



Bi-monthly Newsletter

National University of
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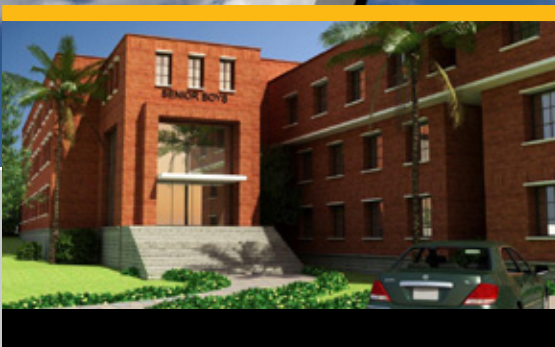
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of Academic
Excellence

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NUSTNEWS is a bi-monthly publication of Publishing and Student Affairs Directorate, covering various activities from across the University.



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July-August / 2016

1 IN THE SPOTLIGHT

NUST improves its global ranking

National University of Sciences and Technology (NUST) has improved its ranking, among top 100 world universities aged under 50, from 85 to 74 as per the ranking list 2016-17 issued by Quacquarelli Symonds (QS) of UK.

The category for the young universities has been designed with a view to highlighting their performance in teaching and research. NUST is the only Pakistani university that has been included in the ranking list. This achievement speaks of the hard work put in by the NUST management and faculty in developing the University in line with international standards.

RANKED
74
Among
Top 100 World
Universities
aged under 50

College of EME wins indigenous category of NERC'16

Team 5-V DC from College of Electrical and Mechanical Engineering won the indigenous category of the 14th National Engineering Robotics Contest (NERC).

The competition was held on August 27, 2016, at College of Electrical and Mechanical Engineering (CEME). More than 150 teams from different schools and universities across Pakistan participated in the contest.

The theme of this year's contest was to design and develop autonomous robots that could



localize themselves in unknown environments. The different categories included Robowars, Game of Drones, Indigenous and Modular categories.

NERC is a hands-on engineering contest, in which

contestants design and build robots. The goal of NERC is to teach students about robotic design by giving them the hardware, software, and information they need to design, build, and debug their own robot.

NUST and WAPDA sign MoU



A Memorandum of Understanding was signed between National University of Sciences and Technology (NUST) and Water and Power Development Authority (WAPDA) on July 19, 2016. The purpose of the MoU is to have mutual cooperation to conduct joint training and research activities for addressing water security and quality challenges through improved governance and efficient management of water resources.

WAPDA Chairman Zafar Mahmood and Rector NUST Engr Muhammad Asghar signed the MoU on behalf of their organizations. The major areas to be covered under the MoU include planning and implementation of joint applied research projects and activities, raising public awareness about water

management issues, capacity building, sharing of information, exchange and training of scientific and technical personnel and internship of NUST students at WAPDA projects etc.

Addressing the ceremony, WAPDA Chairman said that WAPDA, besides engaging other stakeholders, had also been reaching out the academia in a bid to introduce efficient management of water resources and promote a culture of water conservation amongst the masses.

Speaking on the occasion, the Rector NUST said that the mutual cooperation would help promote improved governance and efficient management of water resources.

Two research grants awarded to ASAB faculty member

As Principal Investigator, Dr Aneela Javed of ASAB has won two projects simultaneously from Higher Education Commission of Pakistan (HEC) under the National Research Program for Universities (NRPU). These research projects worth six million PKR, will focus on analyzing the natural anti-HIV mechanisms for their therapeutic implications in vaccine development. The projects combined with training of students will be a boost for the research activities at Healthcare Biotechnology Department of AttaurRahman School of Applied Sciences (ASAB). In future, this research will strengthen the basis to establish Pakistan's position as a competent, innovative and trustable international research partner in HIV/AIDS field.



92 trained on batteries and fuel cell technology



Alternative energy developments are a result of the growing need to build economy of the future that will rely not only on fossil fuels, but also on renewable and clean energy sources. The new generation of engineers that will support this shift in the energy production must develop truly multidisciplinary skills and be able to respond efficiently to diverse demands. A three-day Technical Workshop was conducted by senior faculty member Prof A M Kannan from Arizona State University (ASU) at National University of Sciences and Technology (NUST). The workshop was designed to provide insights into batteries and fuel cells for stationary, automotive and portable applications. More than 90 energy engineers, teachers and scientists from USPCAS-E, NUST, UET- Peshawar were trained in the rigorous sessions. For the

learning of participants, live demonstration of batteries, solar technology and fuel cell technology were also established.

The workshop covered global, comprehensive evaluation of all renewable energy sources with focus on batteries, hydrogen, and fuel cells. A couple of sessions were earmarked for energy system analysis and design exercises for teams of participants to brainstorm solutions towards maximizing energy conversion and storage.

The key goals were far-reaching activities for promotion of renewable energy sources, development of concepts and all critical components for energy conversion and storage, strong combination of fundamental and applied research; and pursuit of real products and processes.

USPCAS-E National Outreach Program

The Outreach team at USPCAS-E conducted a campaign on national level to inform potential students in different engineering universities about the degree programs and opportunities at the Center. More than 1,200 final-year students of undergraduate programs from as many as 12 universities across Pakistan participated in the 1st cohort of seminars conducted by the team.

The seminars included details about Center, information on research, scholarship and exchange program and other bright opportunities that students and researchers could avail at USPCAS-E.

The campaign, comprising seminars and print & e-media outreach, assisted in receiving more than 800 applications against 120 seats for graduate and postgraduate degree programs at NUST. The 2nd cohort of the campaign will include more universities nationwide to disseminate information regarding USPCAS-E, its components and further opportunities that can be availed.



Ambassador of Spain visits NUST

Mr Carlos Morales, Ambassador of Spain to Pakistan visited School of Mechanical & Manufacturing Engineering on July 13, 2016. During the visit, he explored several labs in the light of functioning and management of the school.



Delegation from University of Liverpool, UK visits NUST

A two-member delegation from University of Liverpool, UK, visited NUST on August 15, 2016. The delegation was led by Senior Lecturer of Management School – Dr Hammad Akbar. Upon arrival, the delegates were given a comprehensive briefing about establishment, institutions, programs, research initiatives and future plans of NUST followed by a discussion session. The delegates also visited NUST Business School (NBS) and NUST Research Center for Modeling and Simulation (RCMS) where they were conducted to various state-of-the-art labs and facilities available for NUST faculty and students. The delegates showed keen interest to establish formal relationship between the two institutes, especially in the area of joint research projects.



52 participants of Beijing Forum visit NUST

As many as 52 participants of the International Conference on Education, sponsored by MS mission in Pakistan in collaboration with Pakistan-US Alumni Network and US Educational Foundation in Pakistan (USEFP) visited School of Mechanical & Manufacturing Engineering (SMME) labs on July 25, 2016. They explored the Prosthetic Lab, MRC, Arial Robotic, RP Lab, CNC and the Tribology Lab.



NUST, UWR sign MoU for establishment of NUST Creative Learning School

National University of Sciences and Technology (NUST) has signed a Memorandum of Understanding (MoU) with United We Reach (UWR), an international educational network, to establish NUST Creative Learning School (NCLS) at the Islamabad campus. The project is aimed at providing high quality education at the elementary level. The school will be gradually upgraded to higher secondary level subsequently.

As per the agreement, NUST and UWR will endeavor to develop NCLS on the most modern lines. The initiative will primarily focus on technology-based learning, involving comprehension and critical thinking, to ingrain in students the very essence of innovation and entrepreneurship at the grass-root level. It may be mentioned here that NUST Day Care and Montessori is already



functioning on the campus to facilitate the faculty and staff of the University.

Meanwhile, Director United We Reach (UWR), Ms Sabahat Rafiq, visited NUST on May 12-13, 2016, with a view to augmenting the already established entrepreneurial ecosystem at NUST. Being a venture capitalist herself, Director UWR appreciated the ongoing research and development,

product augmentation, and innovation culture at the university. She explored the possibility of connecting NUST incubatee businesses with angel investors and venture capitalists to help them achieve their optimum potential. She pledged to support commercially viable, research projects of the students, in order to bring them into the entrepreneurial set-up of the Incubation Center.

ILO holds on-campus recruitment drives

Industry Liaison Office (ILO) conducted 36 on-campus recruitment drives and 31 industrial career sessions between January – June; through which ILO was able to make over 1300 jobs and 600 internship slots/positions available to final and third year students of NUST.

Moreover, recent NUST graduates have already been offered jobs at the leading local and multinational companies. This includes 23 interns and 26 Graduate Trainees being hired at Engro. Engro announced a single opening for Mechatronics Engineer for the first time and that position has also been secured by a NUST graduate. In addition to this, 28 IT graduates have also been selected for assessment centre at Zong, 6 (interns) at Unilever, 5 at Techlogix, 5 at Qadri Group, 15 (interns) at PTC, 4 at Global Rescue and 2 at Inbox Technologies.

Similarly, ILO hopes to facilitate graduates in securing positions in Karachi Electric Supply Company (KESC), which has around 200 jobs in their pool. As

many as 350 electrical, electronics and mechanical engineers appeared in the test conducted by KESC. 70 of them successfully cleared the test and out of those, 35 have reached the assessment centre stage.

The above-mentioned figures are likely to increase in the near future as the companies are still running their recruitment processes. Most of the NUST graduates are being hired in reputed companies at good positions. ILO has been working effectively to get NUST graduates inducted in the top recruiting companies even before their graduation.



Nustians excel at Azadi Quiz

Azadi Quiz: Regional Level Championship was held at Shah Abdul Latif Bhittai Auditorium, H-8/1, Islamabad on August 9, 2016. As many as five universities, i.e., National University of Sciences and Technology (NUST), Quaid-e-Azam University (QAU), Pakistan Institute of Development Economics (PIDE), International Islamic University (IIU) and Preston University, participated in the competition. Each university was represented by two students. The competition was divided into



three rounds. In the first round, the teams were asked questions pertaining to the period between 1906 to 1947. Each team was presented with three questions in this round, followed by the "Buzzer Round". The teams had to answer 10 questions from 1947-1988. The last round was related to general knowledge about Pakistan and the era between 1988-2016. The round consisted of 15 questions.

After a tough competition, student representatives of NUST managed to clinch first position in Islamabad and became "Regional Champions". They were presented with certificates and a cash prize of PKR 30000/-

Following the regional championship, NUST was offered to participate on national level with the winners from four provincial capitals: Karachi, Peshawar, Lahore and Quetta. The competition followed the same pattern as of the regional championship. NUST managed to secure 3rd position and the students were awarded with certificates for their participation in national level competition.

PNEC Volleyball Tournament 2016

Sports at PNEC are an important part of the college routine. Students are engaged in various competitions. Recently, PNEC Volleyball Tournament 2016 was organized for the students from August 28 to September 1, 2016. A total of 19 teams from different semesters competed against each other. The teams that made to the semifinals are as follows: Team Pakistan (Semester VIII) vs Team Diamond Supreme (Semester III), Team One to One (Semester V) vs Team Flying Jutt (Semester IV). The final was played between Team Diamond Supreme (Semester III) and Team One to One (Semester V), and was won by the latter.



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2 CONFERENCES & WORKSHOPS

NUST holds “First International Conference and Expo on Biomass Gasification Technologies in Pakistan”



First International Conference & Expo on Biomass Gasification Technologies kicked off at National University of Sciences and Technology (NUST) on July 27, 2016. The two-day conference is being organized by US-Pakistan Centre for Advanced Studies in Energy (USPCAS-E) in collaboration with United Nations Industrial Development Organization (UNIDO) Pakistan, under a GEF-funded project “Promoting Sustainable Energy through Biomass in Pakistan”. Federal Minister for Science & Technology Rana Tanveer Hussain graced the occasion as the chief guest.

The conference speakers elucidated critical barriers, pivotal challenges and attainable solutions for the promotion of market-based execution of biomass gasification technologies in Pakistan. It brings together participants from all over Pakistan, including senior government officials, representatives from the private sector, industry associations, academia and the civil society. The conference aimed to address the industrial applications of Biomass Gasification Tech-

nologies (BGTs) as alternative, sustainable and effective fuel for our future to reinforce the Small and Medium Enterprise (SME) industrial sector in Pakistan. Speakers, panelists, and experts in the field of energy and industry from across the globe including Germany, USA, UK, Netherlands, South Africa and Finland participated in the conference.

Congratulating USPCAS-E and UNIDO for organizing the conference on such an important area, the federal minister said that the universities must invest in renewable energy technologies. Considering the availability of biomass residues in abundance, it also holds promise to rein in environmental degradation, he added. He stressed upon the need for increased partnership between the industry and the academia for fast-paced development on the basis of collaborative research. The chief guest also congratulated NUST on its silver jubilee and admired it for attaining international stature in a very short span of time. He said that the university was playing a key role for

the promotion of quality higher education in Pakistan. Later, he inaugurated the expo showcasing various projects from biomass to energy.

Speaking on the occasion, Mr Esam Alqararah, UNIDO Representative, said that UNIDO was pleased to work in collaboration with NUST and that the conference would pave the way for more self-reliant and productive energy and industrial sectors in Pakistan. Our project "Sustainable Energy Production and Use from Biomass in Pakistan" endeavors to help industries transition from expensive oil-based power generation to clean and renewable resource of biomass that is present in the country abundantly as a means to strengthen the SME industrial sector of Pakistan," he maintained.

Earlier in his address, Rector NUST Engr Muhammad Asghar emphasized on the importance of Biomass Gasification Technologies. He said that the UNIDO-NUST project on promoting BGT systems aimed at addressing the energy challenges by combining capacity building and demonstration of projects that had high replication potential with interventions that sought to establish a market environment conducive to investment in this important energy sector. He added that the conference

would provide a robust platform for shared learning experiences and exchange of ideas between local and international experts to implement efficient utilization of biomass in this otherwise non-commercial energy sector.



TeENGINEER - Engineering Summer Camp at PNEC

TeEngineer-Engineering Summer Camp was organized by Professional Development Center (PDC) of PNEC for high school students to let them explore engineering as an academic and professional career choice, and learn about various engineering disciplines. The camp aimed at fostering curiosity about science and technology through a variety of sessions designed to engage and inspire the youth. The sessions included career guidance by senior faculty, stimulating lab experiments, and thrilling engineering projects.



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ASAB student wins prize at 13th Biennial Conference of PSBMB

Ms Ufaq Tasneem, an MS student at the Department of Industrial Biotechnology of ASAB, won third prize for her scientific poster at the 13th Biennial Conference of the Pakistan Society for Biochemistry and Molecular Biology (PSBMB). The theme of the conference was "Recent Advances & Challenges in Molecular Biology, Biochemistry and Biotechnology" and was hosted by the Centre for Advanced Drug Research (CADR) at the Comsats Institute of Information Technology, Abbottabad (Aug 25-27, 2016). A large number of students from various universities across the country participated in the conference.



Ufaqis is currently working under the supervision of Dr Saadia Andleeb, on the prevalence of antibiotic resistance *mecA* and enterotoxin genes in highly pathogenic *Staphylococcus aureus* strains of Pakistan.

RCMS faculty works on research project at IPCB CNR, Italy

Assistant Professor Dr Fouzia Perveen Malik of RCMS visited Institute of Polymers, Composites and Biomaterials (IPCB) CNR, Via Campi Flegri, Pozzuoli (Naples), Italy for a period of two months (01/07/2016 – 02/09/2016). She worked on research project titled "Effect of Epoxidized Vegetable Oils on the Thermal, Mechanical and Morphological Properties of PLA" with Dr Mario Malinconico, Director Research IPCB-CNR Pozzuoli, Italy. The research project has brought IPCB CNR and RCMS, NUST very close in research collaboration.

PNEC organizes "Speak Out for Engineering" (SOfE) Competition

IMechE Pakistan Navy Engineering College (PNEC) organized the national round of SOfE competition, entitled Jibran Khalid Memorial SOfE Competition. Top 6 finalists included students from SMME-NUST, PNEC-NUST, UET and NED. Judges were renowned orators and industrialists. Jibran Khalid's parents also honored the event with their presence. Farhan Ellahi from SMME stood first, while Rafay Safdar from PNEC was runner-up. The winner will move onto the Asia round now.



RCMS faculty presents paper at ICMAE 2016, London

Assistant Professor Dr Zartasha Mustansar of RCMS presented her paper titled, "Effect of different types of methods on the derivation of elastic modulus of bone" at the "7th International Conference on Mechanical and Aerospace Engineering (ICMAE) 2016 in London, United Kingdom". The conference was organized and hosted by Embry Riddle Aeronautical University, UK and Orleans University, France during 18-22 July, 2016.

Short course conducted on “Remote Sensing and GIS Applications in Flood Management”

The Phase-II of the UNESCO Project “Strategic Strengthening of Flood Warning and Management Capacity of Pakistan” aims to continue the capacity development of relevant Pakistan agencies regarding flood management, especially forecasting, warning and hazard analysis and also to strengthen the human resource development in Pakistan through the project activities, which lead to establishing technical foundation in the country for the sustainable self-development and self-advancement of the flood forecasting and early warning system as well as the effective coordination and management during floods.

Under the first component of the UNESCO Phase-II Project, hydrological modeling of two rivers namely Jhelum and Chenab has been assigned to NICE by UNESCO using IFAS software. Under the third component of the UNESCO Phase-II Project, NICE/NUST has been assigned by UNESCO to: i) conduct two short term training courses in “Remote Sensing & GIS Applications in Flood Management”; and ii) capacity building of four (04) students from Afghanistan through MS in Water Resources Engineering & Manage-



ment (Specialization in Disaster Management).

In this connection, a short course on “Remote Sensing and GIS Applications in Flood Management” was organized by NICE from July 18-29, 2016. Resource persons for the short course were selected from Institute of Geographical Information Systems (IGIS) and NUST Institute of Civil Engineering (NICE), School of Civil & Environmental Engineering (SCEE). The objective of the capacity building and training program was to enhance and strengthen the capacities of organizations dealing with early warning and flood management in Pakistan in utilizing geo-information, and applying spatial tools and techniques to support flood management. More specifically, the course

aimed to introduce the topic of GIS and remote sensing with practical applications and familiarise them with GIS and RS data management skills and knowledge for flood management.

Forty participants from various organizations like Pakistan Meteorological Department (PMD), Flood Forecasting Division (FFD) of PMD, Federal Flood Commission (FFC), Water and Power Development Authority (WAPDA), Punjab Irrigation Department (PID), Gilgit-Baltistan Disaster Management Authority (GBDMA), , Pak Army, Pakistan Air Force, CUST, CIIT, WEC, MCE, etc. attended the course. After the successful completion of the course, participants were given certificates by Ms Vibeke Jensen, Director UNESCO, Islamabad.

Ceremony for appointment holders held at PNEC

With the start of Fall Semester 2016, the appointment holders' ceremony took place in the Parade Ground of PNEC on August 16, 2016. The appointment holders play a great role in advancing the core values of the college. The prime aim of this policy is to groom the students professionally so that they unfold their true potentials. Keeping in view their capabilities and records, students have been selected for various responsibilities in their respective departments.



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Workshop on emotional intelligence at C³A

In an effort to spread awareness about emotional intelligence, Centre for Counseling and Career Advisory (C3A) conducted a workshop on August 9 and 10, 2016, with the faculty, administration and NG Staff of NUST.

During the session different exercises were conducted in order to develop an insight into how imperative it is to stay connected with one's feelings. The session received an encouraging feedback.

During the workshop, it was emphasized that human interaction is quite a multifaceted phenomenon which requires a lot of efforts for its smooth running. Individual differences and unique personas of every single individual necessitates to be dealt maturely.

Moreover, while living with others there is a dire need to empathize with them, accept their personality differences along with healthy relationship management. Either at workplace or on personal grounds conflicts or arguments do arise but an emotionally healthy and intelligent being will tactfully deal with the situation in order to rescue his/her relationship.



Workshop on stress management arranged at C³A

A one-day workshop was organized specifically for the faculty of Schola Nova, Islamabad. The objectives of the workshop were to raise awareness around stressful events, the effects of stress and to improve productivity by reducing negative impact of stress. During the workshop, stressors were identified and handling and coping strategies were discussed. The purpose was to help increase productivity and enhance group dynamics. Conflict resolution and team building through learning assertive behavior was also a part of the program. The members learned helpful tools to optimize performance at personal and organizational level. The workshop was interactive and was designed to meet participants' needs.



3 COMMUNITY SERVICE

NUST installs solar-powered water pump at Thar

NUST in collaboration with Association of Water, Applied Education & Renewable Energy (AWARE) successfully completed the installation of solar powered water pump at Revi-ji-Dhani, UC Faqeer Abdullah District Umerkot, Thar. NUST had received around Rs 900,000 in donations for resolving the issue of water at Thar via hand pumps. However, after the completion of thorough feasibility study by AWARE, no other location was deemed fit for installation of hand pumps. After much deliberation, AWARE suggested to install a solar powered water pump in Umerkot. The donors were first asked for their consent for the project. After receiving the permission from the donors, AWARE was asked to begin the project.

Solar PV system operated pump pulls out underground water from a depth of 300 feet. Water is stored in fiberglass tank for further distribution through pipelines to each household. Awareness sessions were organized for women, children and elderly male members of community by highlighting the importance of health and hygiene in relation to safe water. An operator has been selected for maintenance and operation of solar pump system with consultation of community. Operator has been trained on operation of system and billing procedure etc. The objectives achieved included: Provision of drinking water for 159 persons including children/students; development of watering facility for 134 animal heads; promotion of participatory development approach by engaging community to increase the access



of the people in Revi-ji-Dhani U.C Faqeer Abdullah to safe drinking water through installation of one solar water pump; improvement of health and hygiene of the locals by providing safe drinking wa-

ter and raising awareness among them; reduction of absenteeism and drop-out ratio among school going children through provision of safe drinking water.

NCSC volunteer visits NUST-initiated water pump projects at Thar

A volunteer from NUST Community Services Club (NCSC), Mr Danesh Kumar, visited water pump projects at Thar initiated by NUST to resolve the water issue. Mr Danesh Kumar visited the sites of ongoing solar powered water pump project and completed projects of 16 hand pumps installed by NUST at Umerkot and Tharparkar. The installation of water pumps is being completed in collaboration with Association of Water, Applied Education & Renewable Energy (AWARE). He first visited the previously installed hand pumps in 16 locations in Umerkot and Tharparkar. Previously installed hand pumps were worth Rs. 60,000 each and were installed in various villages of Umerkot and Tharparkar. The total beneficiaries of the wells were 5028. First location of the visit was Bheel colony, UC one Umerkot. Hand pump were found to be fully functional and community members have been fetching water since its installation. The quality of water was good and timely maintenance of the pump was ensured by the community members. Mr Danesh proceeded to village, Haji Shoaib Sand. The location of hand pump is of immense significance in this area because it has been installed in the center, surrounded by a mosque,



school and residential area. The water quality and condition of pump was found to be satisfactory. He also visited village Fazeer Abdullah, the head quarter of UC where two hand pumps are installed. The locals used to consume river water because of which a majority of them suffered from cholera and pneumonia. After the successful installation of hand pump, these diseases are nearly eliminated hence signifying the importance of this initiative. Mr Danesh along with the team from AWARE met with community members and concluded that all 16 wells are fully functional and the lives of the inhabitants of Thar have been made easier.

ECSS members spend day with senior citizens

Dar ul Sukoon was visited by the members of Education and Community Services Society (ECSS) PNEC on on August 28, 2016. ECSS is one of the most active and prestigious societies of PNEC. The purpose of the visit was to bring smiles to the visages of the senior citizens residing at Dar ul Sukoon. ECSS feels honored for being the cause of happiness for senior citizens, and hopes to successfully organize such activities in future as well.





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