Institute for Biotechnology and Genetic Engineering, Pakistan, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI), NED University of Engineering and Technology Pakistan, University of Sindh, University of Engineering and Technology (UET) Taxila, NWFP Agricultural University, and University of Arid Agriculture.

Pakistan needs to increase food production by 40-50pc

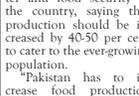
STAFF REPORT ISB: Agriculture and water experts have stressed the need to take immediate measures to achieve water and food security in the country, saying that production should be increased by 40-50 per cent to cater to the ever-growing population.

"Pakistan has to increase food production by 40-50 per cent to meet the needs of a projected population of 221 million by 2024," said experts, addressing participants at a workshop titled "Technical Assistance: Balochistan Water Resources Development Project", jointly organized by the Asian Development Bank (ADB), the centre and the province, in collaboration with the Japan Aerospace Exploration Agency (JAXA).

ITU Vice Chancellor Dr Umar Saif said that ITU quality research rankings is distinctive because it only aggregates work published in top research journals and conferences.

Six Pak universities among world's top 800

STAFF REPORT LHR: Six Pakistani universities are ranked among the world's top 800 universities by British ranking agency, Quacquarelli Symonds (QS). These univer-



sities included Quaid-e-Azam University (QAU), NUST Islamabad, Lums, University of Karachi, University of Lahore and UET Lahore.

According to details, NUST leads with 501-550, QAU ranks second among Pakistani universities with 651-700 while Lums, UET, KU and University of Lahore

PTA workshop focuses on mobile money

STAFF REPORT ISB: The mobile phone sector in Pakistan has shown an enormous growth which has created striking opportunities for service providers and consumers to utilize mobile networks for carrying out various financial tasks such as financial transactions.



PTA Chairman Dr. Syed Iqbal Shah said this during a workshop on Mobile Money at the PTA headquarters in Islamabad.

He said that Pakistan has now moved in the era of broadband. By the end of February 2016, there is 29.8 million broadband users that makes broadband tele-density 15 per cent and it has great potential for broadband proliferation.

follow with 701+. The British agency considers employer reputation (10pc), citations per faculty (20pc), student to faculty ratio (20pc), international students (5pc) and international faculty ratio (5pc). National University of Sciences And Technology has also been ranked separately in Engineering and Technology category at 340. The QS rankings take into account academic reputation (40 per cent), employer reputation (10pc), student to faculty ratio (20pc), international faculty ratio (5pc) and international students (5pc). The methodology aims to assess research, teaching, employability and internationalization. University rankings: QAU, Aga Khan University with 651-700 while Lums, UET, KU and University of Lahore

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The Chairman further said that branchless banking is a modern facility which will have positive impact



on the GDP growth of the country and will be beneficial for people of Pakistan as well.

Earlier, Dr. Saleem, Director General, PTA, in his opening remarks said that PTA and SBP are also working on mobile banking regulation with aim to continue mutual coordination for setting up a fair and non-discriminatory regulatory framework for the mobile banking service providers.



EdTweet

Lowest ranking on innovations!

The National Assembly has recently been informed that less than two per cent of GDP is being spent in Pakistan on research and development. This spending is too low when compared with that of other states which have set their progress on a sustained track. Similarly, the low standards of science education in our educational institutions are the prime reason why Pakistan has been ranked 131st out of 141 countries in the Global Innovation Index (GI) 2015. Whether it is the issue of technological readiness, capacity for innovation, higher education & training, availability of scientist & engineers, industry-academia linkage or quality of scientific research institutions, the country is ranked among the low performers on international level. Of course, low government budget allocations as well as weak priorities, lack private spending on research & development are behind all this discouraging state of affairs. Lack of quality education as well as laboratory facilities, competent science teachers and very low investments are the main factors that have always contributed towards the current pathetic ranking in the fields of innovations or R&D projects. No doubt that the country has the young talent but the discouraging response from all the stakeholders especially government and private sectors has triggered the brain drain. The point to ponder over is that how youth remain unable to polish their abilities and their capacities in Pakistan, but when get a conducive environment in foreign institutions, they make records in quality education and R&D sector. Most recently, Dr. Nergis Mavalvala was in the news for being part of a team, which had made a historic scientific discovery by detecting gravitational waves. Her success is not reflective of the state of education and scientific innovation in Pakistan was largely ignored. This should not be surprising as the government is spending only 0.29 per cent of GDP for research and development. There are only 10,670 PhDs in the country, a tiny number, especially when considering that according to HEQ guidelines a university is required to have at least two PhD faculty members in order to offer MPH and MS programmes. But this is very unfortunate that the current atmosphere encourages only the attainment of highest grades through the retention of facts memorized from books. And questioning conventional wisdom and forming independent conclusions are not encouraged by those believing in conventional way of giving education. This does not let the culture of innovation flourish. Subsequently, the capabilities of especially young brains is discouraged and paves the way for brain drain. This is something very serious that we, as a nation, can no longer afford.

REPORT

By Engr. Ali Akbar Shah

IEEE DIALOGUE at MUET gathers young talent

IEEE DIALOGUE (Discouraging Abilities and Lifetime Opportunities for Graduating Engineers) was held at the Mehran University of Engineering and Technology on 27th January, 2016. Tahir Chaudhry, Chief Executive, Falcon Engineering, founding member and chair industry-academia linkage,



In his remarks, he said that it is a matter of honour to announce that their four faculty members are currently in the governing body of Pakistan Engineering Council creating an opportunity in enhancement of careers of young engineers. Creating an opportunity for the engineers and facilitating them is our top most priority and this IEEE DIALOGUE is the stage for flourishing the talent of students.

Earlier, Vice-Chancellor of Mehran University of Engineering and Technology, Prof. Dr. M.A. Uqaili, warmly welcomed all the participants and presided the event as chief guest.

In his remarks, Consul General of Switzerland in Karachi, Emil Wyss, expressed his gratitude on his second visit to the MUET campus. He said, "I am thankful to be given the chance of standing in front of you as the Consul General of Switzerland. Pakistanis are great in hospitality and I am thankful to the MUET for their kindness."

At the conclusion of the event, shields and certificates were awarded to the all participants.

Open Source Foundation of Pakistan, Mir Muhammad Ali Khan, Co-Chairman of AMZMAK Capital Limited, Engr. Tahir Saleem, Vice President South IEEE/ former Comm. IEEE/ CEO United Engineering Services, Rana Muhammad Idrees, Deputy General Manager HR Operations, Pakistan State Oil, Muhammad Nabeel, Scholarships Pakistan, and Engr. Parkash, Education Activities Committee Chair, graced the occasion as the guest speakers whereas, His Excellency Emil Wyss, Consul General of Switzerland in Karachi, was invited as the chief guest.

The event started with the warm welcome speech and "IEEE DIALOGUE overview" by Prof. Dr. B.S. Chowdhry, Dean, FEECE & Chief Organizer and IEEE Chair Karachi Section.

AGRI TECH

Effect of salt stress on mungbean

By Dr. Zahoor Ahmad, Saira Ali and Ayesha Nazir

MUNG bean (*Vigna radiata* L.) belongs to family Papilionaceae. It is an important pulse crop in South and Southeast Asia and is widely used due to its nutritional value. It is used in various forms such as cooked foods, mixed with different vegetables and meat as well as noodles is also formed by using mung bean. In Pakistan, mung bean is grown on an area of 218,000 ha with annual production of 138.46 thousand tons. Mung bean has a high nutritional value. There are 22.28per cent protein, 60.65 per cent carbohydrates, 1.15per cent fat and 3.5-4.5 per cent fibers in the seeds of mung bean. It is the richest source of proteins. Nearly 50 per cent production of mung bean is reduced by the salinity. This decline in production was due to the accumulation of high concentrations of toxic ions like Na⁺ and Mg²⁺ and low concentration of Ca²⁺ and K⁺ ions in plant body under salt stress. Pulses are a richest source of protein, but under salt stress conditional production of protein is significantly decreased. Particularly in mung bean, legume production is severely

affected under salt stress condition due to increased necrosis and chlorosis as well as reduction in photosynthetic pigments in leaves. Pakistan has mostly arid and semi-arid areas resulting in more rates of evapotranspiration and low precipitation. Large quantity of the surface water is penetrating in the ground and very low amount of water is available to the cultivators for the irrigation purpose. Due to these factors, different salt ions have been accumulating in soil to alarming situation and causing the more salinity level in the soil. According to an estimate, soils in Pakistan have very high ionic profiles mainly of cultivable land. Soil salinity has a remarkable effect on various physiological and yield parameters and causes deficiency of essential nutrients.



the various essential processes of plants. As a result of this, growth of the different crops was significantly reduced. Soil salinity is a major concern to the agriculture in the different areas of the world.

The growth and productivity of the several crops are significantly reduced by the increasing salinization. A lot of work has been done in relation to impact of salinity on crop plants. Soil salinity is the major problem in the world and causing a

huge loss of crop production worldwide. Problem of the salinity is more severe on the lands that have low precipitation rate as well as more cutting of vegetation. Extensive irrigation of the cultivated land also results different types of stresses in plants are produced like osmotic stress and oxidative damage, which ultimately cause the death of the plant. During the salt stress condition, various metabolic changes occurred due to high amount of NaCl. These change including the disruption of the process of photosynthesis, inhibition the functions of some enzymes as well as production of reactive oxygen species. Division and expansion of the cells is reduced due to these metabolic changes and probably the cells are more likely to be dead.

Various activated oxygen species are produced under salt stress condition. These species severely affect the structure of proteins, DNA as well as reduction in photosynthetic pigments. Due to the activated oxygen species, chlorophyll contents are decreased in the plants, which are exposed to salinity stress. Under the salinity stress, amount of proline is significantly increased. The enhanced proline is the source of energy for plants, which they used against the salt stress tolerance.

Salt stress also significantly affects the anatomical

By Naima Tariq and Dr. Irfan Majeed

ENER TECH

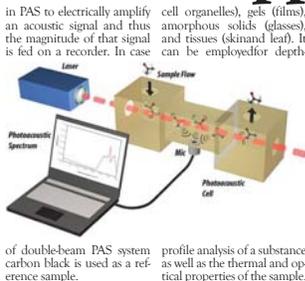
Photoacoustic Spectroscopy: An introduction and applications

PHOTOACOUSTIC (PAS) or optoacoustic spectroscopy is a unique form of spectroscopy that uses sound and light to examine the behaviour of material. This technique is used to study thermal emission developing from non-radiative de-excitation after absorbing radiation from the incoming light. Alexander Graham Bell was the first scientist to detect the photoacoustic effect in 1880. He discovered that thin disc when exposed to an interrupted beam of sunlight produces an audible sound in UV and IR electromagnetic spectrum of the sun. After the invention of laser in late 1960s Atwood and Kerr used laser as a source in photoacoustic spectroscopy for trace gas analysis because of its high spectral brightness. More briefly in this technique a thermal state of the sample changes after absorbing a periodically modulated light beam. If the sample is excited it emits heat pulses of some frequency as that of incident light. These thermal emissions produce pressure changes in the gas phase present above the sample that creates acoustic signal. Like other spectroscopic techniques, PAS also uses a conventional light source e.g. lamp (incandescent lamps) or a laser (He-Ne laser and hollow-cathode spin-flip Raman laser). A monochromator is utilized for the selection or scanning of excitation wavelength. The light beam is periodically interrupted by a chopper. For the detection of acoustic signal microphone is used in gas phase whereas, in condensed phases piezoelectric transducer can be applied as a detector. The transducer is physically connected to a detection phase both in case of liquid or solid sample. Lock-in amplifier is used

in PAS to electrically amplify an acoustic signal and thus the magnitude of that signal is fed on a recorder. In case of double-beam PAS system carbon black is used as a reference sample. This technique provides some advantages over other spectroscopic techniques. It permits the analysis and characterization of opaque and high light scattering materials particularly powders (metals, drugs and insulators), suspensions (algae, bacteria and cell organelles), gels (films), amorphous solids (glasses), and tissues (skin and leaf). It can be employed for depth profile analysis of a substance as well as the thermal and optical properties of the sample. It is also helpful to investigate the de-excitation states of molecules and the life expectancy of the intermediates during chemical reactions.

It is also worthy to mention that no complex preparation, purification process and treatment is required

before measurements. PAS detects the minimum absorption coefficients (0.6 cm⁻¹ and absorbance as low as 10⁻⁷ and can be measured. Beside advantages there are some limitations of PAS like laser light used as source does not possess a broad bandwidth; for identification the molecules of analyte also absorb some light from the source (lamp or laser). Saturation effect is also troublesome. Simplicity, small size and robustness are the exceptional features of PAS cell but they cannot be fully utilized if a system not connected with a computer based source. Recent advances are made to use efficient lasers for the sensitive trace gas analysis or to increase the absorption range for detection. Real applications of PAS include the analysis of stack gas emission, car exhaust monitoring, and in ambient air



Sajid Hussain, Rattan Lal, Muhammad Zain and Itisham ul haq

AGRI TECH

Desperate need for farm reforms

HIGH prices are the ultimate signal that demands are outstripping supply and that there is simply not enough food to feed the growing population of this already giant country. Pakistan faces a number of challenges to agricultural growth including technological fatigue, policy deficits, infrastructural, credit and marketing constraints and water, and soil health related ecological and environmental problems. Public sector agricultural research and development has not adequately addressed the arid or dry land agriculture and neither the need to develop drought and pest resistant crop varieties.

The effectiveness of the agricultural sector is in order to have multiple payoffs for food security, including contribution to stability of global food markets and providing new employment opportunities in the commercial agriculture sector, as well as enhancing the sustainability of vulnerable livelihood systems. Some of these public policy options include: emissions of carbon dioxide, such as through reduction in the rate of land conversion and deforestation, adoption of alternatives to the burning of crop residues after harvest, and more efficient energy use by commercial agriculture and agro-industries; sequestering carbon, which according to Prof.

Rattan Lal (distinguished professor and soil scientist at Ohio State University), can be achieved through improved management of soil organic matter, with conservation agriculture involving permanent organic soil cover, minimum mechanical soil disturbance and crop rotation (which also saves on fossil fuel usage).

Noted experts on agricultural economics, Dr. Sultan Ali Adil, Director/Professor, Institute of Agricultural and Resource Economics, Faculty of Social Sciences University of Agriculture Faisalabad, if the Pakistan government prioritizes the encouragement of massive investment, especially on rural roads, agricultural research, and soil conservation, irrigation, then the sector would play an effective role in the economy. Agricultural mechanization would contribute to a sustainable increase in the yields and cropping intensity, make the environment worker friendly by reducing drudgery and health hazards, contribute to the conservation of land and water resources and to more efficient use of inputs and help reduce produce loss. The challenge is to shift the government's priorities to the conservation of land and protection of food staples to promotion of agricultural diversification, processing, and commercialization.

In other words, most farmers would not be able to increase their incomes by only growing cereals when there are already national surpluses, demand growth in cotton, maize, sugarcane, sunflower, chickpea, rice, cotton and mustard, each of which are not just resilient to several pests and insects, and abiotic stresses of light, temperature, and water but also have enhanced nutritional quality.

Corporatization of agriculture can have long term benefits like better distribution of higher private investment, an increase in output, income and exports and a higher multiplier effect, leading to the creation of wealth in rural Pakistan. Public policy should facilitate the private investments in rural areas, in order to improve poor communities' access to education, market information for farmers and other small businesses, and service information, which would also transfer the benefits and risks associated with transgenic plants and animals and suitable institutional structures and regulations for biosecurity, biotechnology, and bio-surveillance. It is a matter of great pride that Pakistan Agriculture Research Council (PARC) and National Agriculture Research Center (NARC)

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of PakUS agricultural partnership from the 1950s to mid-1970s for Green Revolution, in association with International Rice Research Institute, cotton, sugarcane, sunflower, chickpea, rice, cotton and mustard, each of which are not just resilient to several pests and insects, and abiotic stresses of light, temperature, and water but also have enhanced nutritional quality.

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farmers. Farmers, therefore, must shift into higher-value products to increase their incomes. Therefore, a set of public policies and investments is required to fully unleash this new potential.

Biotechnology will play an increasingly important role in strengthening food, water and health security systems. The recent widespread public concern relating to GM food stresses the need for more effective and transparent mechanisms for assessing the benefits and risks associated with transgenic plants and animals and suitable institutional structures and regulations for biosecurity, biotechnology, and bio-surveillance. It is a matter of great pride that Pakistan Agriculture Research Council (PARC) and National Agriculture Research Center (NARC)

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By M. Abdullah Malik and Dr. M. Sohail Sajid

MEDICO TECH

Medicinal plants - an alternative to combat gastrointestinal parasitism

IMPORTANCE OF LIVESTOCK SECTOR

There are multiple factors which play their role in establishing the economy of any country. Among these factors, Livestock have vital role in economic strength of any country by producing milk, meat, wool, hide, farm yard manure and many other animal by-products. There are 1750.5 million heads of cattle and buffaloes, 2439.2 million heads of sheep and goats, 27.4 million heads of camel and 21554.8 million heads of chickens are found worldwide which are producing milk 770.8 million tons (cattle and buffaloes) and 4.5 million tons from sheep while camels are also producing about 1.7 million tons of milk worldwide while meat production of these species reported worldwide is about 65,838 thousand tons by cattle and buffaloes and 150.48 thousand tons by sheep and goat. In Pakistan, the livestock sector being the most important component of agricultural economy shares about more than 50 per cent in agricultural GDP. Large ruminants being the part of domestic livestock share big part in compensating the meat requirement by producing 47,951 thousand tons milk and 1,887 thousand tons meat while sheep and goats producing 860,000 tons of milk and 657,000 tons of meat while camel

shares about 851,000 tons of milk and is also used as draught animal in desert area worldwide. Apart from production point of view, livestock sector also provides means of earning by giving source of employment and earning money by the sale of animals, their hides, wool and by products like butter, yogurt etc.

FACTORS AFFECTING THE LIVESTOCK PRODUCTION

However, there are some factors which are affecting livestock population by decreasing their production and ultimate economic value of the animals. These factors include environmental conditions, socio-economic conditions, nutritional deficiency of animals, poor husbandry management, poor hygienic measures at farm, use of contaminated instruments and utensils etc. All these factors predispose the animals to different diseases caused by bacteria, viruses and parasites leading the animal towards emaciation, loss in general body condition, production loss and sometimes leads to death of the animal by exposing the animal to other life threatening conditions. Among these disease causing agents, prevalence of diseases caused by parasites is increasing day by day.

ROLE OF GASTROINTESTINAL PARASITISM

Parasitism is of extreme importance in livestock industry causing widespread economic losses worldwide, in terms of decrease in milk yield, meat production, growth rate, reproduction and loss due to mortality. The parasitism caused by parasites can be divided into 2 categories as endoparasitism caused by endoparasites like helminthes and ectoparasitism caused by ectoparasites. Endoparasitism caused by helminthes is increasing day by day.

The prevalence of gastrointestinal parasitism caused by these helminthes is continuously increasing and the reason of increasing gastrointestinal parasitism is their antigenic variation. With the help of antigens variation parasites can evade host immune response. In antigenic variation mechanism when a parasite e.g. Haemonchus contortus enters into the body of host, it changes its surface proteins which are not recognized by the host immune system. In this way, antigenic variation not only aid parasite to evade host immune response but also allow the parasite to cause the re-infection of the susceptible host as antigen produced by the pathogen will not be recognized by the host immune response and infection occurs again and again. Due to this ability of antigenic variation gastrointestinal parasitism

cause economic losses at individual as well as at farm or herd level. Estimated economic losses in terms of production vary from 15-55% depending upon the



hygienic measures taken and use of dewormers to control gastrointestinal parasitism. However, veterinary doctors and livestock producers are also trying to combat the endoparasitism by using chemical anthelmintics.

MEDICINAL PLANTS USED AGAINST GASTROINTESTINAL PARASITISM

The natural anthelmintics includes Neem, Tobacco, Walnut, Tulsi, Garlic and Kalongi seeds of different plants and honey and vinegar mixed with hot water act as vermifugal substances as anthelmintics. Seeds of garlic, onion and mint has been used against gastrointestinal parasitism, extract of Tobacco plant has been proved effective against various ectoparasites, some

natural anthelmintic plants and their different parts like seeds, leaves, bark such as their other extracts which are proved to be effective against different helminthes include

Azadirachta indica (Neem) against Strongyloid, Plasmodium and Trypanosomes, seed extract of Trachyspermum ammi Linn. (Ajowan) against Haemonchus contortus, leaves extract of Cannabis sativa Linn. Against Flukes and Trifolium repin Linn against Hymenolepis diminuta. Allium sativum against Haemonchus contortus, Crataevaunvala and Artemesiapallens and Buteaomosperra against earthworm, tapeworms and roundworms proved effective. Ether and aqueous extract of leaves of the Adhoda vasa proved effective against larvicidal and ovidical activity of Nematodes. The stem bark extract of Acacia oxyphylla against Ascariida galli (Nematode), seeds of Carum capticum against gas-

trointestinal nematodes of sheep, aqueous and ethanolic leaf extract of Adhoda vasa has been observed for ovidical as well as larvicidal activity against nematodes, leaves of Artemesiberivolia (wormwood) and Zanthoxylumanthoxyloides (Fagara a native tree from Africa) in the form of powder has been proved effective upto 65% against eggs of Haemonchus contortus in abomasum hay of Cassava forage has been proved effective against eggs and larva of abomasal and intestinal nematodes of sheep and goats, Punicagratia commonly known as hay of Cassava forage has been proved effective against

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FUTURE PROSPECTS AND PRESENT SCENARIO ABOUT MEDICINAL PLANTS

It is estimated that there are more than 35 species of plants which are being used worldwide against Cestodes, 20 against trematodes and more than 40 against nematodes. However, there are thousands of plant species which are being used by the small farmers and producers and have not been proved yet. Therefore, there is a need to identify and evaluate the species of plants as whole, as well as their parts (bark, leaves, stem, flowers and fruits). There is need to study that which part of the plant is effective either against specific species of parasite or multiple species of parasites and how much concentration is sufficient to get response of therapy.

For this purpose, there are some tests which are available for diagnosis of resistance of parasites against anthelmintics and also to evaluate the efficacy of medicinal plants anthelmintic activity in vivo as well as in vitro. These test includes, eggs per gram (EPG), packed cell volume (PCV) showing degree of anaemia, worm recovery method, through proximate analysis of medicinal plants, egg hatch assay or larval development assay, adult development

assay and DNA probes, Copro-ELISA (Enzyme linked immune sorbent assay) and PCR (polymerase chain reaction) are also available for research purposes but not commercially available. Although anthelmintic plants have good activity against various helminthes as well as other parasites but there is a need to study in detail about phytochemical properties of plants, their chemical profile at molecular level and their other properties and harmful effects of their excessive use so that in future we will be able to control increasing parasitism and ultimately minimize economic losses in terms of productivity.

The research is being conducted on the effect of medicinal plants on gastrointestinal parasitism of sheep and their mineral profile in molecular parasitology laboratory, University of Agriculture, Faisalabad. The result of this research will be helpful in identification of medicinal plants with their mineral composition and effect on gastrointestinal parasitism and provide guidelines for their safe use in livestock industry to control parasitism and ultimate economic losses.

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ENVIRO TECH

Carbon footprint and its approximation in farm sector



Saqib Mushtraq

THE CARBON FOOTPRINT is a measurement of the amount of greenhouse gases (GHG) released into the atmosphere, produced as a result of direct and indirect human. It is usually demonstrated in equivalent tons of carbon dioxide (CO2). All activities caused by mankind. In other words, when you drive a car on road, the engine burns fuel which creates a definite amount of CO2, reliant on its fuel exhaustion and the driving distance (CO2 is the chemical symbol for carbon dioxide). When you warm your house with oil, gas or coal, then

you are also generating CO2 released into surrounding atmosphere. Even if you heat a room by using electricity, a definite amount of CO2 may also have released by the production of electrical power. When you buy food and goods from market, the production of the food and goods also emanated some quantities of CO2. The administration has also concluded that greenhouse gas emissions have been on the proliferation since industrialization, suggesting that humans are to blame for much of the greenhouse gas production. And science has also linked greenhouse gas production to climate change, or the increase in earth's temperature.

Climate change has arisen as the major environmental and progressive contest of the present time. The consequences of climate

change have already been observed all over the world, in dissimilar forms ranging from fluctuating weather patterns, diminishing ice caps, crop losses, increased occurrence and intensities of floods and droughts, and severe ecological imbalances. Changing weather disrupts the agricultural industry and the human food supply. Carbon emissions contribute to increasing temperatures and decreasing precipitation, changing the growing conditions for food crops in many areas. All of these effects also have caused in significant economic losses.

Agriculture is the particular largest sector in Pakistan's economy, which is contributing 21 per cent to the GDP and employing 43 percent of the workforce. Carbon emissions in Pakistan continue to propagate day by day at an increasing

rate, deforestation continues to reduce carbon sinks, national capacities remain horribly low at all levels to damp climate change, and there is



not even a sound susceptibility analysis to work around on this emerging issue.

Agriculture is the largest source of emissions of greenhouse gases, so the evaluation of different agricultural practices is very important for identification of more

ecological practices. Carbon foot printing can use as an instrument for calculating and comparing GHG performances of different agricultural practices.

In addition to soil borne GHGs and carbon sequestration, keeping in mind the increasing energy and chemical inputs in farming, the boundaries of agriculture must be expanded to include all relevant emissions of GHGs. Carbon foot printing hence can be utilized for cultivation systems by producing a comprehensive chart of different sources and basins of GHGs. This will recognize the points where environmental efficiencies can be enhanced.

Soils are the largest natural carbon store. Soils hold carbon in the form of organic and inorganic molecules. Due to erosion and oxidation, a remarkable amount of soil organic carbon has been lost. Scientific evidence says that 50-66 per cent of the accumulative historic carbon loss from soil can

be mended if achieved intelligently. Increasing the soil organic carbon content in soil may lock the carbon out of the atmosphere for centuries a phenomenon is termed as carbon sequestration. Carbon sequestration must be expanded to include all relevant emissions of GHGs. Carbon foot printing hence can be utilized for cultivation systems by producing a comprehensive chart of different sources and basins of GHGs. This will recognize the points where environmental efficiencies can be enhanced.

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Madrid is Welcoming Researcher's to Shout on "Biodiversity"

5th International Conference on Biodiversity

Madrid, Spain
 March 10-12, 2016

Media partner
Weekly TECHNOLOGY Times
 www.technologytimes.pk

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Quality research vital to ensure national progress

STAFF REPORT ISB:

The high class research being carried out in Pakistani research institutes is drastically helping in minimizing the scientific void between developed and developing countries, said Dr Joseph Niemeela, Director of the Salam International Centre for Theoretical Physics (AS-ICTP), while addressing the International Scientific



Spring (ISS) 2016. Dr Niemeela, a US national who hails from Italy, said that this activity is very much hopeful about the scientific research scenario of Pakistan. He also said that in ICTP research studies programs "we receive 50% researchers from developed countries while remaining 50 per cent come from rest of the world. He emphasized upon the researchers to explore more collaborative horizon within domain of ICTP and NCP research collaborations. Earlier, Dr Hafeez Hoorani, Director General NCP, while giving a detailed presentation about the vision and goals of NCP said that NCP has become a world class research institute with international acclamation.

Low literacy behind lack of environment awareness

STAFF REPORT ISB:

Vice Chancellor Air University Air Vice Marshal (i) Faiz Amir has said that there is a strong need for awareness to the layman and this is the reason that they are looking



at renewable energy sources to exploit them to the fullest and be fruitful for an ordinary person. He said this during the recently held "5th International conference on Renewable energy and energy Efficiency" in Islamabad. The event was organized in collaboration with REAP. In the recent years, Air University has been very active in raising awareness in this regard by holding regular conferences and seminars on renewable energy to bring in the relevant experts to join in, share their researches for the development in this sector in the coming years. The

Telecom sector concerned over heavy taxes on services

STAFF REPORT ISB:

The SDPI's Study Group on Information Technology and Telecommunication has said



comes to tax collection regime. Hayat also highlighted that the government can rely on the growth of this sector, instead of going to the IMF for investment.

Earlier, Deputy Executive Director SDPI Dr Vaqar Ahmed said the growth in the telecom sector has stalled due to no significant Foreign Direct Investment in this sector during the recent past.

The decision to be a part of this global initiative was also made keeping in mind Mobilink's commitment to a digitalized nation by empowering locals to embrace digital lifestyles and protect their interests as subscribers from the growing number of fraudulent activities and scams online. "We've chosen Mobile Connect to simplify the lives of our 36 million plus subscribers by offering a single mobile identity at the core of our online experience. It addresses the most heavily taxed cellular services, while also respecting online privacy," said Amir Ibrahim, Mobilink CCO.

Unanimous approach called for prosperity

STAFF REPORT LHR:

As the engineering is quite a challenging field, all the stakeholders related to engineering sector including academia, industry and other concerned departments must develop mutual lines of progress and prosperity by bringing innovation.



"The gap between academics and industrial engineers should be overcome through strong collaboration between research and development to clear down all sort of challenges with proper utilization of resources in progressive manner," said Prof. James Trevelyan of Western Australia while meeting with Vice-Chancellor University of Engineering and Technology, Lahore Prof. Dr.

Fazal Ahmad Khalid at UET. He further said that mass production always requires mass distribution and mass consumption, so in this regard engineers must have knowledge about the demands of markets and other related segments for achieving success. According to him, different technologies of engineering have become interdependent to each other so development must develop lines of coordination with each related discipline to design wide road map for attaining destination.

"This sentiment to mention here that Prof. James Trevelyan is launching a book on his ideas to become successful engineer, within days," he elaborated. During the session, Vice-Chancellor Prof. Dr. Fazal Ahmad Khalid talked that today's era is not solo fight era, it is time of collaboration, consensus and team work.

Pakistan introduces new 'secret' mango variety

STAFF REPORT KHI:

A new mango variety has been introduced in the experimental mango area of the Sindh Horticulture Research Institute in Mirpurkhas. The local administration there is, however, reluctant to publicize the release for fear of upsetting big growers and landlords in the region.

The new mango variety will be available for almost half a year, which could challenge the monopoly of the handlooms and large scale growers, who fear financial loss due to an influx of early fruit on the market. Officials close to the development said that the agriculture scientists and researchers in the area had planned a new variety of mango, which was acquired from Australia, and grafted its plants in the experimental

mango area of the institute. They aim to harvest mangoes every February from this variety. It is said that the researchers succeeded in harvesting mango from a few plants in February, but the research results were not officially disclosed. One of the institute officials, on the promise of anonymity, said that it was a big success to acquire mango in the cold season while only some officers and experts were aware about this success and kept it a secret for fear of political pressure.

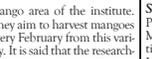
PTCL, ZTE collaborate to set up joint innovation centre

STAFF REPORT ISB:

PTCL has signed a strategic MOU with ZTE Corporation for setting up a Joint Innovation Center (JIC) on Big Video in Pakistan. The JIC is a key initiative of both the companies for Smart TV development, empowering PTCL to provide high quality video services to customers on TV and mobile devices.

The JIC, first of its kind in big video services in Pakistan, will allow both PTCL and ZTE to share resources and exchange knowledge and tap into the potential of the latest available technologies. Now PTCL will be able to further enhance its Smart TV offering, bring in more value and provide new, value-added services to customers.

The MOU was signed by Adnan Shahid, Chief Commercial Officer, PTCL, and Frank Fang, Vice President Multimedia Product & Services ZTE. The agreement will serve to strengthen the PTCL digital ecosystem based on video solutions and will support the convergence of the PTCL ICT infrastructure to counter emerging OTT technologies and improving competence and innovation levels with an eye on future planning. This partnership shall also establish a process of research and development which would lay down an operation model for PTCL to create the best experience for customers in terms of Smart TV usage in addition to offering superior services such as 4K Ultra High Definition TV. Adnan Shahid said:



"PTCL has been a leader in providing digital entertainment. Big video IJC in Pakistan will enable us to provide new and innovative video services for people in Pakistan with local research and development to meet our local, cultural and digital requirements." Zhu Jinyun said that ZTE feels excited to further collaborate with PTCL in various domains including PTCL Smart TV offering for creating superior user experience for customers in Pakistan.

Use of bio-tech stressed for cotton breeding

STAFF REPORT MULTAN:

Agriculture scientists can improve cotton yield through the use of biotechnology in breeding programmes of cotton, said Dr Asim Bhatti, Regulatory Scientist BASF America.

Addressing a seminar on "Genetics Changes in Cotton and Needs of 21st Century" organized by Evol and Central Cotton Research Institute (CCRI) jointly, here, he said that Pakistan could be brought in the list of top cotton producing countries by working on breeding programmes. Biotechnology is vital to enhance yield and change financial condition of farming community. Describing different challenges being faced by cotton sector, Cotton Commissioner Dr Khalid Abdullah stressed the need for changing priorities to improve the produce. He also highlighted different measures being adopted by the government to enhance the earning from cotton sector.

Dr. Hafeez Hoorani, Director General NCR, and Prof. Yifang Wang, Director IHEP, signed the agreement on behalf of their respective universities of Austria. He said that during his recent successful visit to Austria, an agreement regarding affiliation of University of Haripur with top five universities of Austria has been made that would be extended to other universities of the province later," he said while attending a briefing at University of Science and Technology Kohat (KUST) during his visit to the university. The KP government has set up an endowment fund of Rs500 million for promotion of higher education in the country and government policies to promote the sector. He said this MoU will open a new window for Pakistani scientists and researchers to work in large future scientific projects of this region, in particular for the

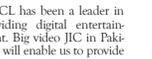
Dairy Science Park to support farmers in KP

STAFF REPORT PESH:

Senior Minister Local Government, Elections and Rural Development, Khyber Pakhtunkhwa, Inayatullah Khan, has appreciated the



concept of the Dairy Science Park to support the farmers' income, value addition in the province, self-employment to the youth and hygienic food production for the people of the province. He said this while recently chairing a meeting of representatives of the Department of the Local Government, Election and Rural Development, Agriculture, Livestock and Cooperatives Department, the University of Agriculture Peshawar and the private sector here. During the meeting, the senior minister appreci-



ated the progress so far and directed for initiation of a survey for approval of the Chief Minister, regarding academic component at the University of Agriculture Peshawar and an autonomous DSP Board for boosting Halal meat export. Several meetings have been held on the subject during a period of more than an year and an ongoing project of Rs.200 million is supported under ADP for establishment of Slaughter House. The Peshawar Development Authority is implementing the project and the Dairy Science Park team will assist them in ensuring quality standards, support the supply line, marketing linkages and human resource development into the system.

AJK hydropower project wins world award

STAFF REPORT ISB:

The 102MW Gulpur Hydropower project in Kotli, AJK, has been recognized as the 'best deal' of 2015 in the hydropower sector and awarded the award at the prestigious IJ Global Awards ceremony held in Singapore last week.

The Asia Pacific Energy and Infrastructure Finance Forum, 2016 arranged the event. The IJ Global Awards are an annual feature of a leading international economy publication, Infrastructure and Project Finance Magazine.

The awards recognize excellence, achievement and innovation in energy and infrastructure finance. The Gulpur Hydropower project was selected as winner of the Award for securing \$275.5 million as debt financing in a relatively challenging environment.

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Govt to launch projects to help agro-ecologies

STAFF REPORT ISB:

The government has planned to launch special projects for different neglected agro-ecologies through the Pakistan Agricultural Research Council (PARC) and will establish issue culture laboratories in Turbat and Thatta.

The improvement of irrigation system in Chitral, establishment of training facilities for farmers in Zhoib, strengthening of agricultural, livestock institute in Khuzdar, Lashela, Jafarabad, Turbat and Barkhan have also been planned under special projects for promotion of agriculture in less developed areas of the country.

"Some other measures include introduction and promotion of olive plantation in Gorkh Hills District,

of such incubators in other major cities planned for this year, which only shows how serious the government is in 2015. Technology projects outsourced to Pakistan from overseas received another \$70 million last year.

in planning to facilitate this ecosystem," said Umar Said, chairman of the Punjab IT Board. To be sure, Pakistan's startup community is still tiny compared with regional giants such as Singapore and India. In 2015, 15 startups in Pakistan raised almost \$30 million, up from just \$6 million in 2014. Another nine raised undisclosed amounts in 2015. Technology projects outsourced to Pakistan from overseas received another \$70 million last year.

Pak tech startups begin getting investor recognition

STAFF REPORT LHR:

Successful technology ventures such as property website Zameen.com and project management software, have company Co-wo have put Pakistan on the startup map. With a government keen to promote technology entrepreneurship and a relatively competitive business landscape venture capitalists are starting to pay attention.

The government is keen to attract capital into Pakistan's embryonic startup community and has established technology incubators in major cities such as Lahore and Karachi.

In Lahore, the Punjab Information Technology Board's Plan9 project has now incubated 80 startups and there are plans for more such projects across the country. "This is just a start, with a further mushroom growth

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PARC chief calls for agriculture diversification

STAFF REPORT KHI:

Chairman of Pakistan Agricultural Research Council (PARC), Dr. Nadeem Amjad, Therefore, attention should be paid towards growing soybean and other crops which have demand in the market.

He pointed out that the PARC is working for the promotion of agriculture and livestock. There are offices and research centres that help guide growers and provide them the required assistance. He pointed out that in the previous years a virus had affected the crop of banana in Sindh but due to efforts of the scientists of PARC the disease was controlled.

Dr. Nadeem further said that in collaboration with Italy, the PARC had grown five saplings on 6,000 acres of land in various areas of the country. In view of the success of the project, a five-year plan has been chalked out and elite saplings would be grown on 20,000 acres of land in various areas at the cost of Rs. 2.5 billion. There would be 30 nurseries in Pakistan while plants would also be imported from Italy.

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Haripur varsity affiliates with 5 Austrian varsities

STAFF REPORT PESH:

Special Assistant to the Chief Minister for Information and Higher Education, Dr. Ishaq Ahmad Ghani, has said that the University of Haripur (UoH) has been affiliated with five top educational universities of Austria for promotion of higher education.

He said that during his recent successful visit to Austria, an agreement regarding affiliation of University of Haripur with top five universities of Austria has been made that would be extended to other universities of the province later," he said while attending a briefing at University of Science and Technology Kohat (KUST) during his visit to the university. The KP government has set up an endowment fund of Rs500 million for promotion of higher education in the country and government policies to promote the sector. He said this MoU will open a new window for Pakistani scientists and researchers to work in large future scientific projects of this region, in particular for the

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NCP, IHEP sign MoU to promote scientific coop

STAFF REPORT ISB:

National Centre for Physics (NCP) and Institute of High Energy Physics (IHEP) China have signed a memorandum of understanding to promote scientific cooperation between both the countries for development of the scientific research.

Dr. Hafeez Hoorani, Director General NCR, and Prof. Yifang Wang, Director IHEP, signed the agreement on behalf of their respective universities of Austria. He said that during his recent successful visit to Austria, an agreement regarding affiliation of University of Haripur with top five universities of Austria has been made that would be extended to other universities of the province later," he said while attending a briefing at University of Science and Technology Kohat (KUST) during his visit to the university. The KP government has set up an endowment fund of Rs500 million for promotion of higher education in the country and government policies to promote the sector. He said this MoU will open a new window for Pakistani scientists and researchers to work in large future scientific projects of this region, in particular for the

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Australia assures to strengthen farm research

STAFF REPORT ISB:

Australia and Pakistan have agreed to strengthen cooperation in field of agriculture and development as the latter assured the continuity of cooperation and support for agriculture and development in Pakistan.

This collaboration was agreed upon during a meeting of a high-level delegation of Australian Commission of Agricultural Research (ACIAR) led by Commission Chairman Don Heat with PARC chairman Dr. Nadeem Amjad at the NARC in Islamabad.

On the occasion, Nadeem briefed about Pakistan Agricultural Scenario, Pakistan position in the world and PARC and its research establishments working across the country for the promotion and development of agriculture.

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Pak youth creates power bank for quick charging

MONITORING REPORT ISB:

Abdullah Soomro, a 23-year old entrepreneur from Pakistan, has invented a power bank called 'Flash Pack', which charges up completely in just 14 minutes from any standard laptop charger.

Just in under quarter of an hour, this charger packs up enough power to last for one and half charge of an iPhone 6S, making your mobile devices truly mobile. Flash Pack is currently under development with a fully functional prototype and will be shipping to early backers by June this year.

Flash Pack addresses a very important issue when it comes to charging devices directly from a wall socket or from power packs - the amount of time consumed. Flash Pack's unique patenting technology overcomes that problem by making charging fast, efficient and convenient for people who rely on heavy smartphone usage and are always on the go," said Abdullah.

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Pak-German renewable energy forum to be launched soon

STAFF REPORT ISB:

Ambassador of Germany to Islamabad has said that the Pakistan-German Renewable Energy Forum (REF) would be launched to help bring together and connect Pakistani-German actors from public and private sectors of RE&EE. Speaking at a 5th International Exhibition and Conference Renewable Energy and Energy Efficiency, she said the German Development Cooperation has been engaged in renewable energy and energy efficiency (RE&EE) since 1962, the very beginnings of Pakistan-German Development Cooperation.

"Our objective is to support sustainable electricity supply in Pakistan and to help improving the efficient use of energy," she added. She said that Pakistan has large potential for sustainable economic and social development due to its geographical realities as a trade corridor.

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