

## REPORT

Mega event of IEEE Pakistan Student, GOLD & WIE Congress  
The Mehran University of Engineering & Technology (MUET), Pakistan, in collaboration with the IEEE Karachi Section and IEEE.....



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## HEALTH Pg5

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## REPORT Pg5

## International Nathiagali Summer College a mother of many institutes

PAKISTAN harbours high dreams of becoming a state having high standards of science and technology driven progress and of course is making strenuous efforts to get these dreams materialized. However, the pace of progress is still not up to the mark; but the potential especially of science and technology academia is undoubtedly is at a high level. To recognize the remarkable services and pay glowing tributes to the enviable personality - former Director of Summer College Dr. Riazuddin - and highlight the rich contribution of Summer College, the Second National Space Conference, University of Karachi, has recently been organized.

Speaking on the occasion, Dr. Syed Javaid Khurshid, Executive Secretary Summer College, Nathiagali, gave a presentation about the role of the International Nathiagali Summer College in.....

# Climate change can slow down developing states progress

STAFF REPORT IBD: The climate change has been responsible for floods, extreme weather, earthquakes, rise of sea levels, increase in crop pests, diseases and for some other catastrophes. The issue of global warming can slow down the pace of development especially in developing countries. This challenge is even bigger for the third world nations including Pakistan. The country's vulnerability to such adverse impacts is likely to increase considerably in the coming decades.

These views were expressed by speakers at the three-day conference recently organised by the Federal Urdu University Karachi in collaboration with Pakistan Council for Science and Technology (PCST) and five other departments of NUST.

Addressing on the occasion, Federal Minister for Science and Technology Zahid Hamid, who was the chief guest, said that if the global warming continues in the next few years, they will face more natural disasters.

He said that glaciers in Pakistan are continuously melting mainly due to the constantly rising temperature in the region, and by the year 2035, the country will no longer have water reserves in the shape of glaciers, which would definitely lead to ruination of agriculture, its related industries and putting the human survival in the region at stake. As a contributing factor Pakistan is releasing 0.34 per cent of green house gases which are responsible for global warming. However, it is the eighth most vulnerable country facing climate changes.

"About 23 per cent people in Pakistan are at a risk of floods. The glaciers will melt in the next two to three decades and after that, we will face an acute water shortage due to which the risk of food scarcity will increase,"



said Secretary Climate Change Division Raja Hasan Abbas while addressing the audience.

Chief organizer of the event Dr. Moynuddin Ahmed, who had done an extensive research on climate change, dispelled the common impression that glaciers melting and reducing in size due to the rising temperature. In fact, he explained, it was the excessive snowfall on mountains that melts in summer and contributes to floods in the country.

He also said that this conference has brought national and international experts working on climate change issues on one platform and exchange their research work.

While speaking on the occasion, Secretary Science and Technology, Kamran Ali Qureshi, said that water

is important for life and there is a dire need for research to face the effects of climate changes.

"We have to save our water resources because there will be no life without them," he maintained.

"NUST has provided a platform for such conferences and we hope that they will recommend the solution to global warming," he said.

It also said that the developing countries including were the least responsible for climate change contributing only 10 per cent of annual global carbon dioxide emissions. But they are the ones most vulnerable to the environmental, social and economic impacts of climate change.

Another report from the World Bank has warned Pakistan of the ex-

istence of five major risks related to climate change, rise in sea level, glacial retreats, floods, higher average temperature and higher frequency of droughts.

PCST Chairperson Prof. Dr. Muddasir Asrar highlighted the efforts of her organisation in bringing the issue of global warming and climate change on the forefront. She said it was the second international conference which organised on this important issue.

She mentioned that purpose of the conference was to collaborate with international universities, organizations, NGO and professionals, providing a platform for national students, researchers and industrial experts, in the field of plant ecology and climate change.

## First ICTP-NCP World College on Plasma Physics starts

STAFF REPORT IBD: The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, has organised its regional scientific activity namely the "First ICTP-NCP International College on Plasma Physics" from November 11-15 at the National Centre for Physics (NCP), Islamabad, to promote research in the field of plasma physics in Pakistan and in this part of the world.

This is the first scientific activity of its kind organised in Pakistan by ICTP in collaboration with NCP.

Eminent scientists and researchers from countries including the USA, Japan, China, Belgium, Italy, India, Bangladesh, Iran, Russia, Thailand, Uganda, Nigeria, Nepal, Indonesia, Egypt and Jordan also participated in this activity.

"The field of plasma physics

is very important to achieve a long-time solution of increasing energy demand of the world. The scientists and engineers are engaged in finding out ways and means to control the thermonuclear fusion reactions for producing electricity," said Dr. Hamid Saleem, Director General NCP.

He also said that if their efforts succeed then probably after 2050 the mankind will be using electricity produced by the same physical process which is taking place on the shining stars for billions of years; namely the nuclear fusion.

He hoped that the collaboration between NCP and ICTP will be strengthened further and with the support of ICTP, the NCP will be able to play a role for promoting science and technology in the region as well.

## 90,000 students visited PSF exhibitions in 2012

STAFF REPORT IBD: More than 90,000 students from 430 schools visited the science caravans and exhibitions during the last year, arranged by the Pakistan Science Foundation (PSF) in order to create awareness among students about the science and technology and apprise them of the potential as well as achievements of this sector.

"Arranging these caravans is aimed at developing the skills of students to think and solve every day problems by application of science and

technology in daily life," said an official of the PSF while giving details about these caravans and exhibitions. According to details, in the federal capital, 30,500 students from 166 schools visited the exhibition, 28,950 students from 128 schools visited the exhibition in Sindh, 11,500 students from 45 schools visited the exhibition in Punjab. Similarly, in Khyber Pakhtoonkhaw, 14,000 students from 67 schools visited the exhibition and in Balochistan, 5,180 students from 24 schools visited the exhibition.

## PTA, FIA start operations to control grey telephony

STAFF REPORT KHI: The Pakistan Telecommunication Authority (PTA) has equipped itself with a more efficient system in order to identify international calls illegally terminated by the country's gateway exchanges.

A recent raid on the office of Wisecom, one of Pakistan's 14 long distance international (LDI) operators based in Islamabad, demonstrates that the newly acquired technology has already started to pay off.

It is to be mentioned here that PTA and Federal Investigation Agency (FIA) have joined hand to control the grey telephony which is incurring billion of rupees loss to the national exchequer annually.

Their combined team has recently raided Wiscom's office in the federal capital and found the accused were illegally terminating international telephony traffic in

Pakistan. The company, according to a PTA official, was found terminating approximately 360,000 illegal international minutes on a daily basis, which were shown as local



traffic thus evading government levies on international calls landing in Pakistan.

This was possible with the help of a new technology - grey traffic monitoring equipment - that PTA installed early this October. The system is capable of identifying international minutes that are shown as local minutes by the gateway exchanges involved in grey trafficking.

## WWF, Maldives sign deal to save tuna fish

STAFF REPORT LHR: The World Wide Fund for Nature, Pakistan, has signed a memorandum of understanding with the Ministry of Fisheries and Agriculture and the government of Maldives, through its Marine Research Centre (MRC) in order to support Maldives in its efforts to provide sustainable management of tuna fish in the Indian Ocean during the next three years.

The agreement aims to extend technical and institutional support for the development and conservation of Maldives' marine resources and will focus on the development of sustainable management practices for skipjack and yellow fin tuna in the Maldives.



The MoU also aims to build and strengthen collaboration between the organisation and the government, and to share scientific expertise. They will develop and participate in Fisheries Improvement Projects in order to address global issues such as climate change and its effect on fisheries.

The MRC has agreed to provide facilities for the collection of information about oceanographic parameters through use of scientific equipment and access to available data.

The WWF will provide technical expertise for capacity building and training exercises in areas including fish stock assessment, aquaculture practices, education and awareness and other related scientific studies.

## Islamia university to have 2MW solar power plant

STAFF REPORT BWP: The Punjab government has approved installation of a solar power plant at the Islamia University's Baghdadul Jadid Campus.

It was learnt that the 2.5-megawatt project will cost an estimated Rs465 million and is expected to be completed within nine months.



According to details, in order to oversee implementation of the project, the government has formed a steering committee.

A notification issued of the Punjab energy secretary, Islamia University (IUB) VV=C Prof Dr Mukhtar would be the committee chairman, while its members would include the energy sec-

retary, Lahore energy department chief engineer (power), representative of the Punjab planning and development chairman, projects director of the chief engineer (power), Lahore, and IUB planning and development director.

Experts said that the installation of such a big power plant would not only help

meet the requirements of the varsity, but also be able to fulfil the growing demand of electricity of Bahawalpur city.

In the wake of the persistent energy crisis in the country, the government is extensively exploring the alternative energy resources and encouraging initiatives from the private sector as well.

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**EdTweet**

**Lacking required focus of science & tech**

With the fast changing methods and dimensions of developments, the world still desperately needs more and more highly professional research and development especially in the field of science and technology. This sector has always witnessed evolutionary changes but now its dimensions have changed with the revolutionary trends which have substantially dominated almost all fields of human life. Today, in a world changing quickly, we need more science and we need more qualified scientists. Science is a force that brings people together, to join hands in the pursuit of knowledge. Science is our best ally to tackle the consequences of climate change, to foster the culture of innovations all societies across the world need today. On November 10 the whole world including Pakistan observed the World Science Day with holding rallies, debates, seminars and TV shows and above all they renewed their commitments not only to make further research and progress in this field but also to ensure peace and development and to stress the responsible use of science for the benefit of society. In Pakistan, no doubt, some organizations particularly Pakistan Science Foundation, Pakistan Council for Science Technology and educational institutions arranged some purposeful activities to mark the World Science Day. However, notably the awareness level of students and common people is not at the level where it should have been. This is also a hard fact that our government is making comparatively taking better initiatives as compared to what the earlier governments have been doing with this significant sector. And as subsequently, the nation had to face a lot in terms of low pace of science and technology, weak data collection system, lack of coordinated policies as well as expertise to handle natural disasters. However, it is never too late; things can be put on right track by reprioritizing the options available with the authorities concerned. This was what the developed nations had done in the past and now they are reaping massive benefits of progress. This is undoubtedly not an easy job; nation will have to sacrifice a lot but for their own better future. Though the culture of arranging exhibitions and job fairs has started developing, still the existing gap of coordination between academia and industrial sector can be termed a major factor behind non-promotion of innovative culture in the country. Both the sides need to come more closer to each other and share their professional requirements, so that the pace of science and technology is ensured in the required patterns.

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**Imparting education or minting money**

PAKISTAN'S economy mostly depends on World Bank and IMF loans. Our rupee is around Rs107 to a dollar while the value of India's currency is twice as good as ours. Even where the standard of education and educating the nation is concerned, we are far behind India. An expo guide for shaping the future was held recently, inviting expecting students for registration. However, the tuition fees for academic year 2014-15 was Rs700,000. Only the rich could afford such a large amount. Most of the children returned home disappointed. In fact, it is not the World Bank or the IMF which keeps our country mortgaged for all times to come but also world-reputed financial institutions which do so.

GHEEWALA  
Karachi

**PhD interims: a plea to HEC**

THE HEC has played a dynamic role in promoting higher education in the country. These efforts set high standards of research and education to ascertain the level of teaching and learning and to provide quality education. In this regard the commission introduces interim placement of fresh PhDs programme, a foothold for the aspiring PhD scholars after the completion of doctorate from an HEC-recognised foreign or Pakistani university, a one-year contract after joining the institution. There are so many scholarships awarded to eligible students every year nationally and internationally as well, the Higher Education Commission requires a large amount of funds to maintain

all these programmes but the shortage of funds and the absence of the chairmen have created so many hurdles regarding scholarship expenses for those who were abroad for education, as well as for those who are appointed in IPPF programme. The HEC has not paid any assistant professor for six months. This shortage of salary is now unbearable for those who are the only bread earners of their families. The authority concerned should resolve this problem.  
DR SAFIA NIAZI  
Karachi

**Saving crops in Thar**

In Thar, there is no canal system and rain is the single source of water for growing crops. There were heavy rains this year and people were delighted. But the sudden attack of harmful insects on crops has shattered the hopes of the locals. Almost 70 per cent crops have been destroyed. The chief crops of Thar such as bajra, gawar and moong are produced in large quantities. Besides, other agricultural products of Thar are a good source of economy for the country. Gawar is exported by the tons to other countries, but this year gawar is badly affected. It has created problems for the already backward area of the country. Tharis are unaware of the use of insecticides and as such its encouragement is needed to save the precious national income for the economically crunched country. No action has been taken so far by the authorities concerned to save the valuable crops for the people, as well as for the country's economy. The authorities should take immediate remedial measures in this regard.  
M.ASLAM SAMEJO  
Thar

**AGRITECH**

**Rainwater harvesting a potential remedy**

By Tech. Mohammad Ghufan Monim Pasha Khan Kandhari

RAIN WATER harvesting is the way through which collection and storage of rain water that runs off from rooftop, parks, roads, open ground etc. This runoff water can be either stored or recharged into the groundwater table. The scarcity of water is increasing year by year in Pa-

a population about 2.48 per cent of overall world population (UN, 2009). The total population increased from 34 million in 1951 to 170 million by the year 2010. In Pakistan the proportion of urban population increased 17 per cent to 36 per cent from 1951-2010 with urban population of 58 million and

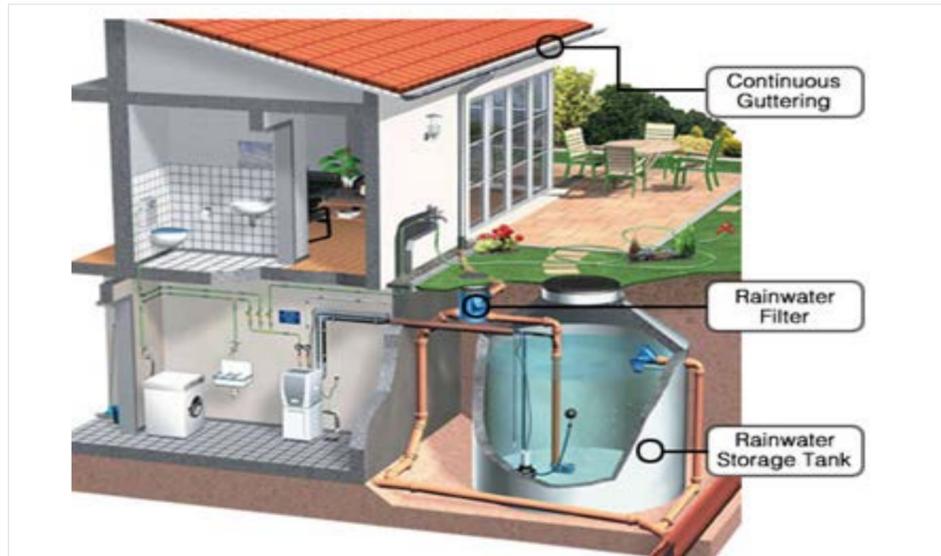
100m<sup>3</sup> which is itself a dramatic change due to our non-responsibility toward water resources saving, and put all responsibility on government and politician. Some facts of water resources of Pakistan of water saving is we have

- Water surface about 138 MAF

water harvesting; we waste this natural and more beneficial for the health of human bodies and for local agricultural cultivation, and dump with waste polluted water it in our sewer by discarding it in. These above some facts of lack of water availability and its consumption bomb in

ments & housing development organization represented were also trying to give boost to this concept during seminar in presentation. Dr. Ifrikhar Ahmad from College of Earth and Environmental Sciences, University of Punjab, Lahore, described the purposes, management condition of rainwater management in Punjab, benefits of use and recharge.

take all the things which we take from it. In Pakistan, there is an urgent need on an emergency basis to develop and implementation of water resource management in urban areas through RWH technique at dense populated city areas of Pakistan. Both general techniques serve like which would I like to call "Bread & Butter Phenomenon; this is our daily life example at breakfast, when we spread butter on slice of bread, it fills up all pores of slice and remaining still on butter spreader." So in the case of rain falling at city or some specific area same phenomenon will occur. If we build Rain Water Harvesting RWH techniques, and the remaining runoff on road or under local urban management areas which ease to control it so the chances of flooding will minimize less damages of local private/public properties, less consumption of manpower to control emergencies and minimize the chances of deaths."



kistan. In past due to passing the Ravi River, the natural phenomenon at most of area of Punjab's water ground table recharging occurred. But now due to our negligence, ill government policies and political non-priority towards "Indus Basin Treaty", set back the entire water source in the favour of India, who captured our all sources of water and is constructing water reservoirs year by year which is resulting in our water resources to decrease and making it difficult to carry on the natural phenomenon of water table recharging. In next five years Pakistan will face lack of water at deadly level, so there is a need on emergency basis to develop management of water resource through rain water harvesting in urban areas especially the dense populated cities of our country.

Both hasty urbanization and high population growth rate directly impacted the water demand for domestic industrial and agricultural sectors. In Pakistan, about 96 per cent of its available water is being used for agricultural purposes 2 per cent for industries and remaining 2 per cent is for domestic uses. In Pakistan at Punjab is much organized in water management aspects, beside that approximately 35 per cent of domestic water supply is unaccounted for water (UFW) because of management & material various issues and including rain water become sewer problem for urban management bodies especially during monsoon seasons many death occur and damage properties. The availability of water from 1950-2010 is 5600m<sup>3</sup>.

- Total available storage 16MAF
- Sedimentation in storage - 0.16 MAF per annum
- Canal diversions - 106 MAF
- Groundwater availability - 55 MAF
- Groundwater withdrawal - 50 MAF
- Irrigated area - 18 Mha
- Available for additional cultivation - 12 Mha;

near future will explode in Pakistan and this start now; it only is stop by putting all resources and capabilities to manage water resources otherwise result in form of drought, etc. On August 13, 2013, urban unit in Lahore at the Al-hamra Art Council, arranged a seminar to grow initiative in favour of "Rainwater Management in Urban Areas". Earthquake Reconstruction and Rehabilitation

Syed Zaheer Hussain Gardezi; Project Director - PRWH Project, ERRA, also doing such a laudable work to reconstruction in northern areas which had got affected in the 2005 earthquake. Recently they applied the concept of Rain Water Harvesting (RWH) by "Roof top management technique" most of people of that area get fulfill their needs of water for domestic needs by snow falling and rain falling at the roof which accumulate at storage tank. By Syed Muzammil Husain Jafri Chief Engineer: In Gujranwala at DC Colony management has taken an initiative to accumulate the rainwater to recharge the Ground Water Table (GWT) of society "by applying "PIT Technique" which grand total cost was more than 150,000/- Rs, and recharge the area of society GWT approximately >70,000>ft<sup>2</sup>.

The government of Pakistan and provincial governments have to take initiatives in this aspect to make by-laws and codes by the help of technologists. To regularize that on residential, commercial, un-developed green areas, green belts between roads, parks and housing societies at urban areas. Both the techniques of RWH has limitation in aspect of application; The roof top management technique is only suitable at developed areas, while the GWT recharge technique is only suitable at large area where building are far to each other, due to this technique the chances of settlement of ground could be so the building collapsing chances increase. So we have to understand the need of both techniques at suitable technique according to the principle of engineering.

Pakistan's Water Scenario		
Year	2004	2025
Availability	104 MAF	104 MAF
Requirement (including drinking water)	115 MAF	135 MAF
Overall Shortfall	11 MAF	31 MAF

Source: Ten-Year Perspective Development Plan 2001-11, Planning Commission

From 2004 up to 2025 will be Due to unawareness about importance and need of rain Authority (ERRA), WASA, WAPDA & different other private/public sector department above-mentioned technique with proper codes; otherwise nature will not forgive us and

**REPORT**

**Mega event of IEEE Pakistan Student, GOLD & WIE Congress**

By Prof. Dr. B.S. Chowdhry

THE MEHRAN University of Engineering & Technology (MUET), Pakistan, in collaboration with the IEEE Karachi Section and IEEE Communications Society - Karachi Chapter, organised a three-day mega event titled 'IEEE Pakistan Student, GOLD & WIE Congress (IEEE PSGWC'13)' at its campus in Jamshoro between October 23-25, 2013. The theme of the congress was "Engineering: A sustainable future for Pakistan".

In his welcome address, Chief Organiser for IEEE PSGWC'13, Prof. Dr. B.S. Chowdhry said that IEEE is the world's leading professional association for the advancement of technology. He continued that the IEEE community is mandated to serve professionals involved in all aspects of the electrical, electronic and computing fields and related areas of science & technology that underlie modern civilization. He mentioned that the congress attracted more than 400 participants from all over Pakistan. These participants included students, graduate engineers and experienced professionals from the industry. Prof. Chowdhry also announced that soon a petition will be filed to form a new subsection (IEEE Jamshoro subsection) under the IEEE Karachi Section. This, he said, will bring many advantages to the students of universities in the vicinity of Jamshoro.

In his address on the occasion, Engr. Parkash Lohana, Vice Chair of IEEE Karachi Section, highlighted the learning opportunities provided by IEEE within engineering sciences, research, and technology. The goal of the IEEE education programmes, he said, is to ensure the growth of skill and knowledge in the engineering-related technical professions and to foster individual commitment for continuing education among IEEE members, the engineering and scientific communities, and the general public. Prof. Dr. M.A. Uqaili, the chief guest of the inauguration ceremony, who is also the Pro-Vice-Chancellor of MUET, enlaid the role of IEEE as one of the leading standards-making organisations in the world. He said that through the IEEE Standards Association (IEEE-SA), IEEE performs standards making and maintaining functions. These standards affect a wide range of industries including: power and energy, biomedical and healthcare, Information Technology (IT), telecommunications, transportation, nanotechnology, information assurance, and many more. He also said that just in 2013, IEEE has over 900 active standards, with over 500 standards under development. He said the MUET authority will extend all the cooperation needed for organizing IEEE activities. The event included 11 seminars, 4 technical lectures, 9 competitions, a panel discussion and 2 keynote talks from highly distinguished speakers. The seminar's topics were IEEE SIGHT, IEEE TISP, IEEE EPICS, IEEE Academic, IEEE RDPP, Technical Report Writing, Career Planning, Leadership and

UK. He was also the IEEE President Elect candidate for 2013. In his speech, Prof. Durani highlighted the importance of volunteering and participating in extra-curricular activities, especially for engineering. He said that "engineering" can really be the key to development for Pakistan and discussed the role Pakistani engineers will have to play in this regard. The keynote speech on the second day was delivered by Dr. Stefano Bregni, who an associate professor at Politecnico di Milano, Milan, Italy. Apart from holding various other portfolios within the IEEE, Dr. Bregni is currently the IEEE Communications Society Vice President for Member Relations. In his speech, Dr. Bregni talked about the role played by IEEE Communications Society in the development of telecommunication standards globally. He also talked about the benefits of attending such events and participating in competitions. At the end, he encouraged participating students to take part in the IEEE Communications Society's "Communications Technology Changing the World" competition, which he said, was designed to provide exposure to students working in the field of communication engineering and related technologies. At the concluding ceremony, Jam Khan Shoro, the Minister for Livestock and Fisheries, Sindh, congratulated organisers from MUET on the success of IEEE PSGWC'13. He further said that it is good to know that the PSGWC'13 congress aimed at bringing together a

wide spectrum of national and international experts to facilitate a creative environment for the promotion of collaboration and knowledge transfer under the umbrella of IEEE. He called upon the young generation of engineers and researchers to come forward with zeal and zest to provide the beacon light to solve the problems that the country faces due to the lack of appropriate technology and data and information. While commenting on the high ranking of MUET amongst engineering universities in the country, he said that it makes the Sindh government proud to know that institutions within the province do not lag behind in the field of engineering and technology. Dr. AQK Rajput, Vice Chancellor of MUET, mentioned that it is due to the appreciation of merit within

here are taking maximum efforts in empowering students to build their careers, and giving back to society. He along with Dr. M.A. Uqaili also appreciated the tireless efforts of organising committee of the event. IEEE Asia Pacific Region 10 Student Activities Committee Chair Engr. Om Parkash Batra, who travelled all the way from Australia to attend the congress, motivated students to work hard, arm themselves with latest technology and get maximum benefits by taking part in IEEE professional development activities. At the end, the chief guest awarded shields to guest speakers, judges and organising committee members. He also distributed cash awards to the winning teams who took part in competitions. The event was sponsored by IEEE Karachi Section, High-



the university and the highly qualified faculty, MUET has taken a lead in imparting quality engineering education for less-privileged people of the region coming from remote areas of the country. He said that MUET produced first PhD in engineering in the country and faculty members

er Education Commission Pakistan, ICT R&D Fund Pakistan, and IEEE Communication Society - Karachi Chapter. Also the event was cosponsored by Jubilee Corporation, Ideal distribution Line, Paktech Instruments and Rastek Technologies Karachi.



By Syeda Saadia Fatim Ali

HEALTH

# Personalised genomics

PERSONAL genomics that area of genomics concerned with the sequencing and analysis of the genome of an individual as 97 per cent genome of population of world is same difference lies here in three per cent hence in order to find mutations either single nucleotide polymorphism (SNPs) or Copy Number Variation (CNVs). Interest for personal genomics began in 1990 as with the Human Genome Project, an effort towards the sequencing of all the genes in a human being, which was completed in 2003 at a cost of \$3 billion. Now researchers are using this as a reference genome and exploring novel variants in whole genome from point mutations to structural variations. Which can be then use for studying associated characters and diseases.

A revolutionary change has been made in personal genomics with the development of next generation sequencing technology (NGS) that will ultimately progress towards the reality of personalized medicine. A large number of variants over one million can be studied using microarray genotype technology that result in formation of companies that offer individual DNA profiling and interpretation.

Personalized genome provokes the concept of personalized medicine. Researchers say that if two persons have same disease one cure other not than his genetic makeup is responsible for that hence

comes the idea of personalized medicine to distinguish from the sense in which medicine has always been inherently "personal" to each patient. Using new methods of molecular and genetic analysis to better manage a patient's disease or predisposition to disease is likely to change the way drugs are discovered and medicines are prescribed. Rational drugs save millions of lives a year. Personalized medicine uses information and data from a patient's genotype. This technique involves studying the level of gene expression to stratify disease, selecting a medication, providing therapy or initiate a preventive measure that is suitable to particular patient at the time of administration. The use of new molecular analysis methods and bioinformatics to better manage a patient's disease or predisposition to disease is likely to change the way drugs are discovered and medicines are prescribed.

A movie named GATTA-CA (name derived from four nucleotide bases G,A,T,C) and released in 1997, is an engrossing sci-fi thriller about an all-too-human being who dares defy a system obsessed with genetic perfection, draws an attention of a person towards the incredible world of personalized genomics and development of personalized medicine.

Importance of individualized human genome projects. Research on several genome projects running by

different countries collaboratively as well as individually adding to the progress of research in this area. Some of the huge projects are;

Human Genome Project (2003): First genome project was completed in 2003. At least 18 countries have participated in it. The main objec-

Genetics. 1000 Genomes (2008): This project was started in early 2008 to know the human genetic variation by sequencing genomes of 1000 volunteers from different ethnic groups around the globe, completed in 2010 and published in nature in 2012, sup-

With the collaboration of Danish scientists, researchers worked on 4,750-2,500 C samples to test what extent ancient genomics can contribute knowledge about now extinct cultures, while little is known about their phenotypic traits, genetic origin and biological relationship to

neur, Marjolein Kriek Dutch, a clinical geneticist, and George Church Harvard, a molecular geneticist.

Dr Atta ur Rehman's Pakistan has also become the sixth country in the world to map the sequence of one of its nationals after the US, China, UK, Japan and India. Dr Rahman's genome shows that Pakistanis are more similar to Europeans than Chinese and Africans, said Assistant Professor Dr Muhammad Kamran Azim who had headed the team of the Pak Genome Project. It also shows 200,000 specific sites unique to the Pakistani human and 80,000 sites common with the Indian human.

Other country based genomic projects include Korean Personal Genome Project (KPGP), Sri-Lankan Personal Genome, Arabian Genome Project: Indian Human Genome Project: Irish Human Genome, Australian Human Genome and African Genome Project.

Another genome from northwest province of Pakistan has also been sequenced by a group of scientists at Centre of Excellence in Molecular Under the supervision of Prof. Dr. Tayyab Hussnain (Director CEMB) and Dr. Zia Ur Rehman (Head of Bioinformatics Unit CEMB) in collaboration with the Personal Genomics Institute South Korea.

Personal genomics companies: With the increasing

awareness about personalized genomics and its likely benefits, there are various companies going to engage in this business. According to the survey conducted by the National Human Genome Research Institute (NIH) with the progressing years the cost of sequencing has declined.

The companies attract their clients by providing them services like full genome sequencing or recreational and clinical genomic diagnostics and making the cost from as high as \$68,500 to as low as \$199 vary company to company.

These companies offer disease association and ancestry based studies of individual as well.

These companies may include Knome, EveryGenome, PersonalGenomes, Coriell Personal Medicine Collaborative, 23andMe, DeCODEme, Counsyl, Navigenics, PathwayGenomics, DNADirect, GenomicHealth/OncoPrintDX, Omicia and India also has developed its company named as Mapmygenome. In this area Pakistani researchers keep on working to make their name.

Ethical implications: With the development of personalized genomics, no new ethical issues were raised, but highlighted many existing genetics related challenges.

One of the main and important issues is the handling of an individual's genetic data. What should be the private privacy rules for this?

What if a person has been

diagnosed for some psychological, health, or societal risks which he may feel like he doesn't want this information? He could feel worried about overestimated disease risks and could suffer from anxiety.

The genetic information obtained from an individual is as similar as other family members or may be of a whole population. Should that information be shared with others?

Unfortunately, even after a decade, no such rules and regulation have clearly been laid out internationally. Public should be educated on the dimensions of genomic sequence including professionals like physicians and science writers, who must be provided with the understanding essential to instruct their patients and the general people.

There are certain professional issues as well like if a person goes for the personalized genomic testing and if it becomes mandatory to submit the test report and if he or she comes to know that in future he or she will be at risk of vulnerable spreadable diseases like AIDS and Hepatitis, so what will be its professional career's fate is questionable.

There are also some chances of raise in personal issues. If a person knows about his future prone to diseases, it causes various psychological manifestations like stress conditions, inferiority complex and various mental disorders.

**Personalised medicine uses information and data from a patient's genotype. This technique involves studying the level of gene expression to stratify disease, selecting a medication, providing therapy or initiate a preventive measure that is suitable to particular patient at the time of administration. The use of new molecular analysis methods and bioinformatics to better manage a patient's disease or predisposition to disease is likely to change the way drugs are discovered and medicines are prescribed**

tives were to identify ~25,000 genes in human DNA and to de-code the 3 billion base pairs that make up this DNA. Moreover, the data collected, stored in databases and freely available publically on web.

Personal Genome Project (2005): This is a long term, large cohort study which aims to sequence and publicize the complete genomes and medical records of 100,000 US volunteers and add the information to the field of personalized genomics and personalized medicine spearheaded by George Church of Harvard's Center for Computational

Genetics. 1000 Genomes (2008): This project was started in early 2008 to know the human genetic variation by sequencing genomes of 1000 volunteers from different ethnic groups around the globe, completed in 2010 and published in nature in 2012, sup-

ported by the Wellcome Trust Sanger Institute England, Beijing Genomics Institute China and NHGRI National Institute of Health. Pan-Asian Population Genomics Initiative (PAPGI): The aim of this platform is to analyze Asian genome sequences and to associate them with local adaptation, human migration, and genomic diversity associated with phenotypes and diseases in Pan-Asia area, hence helping scientific community for further research in human evolution and medical applications. Ancient Genome Project:

present-day populations.

On individual basis many renowned persons sequenced their genome including Ozzy Osbourne, Larry King, Glen Close, Steven Hawking, Paul Allen Microsoft, cofounder of Microsoft, Craig Venter, American Biologist, James Watson, co-discoverer of DNA, Desmond Tutu, Archbishop Sitting Bull Lakota Chief, while in UK the Ice Man from Greenland, Esther Dyson, Swedish notable techie entrepreneur Steven Quake Engineer who had designed a cheaper test, Hermann Hauser, an entrepre-

REPORT

# Nathiagali Summer College, a mother of many institutes

PAKISTAN harbours high dreams of becoming a state having high standards of science and technology driven progress and of course is making strenuous efforts to get these dreams materialized. However, the pace of progress is still not up to the mark; but the potential especially of science and technology academia is undoubtedly is at a high level. To recognize the remarkable services and pay glowing tributes to the envious personality - former Director of Summer College Dr. Riazuddin - and highlight the rich contribution of Summer College, the Second National Space Conference, University of Karachi, has re-

particularly, Pakistan. The Colleges have played a valuable role in providing a recognized forum for discussing most recent trends and results in various fields of physics. The remarkable ability of PAEC to sustain the Nathiagali Summer College activity to its 38th year shows the firm conviction of the PAEC towards the promotion of science & technology in the country. In this event a broad spectrum of the research and educational institutes of Pakistan are represented.

Science also brings with it harmony, unity and beauty which is the hallmark of such conferences as is the International Nathiagali Summer

**Nathiagali Summer College over the years has provided great stimulus to the scientific activities in this region, particularly, Pakistan. It has played a valuable role in providing a recognised forum for discussing most recent trends and results in various fields of physics. The remarkable ability of PAEC to sustain the Nathiagali Summer College activity to its 38th year shows the firm conviction of the PAEC towards the promotion of science & technology in the country**

international centres of learning. The government of Pakistan is fully supportive of this activity and very much looks

forward towards CERN and ICTP for collaboration in basic science field. He mentioned that this collaboration

will increase with the time. Dr. Syed Javaid Khurshid said that they must remember at this time our own No-

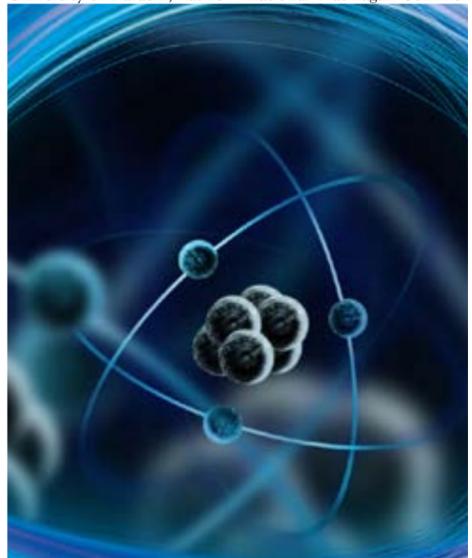
ble Laureate late Professor Abdus Salam who was the thinker and founder as well as a passionate supporter of the International Nathiagali Summer College. This institutions is the only one of its kind organized in a developing country. It has been continuing for the last over 38 years. Over the years, the college has served as a window to the latest developments in science and technology and has been particularly useful for PAEC, our national universities and other centers of learning. It provides a unique opportunity to our young scientists to establish contacts with the world renowned scientists.

He recalled that the 39th college of the series was held June last and mentioned that how university students get benefited from this college and was able to secure scholarships. He also revealed that the next summer college will be on Plasmonics and Metamaterials and Accelerator Physics. He mentioned that it was very essential to develop the accelerators of 6-16 MeV in the country for radiotherapy of cancer patients to upgrade health care services.

Dr. Syed Javaid Khurshid said that PAEC at present is handling as any as 18 cancer hospitals across the country and is treating over 750,000 patients/year and most of them are treated free of cost. The PAEC is the only organi-

zation which registers cancer patients at every stage and is providing cancer treatment facilities free of cost to poor patients. He also mentioned that Chairman PAEC is very much concerned to develop the treatment facilities throughout the country even at less distances so the poor patients do not have to travel long distances and can reach the facilities timely.

It was really an good event in a sense that the audience were appraised in detail of the remarkable services of the renowned personalities from the science and technology field, their vision and about what they had dreamt of Pakistan regarding a strong state in the comity of nations.



cently been organized. Speaking on the occasion, Dr. Syed Javaid Khurshid, Executive Secretary Summer College, Nathiagali, gave a presentation about the role of the International Nathiagali Summer College in Pakistan's science and technology. He especially focused on former Director of Summer College Dr. Riazuddin who passed away on September 9, 2013, and talked about the role played by the Summer College in developing the state-of-the-art technologies in the country.

College. It is only through science and technology that a nation can find a place in this modern world. We need to make dedicated efforts to transform the Pakistani society into a modern and prosperous one, said Dr. Syed Javaid Khurshid.

The Colleges have opened various channels of communications with the world scientific community and the presence of Dr. Fernando Quevedo, Director ICTP, and Dr. Joseph Niemela, Head of International Collaboration ICTP, and Director General Dr. Herun, CERN and Dr. E. Myers, Director Accelerator Technology CERN was indicative of our effective scientific collaboration with

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## World CIIT moot focuses on China power sector

**STAFF REPORT IBD:** The COMSATS Institute of Information Technology, Islamabad, in collaboration with Tsinghua University, Federation of Pakistan Chamber of Commerce & Industry and Islamabad Chamber of Commerce & Industry has recently organized a two-day international workshop titled, "Doing Business with China" in Islamabad.

In the backdrop of China's ascendancy to the economic powerhouse of the world, this two-day workshop focused on the Pak-China business relations and prospects for further expansion.

"This endeavour will go a long way in facilitating the current and prospective Pakistani and Chinese businesses to capitalize on existing and upcoming opportunities in both countries," said an official of the CIIT while talking to media after the event.

He also said that the workshop has provided both learn-

ing opportunities as well as a platform for networking."

Earlier, the participants had an in-depth understanding of Chinese psyche, business culture, methods to create favourable associations, marketing entry strategies by participating in the workshop.

They took with them a roadmap evolved during the workshop for doing business with China.

The resource persons included experts and representatives from well-reputed organizations from China and Pakistan including Tsinghua University China, Board of Investment Pakistan, Trade and Development Authority Pakistan, China enterprises Investment Association, Global Industrial Solutions China, Pak China Investment Company, Supreme Techno crafts, China Heavy Steel Co. Ltd, Chambers of Industry and Government Organizations.

## Higher quality education key to nation building

**STAFF REPORT IBD:** Higher education is the key to the nation's socio-economic development and the universities need to impart quality education to students to help them compete in the contemporary digital world.

"There is no dearth of talent in the country as many talented youth had demonstrated their metal at the national and international level," said President Mamnoon Hussain while addressing the 6th convocation of Quaid-e-Azam University recently held at the Convention Centre here.

He called upon the universities to pay greater attention to devise educational and research programs relevant to the present and future development needs of the country.

He said it was also highly imperative for the universities to produce individuals with strong character and moderate temperament to build a just and tolerable society.

He apprised the audience of the latest achievements of the QAU and mentioned that the university was at the number one ranking by Higher Education Commission among medium size universities of the country for the last four years.

He said that 75 per cent of the faculty holds a PhD degree while 36 per cent student body comprises M.Phil/Ph.D.

Later, President Mamnoon Hussain awarded degrees and medals to the distinguished students. Vice Chancellor Dr Yasinza presented souvenir to the President.

As many as 1708 students were given degrees in Masters program, 786 in M.Phil and 181 in Ph.D.

## Warid sets record by selling high post-paid SIMs

**STAFF REPORT IBD:** Warid Telecom has sold more than 19,000 post-paid connections in a single month marking a new record in the field of telecom sector which is witness a tough competition.

According to insiders, this record number of 19,000 postpaid sales came through franchise, Corporate Sales



and Business Center network, which is a record score for any cellular company in a

single month.

They said that the postpaid customers are treated as the special customers as they pay their bills in advance while they also deposit cash security on new post-paid connection.

The customers having these connections are considered as strength of an operator, this is why almost every cellular company offers really low-priced plans to gain post-paid base.

In fact, the lucrative post-paid segment is usually less concerned over price while they desire outstanding network with crystal clear voice quality, consistent connectivity and premium care services. Usually the elite and business class prefer a post-paid connection. Postpaid segment not only adds great value to revenues but it also indicates the quality of network and service standards maintained by a cellular service provider.

## 11 PTCL officers nominated to join Etisalat

**STAFF REPORT IBD:** PTCL has recently celebrated the remarkable success of its top talent, as 11 out of 15 nominated PTCL employees have got selected for Etisalat Group's prestigious High Potential Development Programme.

These solid performers with strong leadership potential have qualified for this exceptional development programme after undergoing an extremely competitive and rigorous assessment process undertaken by reputed international consultants in which high performers representing from 17 countries of Etisalat operations participated.

The Etisalat Group has introduced several remarkable initiatives and world-class practices in PTCL, thus significantly fuelling its journey to stand out as a progressive organization and enabling PTCL to make invaluable

contributions for uplifting the nation.

The Group High Potential (HiPos) is an extraordinary programme which presents unmatched opportunities for training & development, networking, hands-on experience of real business challenges and bright prospects for international exposure.

Last year 4 members of the PTCL's talent pool had graduated from the programme with distinction, leaving a mark of excellence, which is indeed a very strong indicator of the quality of talent available within the company.

"Employee development initiatives are a critical and strategic investment that leads to improved productivity and satisfaction, skill enhancement, and development of a succession pipeline," said Syed Mazhar Hussain, Chief Human Resources Officer, PTCL.

## Meeting briefed on Continental Shelf Programme

**STAFF REPORT IBD:** UN Subcommission of the United Nations Commission on the Limits of Continental Shelf (UNCLCS), established to review Pakistan's case on the limit of the continental shelf as a result territory behind 200 nautical miles, of more than 50,000 square kilometers is expected to be secured for exclusive resource exploitation purposes.

This was revealed at a recently held meeting of the Inter-Ministerial Technical Evaluation Committee (TEC) on the Continental Shelf Programme of Pakistan. The meeting was chaired by Federal Minister for Science & Technology Zahid Hamid.

During the meeting, Dr. Asif Inam, Project Director, gave a detailed presentation on the Pakistan Continental Shelf Programme.

He apprised that the foreign consultants have advised that the technical team should be made available in New York for meeting with the Sub commission to address any queries related to Pakistan's case.

The minister sought the opinion of TEC members regarding the composition and size of the delegation. After detailed discussion the minister agreed with the suggestion that a four-member technical delegation.

The minister appreciated the Technical Evaluation Committee and the technical team for their efforts in this project of national significance. He further added that the honourable Prime Minister of Pakistan is fully aware of the project and assured on behalf of PM his complete support.

## Texitech signs agreement with Propalm

**STAFF REPORT IBD:** Texitech was taken on as the local authorized distributor for Propalms Ltd in Pakistan. The agreement was signed by Sohail Ur Rahman, Director, Texitech, and Owen Dukes, CEO, Propalms Ltd, UK.

Commenting about the collaboration between Texitech and Propalms, Sohail Ur Rahman said that he is pleased to announce the

of Products from Propalms and are very excited to be the pioneers of a new technology in Pakistan."

Propalms Ltd is a global provider of application delivery and secures remote access solutions for Remote Desktop Services and Virtual Desktop Infrastructures.

An important product in this portfolio is the Zero clients, a hardware product used in desktop virtualization. The technology enables users to reduce power and IT maintenance costs as well as its TCO compared to standard desktops.

In addition to major costs savings, the technology enables a company to allow more efficiency and flexibility for its IT infrastructure.

Texitech has grown from a small, focused and professional set-up marketing products services and solutions in the field of CAD/CAM and Design to a full-fledged IT Distribution company offering over 2000 products from all over the world to the Pakistani market.

## Mobilink auditions bring 'Pakistan Idol' to masses

**STAFF REPORT LHR:** Mobilink's mobile auditions have so far received 10,861 entries from participants aspiring to participate in the Pakistan Idol. The company's mobile auditions mark the first time in the history of the global reality show that participants have been able to send in their nominations using call-ins.

As the official cellular partner of Pakistan Idol, Mobilink took on the responsibility of empowering 37 million subscribers on its network by providing them access to Pakistan Idol through their mobile phones.

According to details, the resulting call-in nominations were received from over 850 cities, towns and villages from across Pakistan.

"As Pakistan's telecom industry leader, Mobilink



understands its responsibility to provide an equal opportunity across the length and breadth of the country to participate in the world's largest music reality show. Mobilink takes great pride in having increased the outreach of 'Pakistan Idol' to over 850 locations across Pakistan," remarked Farid Ahmad, Vice President Marketing, Mobilink.

Pakistan Idol will follow a similar pattern as the international 'Idol' series. A total of 100 participants are to be finalized in the first round, based on in-person and mobile auditions. As many as 40 will be further short-listed to reach the 'Theater Round' where they will compete in group and individual performances.

## Samsung keen to invest in wind, bio-energy sectors

**STAFF REPORT IBD:** Samsung C&T Corporation's Trading & Investment Group desires to participate in Pakistan in the field of energy and environment that are likely to serve as drivers for the country's future growth of Pakistan. The key areas of interest are wind power, bio-energy and other renewable energy sources.

Most recently, Samsung C&T General Manager Joonwoo Choi called on Chairman Board of Investment, Mohammad Zubair and Secretary BoI, Imran Afzal Cheema, to discuss new investment prospects in Pakistan.

Joonwoo Choi apprised that the company is one of the world's finest construction and engineering companies and interested to invest in the construction of Kohat Tunnel. Currently it is providing the leading role in the construction of several worlds' largest building projects such as Malaysia's Petronas Tower

and the Burj Khalifa in UAE. The BoI Chairman highlighted the investment incentives to the Korean investors and said that 100pc equity



and repatriation of capital, profits, royalty etc allowed to the foreign investors. The Chairman also mentioned about the establishment of SEZs for foreign investors.

## SPELT, CIIT world moot on English concludes

**STAFF REPORT IBD:** A three-day 29th annual Society of Pakistan English Language Teachers (SPELT) International Conference 2013 has recently been concluded which proved to be the largest and most representative moot of English in Pakistan.

The theme of the conference was: Surfing the ELT Wave: New Ways for a New Generation, while it was held with the collaboration of the Department of Humanities, COMSATS Institute of Information Technology Islamabad (CIIT).

Speakers have participated from Afghanistan, Bangladesh, New Zealand and USA and more than 400 participants attended the conference from different cities of Pakistan including Quetta, Gujarat, Faisalabad, Karachi, Lahore, Swat, Mardan, Wah, Bahawalpur, Manshera and Texila.

Fife MacDuff, Director Regional Language Office, US Embassy, was the keynote speaker. Appreciating the initiative, he said the event was indicative of the unflinching commitment of SPELT with the cause of English language in Pakistan.

Dr. Haroon Rasheed, Pro-Rector CIIT, Dr. Qaisar Abbas, Dean Social Sciences CIIT also addressed the gathering.

"The collaboration between SPELT and CIIT is a promising initiative having a long impact. This initiative will help strengthen the relationship between all stakeholders involved and will have a positive and lasting impact on the English Language Teaching community at large," he said.

Dr. Samina and Dr. Aliya also addressed the gathering and highlighted objectives of the conference.

## Siemens presents smart power systems

**STAFF REPORT IBD:** Siemens has presented a series of solutions aimed at boosting the reliability and efficiency of Pakistan's electrical power systems and industrial networks at the Karachi's IEEE Exhibition 2013. Siemens is the global powerhouse in electronics and electrical engineering which is operating in the energy, infrastructure,

industry and healthcare sectors.

At the event, Siemens Pakistan presented solutions to many of the challenges facing the country's power infrastructure, including Siemens Low and Medium Voltage Systems (Simoprime, Sivacon) and products (ACBs, MCCBs, MCBs, AFD - Fire Detection Equipment, Re-

lays), Smart Grid Systems, Network Analysis Tools, Load Management Systems, Fire Protection Systems, Motors, Contactors, PLCs, Security and Intrusion Protection.

The company also displayed the simulation model for its Energy Management System, which was designed specifically for Pakistani industries and buildings.

## Court seeks drinking water samples in Lahore

**STAFF REPORT LHR:** The Lahore High Court has directed the Water & Sanitation Authority to collect water samples from different parts of the city and submit a report after getting it tested from Pakistan Council of Scientific and Industrial Research laboratory.

The court was hearing a case against non-provision of

facility.

He argued that people were suffering from stomach-related diseases after drinking contaminated water. He requested the court to pass an order for the WASA and other authorities to provide clean drinking water to all areas of the city and install water filtration plant in all union councils of the provin-



clean drinking water in different areas of Lahore. The petitioner's counsel contended in the court that it was the responsibility of WASA to provide clean drinking water to citizens without discrimination but the most of city people are deprived of this

cial metropolis.

Official of the WASA had already told the court that water filtration plants were being installed to ensure availability of clean drinking water to all citizens. The court will resume hearing on November 19.

## Renewable energy projects insurance stressed

**STAFF REPORT KHI:** Managements of various renewable energy projects have been urged to involve insurance professionals at an early stage of the due diligence process in order to avoid unforeseen losses at a later phase.

This advice was given by speakers at a held one-day seminar on "Renewable Energy: Risk Management and Insurance Solutions" recently organised by the Karachi Insurance Institute, the speakers highlighted key challenges associated with managing risks in the field of renewable energy.

"Insurers can provide project lenders with a seamless cradle-to-grave, principal/owner-controlled insurance programme," said Asif Arif, who serves as commissioner of insurance at the Securities and Exchange Commission of Pakistan (SECP), while addressing the audience.



He observed that many project lenders are reluctant to sponsor projects, which are unlikely to have cradle-to-grave cover," he observed.

He said such programmes include construction insurance, marine insurance, including delay in start-up/advanced loss of profits and third-party risk.

Delivering a joint presentation on underwriting and engineering assessment of wind farms and solar plants, insurance professionals Alessandro Cerase and Mark N Quinn asked project managers to get those underwriters on board who are able to spread the risk and have some relevant past experience.



launch of Propalms products in Pakistan.

He further said that Texitech was "already in discussion with various Organizations regarding the purchasing and installation

## Science fair at PakTurk school attracts large visitors

**STAFF REPORT IBD:** In a festive ambience, young students of PakTurk School delightfully illustrated how science and art interconnect in real life offering valuable life lessons.

The well-demonstrated 3D models, showcased at the recently organized Third Eye Science and Art Exhibition in the Fatima Jinnah Park, offered the visitors a unique chance to see, hear and relate with the works of art that depicted human values while enjoying Turkish cuisine.

The exhibition was arranged by the PakTurk International Schools and Colleges.

Turkish Ambassador to Pakistan Sadik Babur Girgin was the guest of honour at the event. He curiously lis-

tened to the explanations and insights offered by young students while appreciating their endeavour.

He also expressed his keen interest and satisfaction about the intellectual ideas of students.

CDA Chairman Nadeem Hassan Asif while visiting the exhibition appreciated the work of students and said, "Turkey is a brotherly Islamic country which has been doing best to transform Pakistan's coming generations, society and the economy."

Lauding the economic cooperation and support during natural disasters by Turkey, he said that provision of affordable and quality education to the Pakistani children would have a very positive and long-term impact.

## World moot focuses on innovations, new ventures

**STAFF REPORT IBD:** The International Conference on 'Emerging Challenges For Organizations In Developing Economies (ECODE)' recently organized by the Bahria University (BU) Islamabad, has highlighted the issues related to innovation and new venture creation, organizational diversity and managing a new form of organization and the financial crisis. The event discussed all aspects related to innovation and new venture creation and the financial crisis.

The conference illuminated how universities will better equip students for the changing business and technological environments. It probed into the degree of venture creation and innovation versus technology and knowledge transfer in order to create a wealth of knowledge and a

better understanding of the pertinent challenges.

The speakers also evaluated the pivotal role of SME's and entrepreneurship in the development of an economy and how the creation of new ventures and new products are directly related.

New forms of organizations were also explored in context of handling diversity across linguistic, religious and cultural borders alike in an effort to forming and managing a new form of organization strengthening itself from utilizing diversity as an asset

Concluding the event, Rector of Bahria University, Vice Admiral@ Shahid Iqbal, said that collaboration in R&D will be required to meet the challenges and to broaden our horizons and to address these demanding issues.



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