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MAGAZINE
2021

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NUSTIAN IS A UNIVERSITY NEWS MAGAZINE PRODUCED
BY MARKETING & COMMUNICATIONS,
NUST - ISLAMABAD, PAKISTAN.

Editor:	Faheem Khaliqdad
Assistant Editor:	Hamna Afzal
Head Design & Layout:	Karim Muhammad
Assistant Design:	Kiran Rehman
Photographer:	Ghulam Rasul M. Ayaz

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HIGHLIGHTS|01



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NUST making headway in Global Ranking

NUST is now brushing shoulders with the most prestigious universities in the world. Its growth trajectory over the course of last 5 years depicts a progressive vision and a journey of excellence in higher education, research, innovation, and various other initiatives.

Presently, it stands at #358 amongst world universities as per the 2022 rankings by Quacquarelli Symonds (QS). In QS Asian University Rankings 2021, it ascended two positions from #76 to #74 from its last year's ranking. The

new ranking has placed NUST amongst the Top 11% Asian universities for the year 2022. The university has retained its #1 position for the 5th consecutive year as the only Pakistani university in the Top-100 Asian universities. It placed #41 in the Top 50 under 50 QS University Ranking 2021. Domestically, it emerged as the #1 university among all in the country.

NUST has the distinctive honor of being #1 in Pakistan in all three QS Ranking categories mentioned above.



National University of Sciences & Technology (NUST) ranks 1st in Pakistan and among 200-300 universities Globally in:



1st in Pakistan
200-300 globally



1st in Pakistan
200-300 globally



1st in Pakistan
200-300 globally



1st in Pakistan
200-300 globally



1st in Pakistan
200-300 globally



AI Tech-Verse 2021 concludes at NUST

Dr Arif Alvi terms Artificial Intelligence a linchpin of economic development

National Centre of Artificial Intelligence (NCAI), NUST organised its flagship initiative AI Tech-Verse 2021 at NUST main campus from August 30 to 31, 2021. Dr Arif Alvi, President Islamic Republic of Pakistan graced the occasion as chief guest.

The event provided a platform for showcasing of ideas and prototypes. It was divided into three main segments, the "AI-Expo" entailing an exhibition of industrial AI-related projects and presentations by individuals from research labs and NCAI partners. While, the "AI-Ideas Challenge" was designed for young entrepreneurial minds to pitch their ideas, and "Bol-AI," aimed at enhancing public awareness about prospects in the field.

The President extolled NUST and NCAI for arranging Tech-Verse, which would serve as an impetus for the indigenous development of AI-based technologies. Federal Minister of Education, Mr Shafqat Mehmood posited how the use of this technology can help identify the gaps in students' understanding and provide effective feedback Rector NUST Engr Javed Mahmood Bukari highlighted that NCAI has developed as many as 280 indigenous solutions,



including Fast Grant Proposal for Covid-19, Urdu Speech Recognition System, Smart Cleaning & Waste Management System in its short span inception.



NUST's Research Showcase in Karachi Receives Tremendous Response from Industry

A research showcase of market-ready innovation, displaying the research capabilities and technologies of the National University of Sciences & Technology (NUST), was held at DHA Country & Golf Club, Karachi. The event was held with the aim to build deeper and meaningful industry partnerships with multiple stakeholders, including top-of-the-line corporate, business, and industrial leadership of Karachi. Prominent among those present at the occasion were Rector NUST Engr Javed Mahmood Bukhari, DG Rangers Sindh, Maj Gen Iftikhar Hassan Chaudhary, and over 300 partners representing diverse industrial sectors. The event was structured into two thematic areas, including a showcase of NUST research excellence that included multiple stalls and setups of multidisciplinary higher education, innovation and research taking place at NUST, and a NUST presentation made by Director Advancement at NUST, Ms Maria Qadri, highlighting the vision, mission and future direction towards forging meaningful partnerships with the industry. Addressing the audience, Dr Rizwan Riaz, Pro-Rector Research, Innovation & Commercialisation NUST, highlighted the university's vision to be a 4th generation centre of higher learning in terms of building the nation through transformative higher education. He maintained that the basic nodes of this ecosystem are education, research and utilisation of knowledge, emphasising it is this last component that inspired the idea of research showcase as a means to bridge the gap between industry and academia. The guest of honour, DG Rangers Sindh, Maj Gen Iftikhar Hassan Chaudhary commended the efforts of NUST towards developing close liaison with the industry and, as

a deduction, paving the way for sustainable socio economic growth of the country. He assured NUST of his complete support and continued interaction to achieve the long-term objectives of this successful initiative. The project displays catered to as diverse fields as Health, Defence, AI, IT, Real Estate, Auto Tech and its entrepreneurial ventures coming out of its incubation spaces and country's first Science & Technology Park. Some of the notable projects and their prototypes showcased included Formula Electric Cars, Bare Metal and Drug-Eluting Stents, Powered Air Purifying Respirator, Aerial Spraying Drone, Tele-operated Decontamination Robot, Multi-Agent Robotic Therapy for Children with Autism, MindQuil, Handheld device for Building Resilience and Coping with Anxiety and Vertical Axis Wind Turbine for Energy Harvesting, to name a few. Industry and corporate leaders appreciated NUST for organising the showcase in Karachi and acknowledged the quality of research on display.



NUST-developed assistive technologies displayed at Pakistan's 1st Technology for Inclusion Summit

NUST in collaboration with Pak-Everbright Development Organization (PEDO) arranged a Technology for Inclusion Summit 2021 to bring together users, manufacturers, researchers, and stakeholders in Islamabad on July 27, 2021. Pro-Rector NUST RIC Dr Rizwan Riaz said that the university is proactively engaged in the manufacturing of cost-effective devices. CEO Pak-Everbright technologies, Mr Shahab-ud-Din shared his life journey with disability and extolled NUST for making these devices accessible for the general masses. The technologies displayed included EKKO- Wave Therapeutic Device, RISE Intelligent Wheelchair, etc.



4th IEEE International Conference on Robotics and Automation

A two-day 4th IEEE International Conference on Robotics and Automation in Industry (ICRAI) concluded at NUST College of Electrical & Mechanical Engineering (CEME) on October 28, 2021. Dr Shaista Sohail, Executive Director HEC, chief guest for this event emphasised the importance of such events in paving way for innovation and forging meaningful academic and research collaboration. The conference was attended by three international keynote speakers from Canada, the USA, and the UK. It also included an Industrial Exhibition, Workshop on UR5 Robot and TRIZ.



Federal Minister MoST visits NUST

Minister for Science and Technology, Mr Shibli Faraz paid his maiden visit to National University of Sciences & Technology (NUST) on April 26, 2021. The honourable minister attended a comprehensive briefing on operations, multifaceted growth, and future plans of NUST. Stressing the need for inclusive growth, the minister eulogised NUST for taking its outreach initiatives, in order to bring talented youth from far-flung and underprivileged areas of the country to the mainstream of education. He mentioned that the government is taking measures to create jobs and propitious environment to nurture a culture of innovation and entrepreneurship.

Meanwhile Lt General Javed Mahmood Bukhari, Rector NUST, received Mr Nadeem Irshad Kayani, Secretary Ministry of Sciences and Technologies (MoST) on May 29, 2021. The Secy appraised the University for maintaining sublime standards in the realms of higher education and research. He spoke highly of NUST's effort to bring the under-privileged to the mainstream of education. He also commended the university for taking mega initiatives such as, NSTP, NHT, etc.



Lt Gen Nigar Johar visits NUST

Lt Gen Nigar Johar HI(M), Surgeon General of the Pakistan Army, visited NUST on September 15, 2021. She was given a detailed briefing followed by a guided tour of the campus especially Atta-ur-Rehman School of Applied Biosciences (ASAB), N-ovative Health Technologies Pvt Ltd (NHTPL), the National Science & Technology Park (NSTP), and School of Mechanical & Manufacturing Engineering. She commended NUST for laying special emphasis on applied research and innovation.



Senator Dr Sania Nishtar Visits NUST

Senator Dr Sania Nishtar, Special Assistant to the Prime Minister of Pakistan on Poverty Alleviation & Social Protection paid a visit to NUST and delivered a talk on "Poverty Alleviation and Empowerment through Ehsaas Program" on November 26, 2021. She apprised the audience about the development of the Ehsaas program and how it is bringing the difference in the lives of deserving individuals. She also highlighted the importance of the Ehsaas program in minimizing the economic losses experienced due to COVID-19. Following the question-answer session, Dr Sania had an interactive session with the Ehsaas Scholarship awardees of NUST.



China-Pakistan Higher Education Research Institute launched



The Higher Education Commission of Pakistan and the China Association of Higher Education mutually launched the "China-Pakistan Higher Education Research Institute" during the "4th Exchange Mechanism Conference of CPEC Consortium of Universities", in Islamabad on October 15, 2021. The aim of this institute is to strengthen the existing academic and research collaboration between HEC, Pakistan, and the China Association of Higher Education. Eminent personalities attending were Minister for Federal Education & Professional Training of Pakistan, Mr Shafqat Mahmood; Ambassador of Pakistan to China, Chinese Ambassador to Pakistan, Executive Director Dr Shaista Sohail, Rector NUST Engr Javed Mahmood Bukhari; Lt of China Association of Higher Education.

Gen (Retd) Muhammad Asghar, Consultant CPEC, and President Mr Shafqat Mahmood said that the institute is building a strong academic linkage directed by the CPEC consortium of universities, which was established in 2017 by the collaboration of China Association of Higher education and the Higher Education Commission of Pakistan for the promotion of academic and research purposes along with the teacher/student exchanges. He further said, "We fully support the Belt & Road Initiative of which the China Pakistan Economic Corridor is a flagship project." Lt Gen (Retd) Muhammad Asghar reiterated the importance of this institute in the future synergetic efforts and hoped that China would contribute to our research fund, supporting scholars on both sides of the border.



Competition to Inspire Social Entrepreneurship Concludes at NUST

Finding Innovative & Creative Solutions (FICS) is a platform for students to showcase their creative ideas and skills in front of a panel of industrialists. Team Olive Pitting, from DE-39, Department of Mechatronics Engineering, won the runner-up position with a cash prize of Rs. 50,000 in FICS '21. The competition was divided into 3 stages. Of the 61 teams out of 257, who made their way into the final stage, there were two overall prizes (winners and runner up) and 4 special category awards. The team from the Mechatronics department won the title of Runner up. This team comprised of 3 members from final year MTS. Manahil Shahid, Eisha Gul and, Ahmed Faizan while the supervisors of this project were Dr Umar Shahbaz Khan, Dr Hamid Jabbar, and Dr Amir Hamza from Mechatronics Engineering Department NUST, CEME.



CureMD Young Inventor Program (YIP) 2021

Students of SEECS registered a dazzling triumph at CureMD Young Inventor Program (YIP 2021) held from January to April 2021. The committee of judges unanimously endorsed three Nustians out of seven finalists for the competition, wherein as many as 900 students from across Pakistan pitched their innovative ideas. The excelling SEECS students claiming the top three slots include Alina Irfan, Shahbaz Naeem, and Ayman Tanveer. Six other SEECS students also qualified for CureMD Grit Plus Award and CureMD Grit Award. Momina Gul, Talha Masood, and Hamza Iqbal were awarded Grit Plus Award, whereas Amna Ijaz, Usama Saghir, and M Abdur Rehman were conferred the Grit Award.



Team NUST secures first-ever podium for Pakistan in any Formula Student Competition

Following their recent successful run in Formula Student UK 2021, Formula Electric Racing – a team of students from Pakistan Navy Engineering College of NUST – rose to prominence by winning overall second position at the Formula Student Russia '21 (FSR), thereby securing first-ever podium for Pakistan in any Formula Student Competition. The team also stood second in all individual events of the competition, including Engineering Design event, Business Plan Presentation and Cost & Manufacturing Event. FSR is an international Formula Student Engineering Competition, bringing together teams from around the globe to showcase their Formula Student Vehicle Prototypes.

The Business Plan event comprised a Business Plan Presentation Video (BPPV), followed by a Business Plan

Presentation (BPP). BPPV is a 30s pitch video while BPP is a ten-minute presentation based on a Deep Dive Topic provided by the judges. The Deep dive topic for this year was to make a business model for large scale production of EV prototype that would cater the plan of zero carbon footprint facility in the model in the span of ten years.

The Engineering Design Event consisted of multiple presentations and sessions with judges for the assessment of vehicle's design and dynamics. A full vehicle appearance video was also submitted to the judges. Meanwhile, the Cost & Manufacturing event aimed at determining teams' understanding of the cost of their vehicles. Teams are adjudicated based on their buying decisions and long-term investments, in tandem with manufacturing, quality and environmental sustainability of their decisions.



NUST conferred “CSR Award for Social Impact & Sustainability”

NUST has been conferred the “CSR Award for Social Impact and Sustainability” by the National Forum for Environment & Health (NFEH). The MoU was signed at NUST, Islamabad on February 26, 2021. The 13th International CSR Summit 2021 was held at Serena Hotel, Islamabad. Dr Sania Nishtar, Special Assistant to Prime Minister on Poverty Alleviation & Social Protection, honoured the occasion as chief guest and presented the CSR awards to representatives of the industry and corporate community.



Two-day thematic job fair concludes at NUST

NUST arranged a two-day thematic job fair at its Islamabad campus on March 17-18, 2021. It was inaugurated by Mr Sardar Yasir Ilyas Khan, President Islamabad Chamber of Commerce and Industry (ICCI) along with AVM Dr Rizwan Riaz, Pro-Rector Research, Innovation and Commercialization (RIC) NUST. Over 110 top organisations from various sectors participated for recruiting students from disciplines of IT, Engineering, Biosciences, and Architecture, Business Management, Social Sciences, and Natural Sciences. An MoU was also signed between Rector NUST and President ICCI for collaboration on research, commercialisation, and industry visits.



NUST joins hand with IBM Global University Program

With the support of NUSTian USA and the efforts of alumni in IBM, NUST entered into a partnership with IBM on June 21, 2021. At the august occasion, Rector NUST, Engr Javed Mehmood Bukhari expressed his appreciation to Dr Naguib Attia Vice-President, of Global University Programs, for establishing this synergetic correspondence. The MoU would help strengthen the relationship between NUST and IBM in areas of skill and curriculum development, research, etc.



NUST holds “Security Dialogue - a Special Session on Afghanistan”

NUST Centre for International Peace & Stability (CIPS), in collaboration with the National Security Division (Pakistan), organised “Security Dialogue - Special Session on Afghanistan” on October 1, 2021. Dr Moeed Yusuf, National Security Adviser to the PM Imran Khan addressed the current Afghan situation and Pakistan's policies regarding this situation.



International Webinar on the Role of S&T Universities in Promoting National High-Tech Growth

Science and technology universities have the potential and means to shape the future of any country. It is important to equip the universities with the latest technologies to survive in the fast-paced world. Economic and social growth is also linked to the growth of the technology sector. To analyse the role of universities, an international webinar was held on "The Role of S&T Universities in Promoting National High-Tech Growth" on July 6, 2021. Mr Shibli Faraz, Federal Minister for Science and Technology, graced the event as chief guest.



NUST *High Achievers* AWARDS - 2021 *Virtual*

In order to appreciate and recognise Nustians who proved their mettle in national and international competitions, NUST held a Virtual High-Achiever Award ceremony on September 13, 2021. Rector NUST, Engr Javed Mahmood Bukhari praised the students for their meritorious accomplishments and wished luck to the ones who couldn't earn a position.



Dr Hasan Earns Best Teacher Award



Dr Hasan Arshad Nasir, SEECS was declared the University Best Teacher for the Year 2020-21. The award carries a certificate alongwith a cash prize of PKR 150,000/-.

US Embassy, NUST sign MoU to establish Lincoln Corner at the varsity

The U.S. Embassy in Islamabad and NUST signed the MoU on July 16, 2021, to establish a Lincoln Corner at NUST. The MoU was signed between Mr Raymond Castillo, the U.S. Embassy's Minister Counselor for Public Affairs, and Dr Osman Hasan, Pro-Rector (Academics) at NUST. The state-of-the-art Lincoln Corner at NUST is located in the campus's Central Library.



RESEARCH & INNOVATION | 02



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9 NUST RESEARCHERS IN THE WORLD'S TOP 2%



As many as nine researchers from NUST have risen to prominence by standing among the world's top 2% research luminaries from among 100,000 top-of-the-line researchers in 2021.

The nine researchers are from six different institutions of NUST and seven different disciplines, including Telecommunications, Signal Processing, Materials, Chemical, Bio-medical, Computer Science and Mathematical Methods in Fluid Mechanics. The researchers are Dr Noreen Sher Akbar, Dr Meraj Mustafa Hashmi, Dr Salman Raza Naqvi, Dr Muhammad Usman Akram, Dr Adeeb Shehzad, Dr Muhammad Ishaq, Dr Iftikhar Hussain Gul, Dr Abdul Ghafoor, and Dr Farooq Ahmed Tahir.

The data for ranking is compiled by Stanford University's Prof John PA Loannidis and his team, and published by Elsevier. The researchers are ranked based on a composite index factoring in various bibliometrics, including cita-

tions, Hirsch-index, citations to papers in different authorship positions, etc.

The number of researchers from NUST featuring among the top 2% of the world's top-ranked researchers has steadily increased over the past three years, with eight and three faculty members making to the list published in 2020 and 2019, respectively. This speaks volumes of the conducive environment NUST affords in order for knowledge seekers and creators to make a difference in these epoch-making times.

Since its inception in general and the last few years in particular, NUST has consistently made headway in its R&D pursuits, bolstering its way to the top in Pakistan, and building the nation through transformative higher education. NUST is currently ranked #358 in the world, #74 in Asia and #1 in Pakistan, as per QS University Rankings 2022.

R&D Activities

1. 5th University Committee on Research & Innovation Policy (UCRIP) hosted by Research Dte, held on February 22, 2021, under the chairmanship of Pro-Rector (RIC). The policies on Adjunct Faculty Policy and Establishment of Ethical Review Committee, later approved by Competent Authority in 60th ACM, March 17, 2021, was presented during the UCRIP session.
2. 6th UCRIP, hosted by Research Dte, on August 12, 2021, and 7th on August 26, 2021, under the chairmanship of Pro-Rector (RIC). Updated policy for NUST funded projects, Paper Publication Charges Policy, and Financial Award Policy, later approved by the competent authority on 61st ACM, August 30, 2021, was presented during the session.
3. Research Dte and Project Director NCAI, Prof Dr Yasar Ayaz prepared and presented a national level policy on think future "Implementation Plan for Seven Emerging Technologies", to secretary MoST on March 30, 2021,

R&D Projects Approved

NUST secured 98 R&D projects worth PKR 317.8 Million from national funding agencies such as HEC, IGNITE, PSF, NESCOM, etc. and international funding agencies such as CureMD Fellowship (USA), North China Electric Power University (NCEPU) Beijing (China), British Council (UK), Belt and Road Aerospace Innovation Alliance (China), etc.

R&D Projects Completed

NUST completed 98 R&D projects worth PKR 228.5 Million funded by national funding agencies such as HEC, IGNITE, NESCOM, etc. and international funding agency USAID (USA).

Startup-LiveIoT

SEECs students Usman Siddiqui, Abdul-Aziz Chaudhary and Syed Hassaan Muzammil pitched a solution to provide smart livestock monitoring and management to a panel of judges and were selected for the coveted Hatch8 program for NSTP startup incubation. It was named LiveIoT. Their mentor was Dr Rafia Mumtaz.



Award of Research grant, 2021 & Most Cited Paper

Dr Rafia Mumtaz's research proposal titled, Agri-DMaP: Internet of Things (IoT) and AI-enabled system for Crop Disease Monitoring and Prediction was accepted for funding (PKR 9.447 million) under NCAI Research fund on February 10, 2021. Dr Mumtaz's 2nd design patent titled (AgriEye Mobile Unit) has also been accepted by IPO Pakistan on 11 January 2021. Meanwhile Dr Mumtaz's review paper in MDPI Sensors Journal was also declared as one of the most cited paper.

The paper was published on 2019 and until now it has received 120+ citations.

www.mdpi.com/1424-8220/19/17/3796

9 tech startups graduate from NSTP-NUST

Graduation ceremony for the first cohort, comprising 9 startups, of the NSTP Hatch 8 Program took place at the main campus of NUST on February 2, 2021. The tech startups graduating from the park, inter alia, span a wide array of themes ranging from Ed-Tech, Fin-Tech, Agri-Tech, and Smart-Tech. Out of the 9 startups, 3 were given awards for high achievement on the basis of revenue generation, customer base, and socio-economic impact. The winner was awarded an amount of PKR 100,000, while the runner-up received an amount of PKR 50,000. Meanwhile, as part of the second cohort founders of 16 startups successfully graduated from NSTP on November 17, 2021. The graduating startups, half of which are women-led, belong to a diverse thematic mix, spanning Auto Tech, Energy Tech, FinTech, Agri Tech, Ed Tech and Smart Tech. NSTP has created 840+ jobs, 32+ internships and generated 85 IPs, 40+ trainings, workshops, and webinars despite the pandemic.

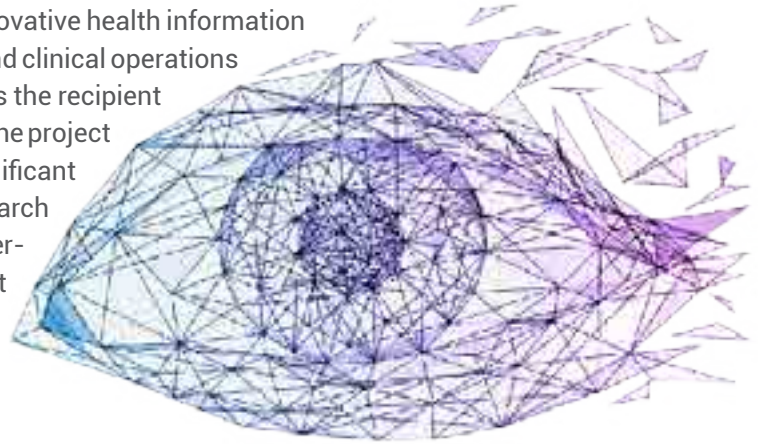


NSTP SSBC CHALLENGE

Student Startup Business Centre (SSBC) program is a PKR 6 M project established to support tech-based start-ups at NUST jointly funded by HEC, PEP Foundation and NUST. This year, two student-led startups Fincta and PowerWalk have won the Student Startup Business challenge and will receive seed funding of PKR 450,000 each along with incubation space at NSTP.

CureMD Fellowship Award 2021-22

CureMD is a US-based company, a leading provider of innovative health information systems and services that transform the administrative and clinical operations of healthcare organisations of all sizes. Dr Imran Akhtar is the recipient of the CureMD Fellowship Award 2021-22 who worked on the project titled "Identification of Nonlinear Indices to Predict Significant Endpoints in Oncology using EMR Data". The research focuses on determining the nonlinear indices and higher-order statistics to obtain insight into the patient flow sheet available in the EMR data that may not be intuitive which will benefit in the development of predictive models for relapse and endpoints.



Women of Wonders Award

Dr Rafia Mumtaz, the first female faculty member in NUST SEECS, immensely contributing to the field of Precision Agriculture, was conferred the Women of Wonders Award 2021 on March 04, 2021, at WOW Awards Ceremony by WOWPK and InspireMill. She secured a total of PKR 13.057 million national grants and 19,000 pounds international grants in the field of Smart Agriculture. She also has a design patent to her credit in this domain.



Atika Ishaq - runner-up in National Electronics Olympiad

Ms Atika Ishaq participated in National Electronics Olympiad 2021 organised by IEEE GIKI and was awarded the runner-up prize. In this competition, she successfully made an operational Obstacle Avoider Robot Car under the module of Robomaze.



Eesha Arif Participates in GSoC

Ms Eesha Arif from SEECS availed a golden opportunity to participate in Google Summer of Code with Oppia and contributed to several projects benefitting millions of developers worldwide. She collaborated with professional software engineers from her organisation to make the code-base more robust by introducing strict typing and improving test case coverage.

Establishment of Robot Maker and Robot Design & Development Labs

The National Centre of Robotics and Automation (NCRA), founded in 2018 is a consortium of 11 labs established at 13 universities across Pakistan with its central headquarters at NUST College of E&ME. In August 2021, Robot Maker Lab and Robot Design & Development labs under NCRA. The labs have become part of NCRA SEECs.



Salimuzzan Siddiqui Prize in Applied Science-Technology

Dr Muhammad Usman Akram, a senior faculty and researcher at NUST CEME, has been awarded the Salimuzzan Siddiqui Prize in Applied Science-Technology in Engineering Sciences from the council of the Pakistan Academy of Sciences (PAS). The academy not only promotes science & technology but also acknowledges Pakistani scientists who have made significant contributions to scientific research. This year, the PAS bestowed the Salimuzzan Siddiqui Prize in Applied Science-Technology, the distinguished award in Engineering Sciences for Scientists under 40 at a meeting of the PAS General Body on November 27, 2021.



SEECs TEAM STANDS OUT AT INT 'L COMPETITIONS

A UG student team from Smart AgriTech Lab-NUST SEECs including Anand Kumar, Muhammad Zeeshan, Shehriyaar Ali, and Syed Ali Hasany- bagged first position in the Farming Challenge and third position overall in the Battle of Minds 2021 Competition organised by British American Tobacco.



WHAT ARE YOU
MADE OF?



SEECs in Technology Infusion grand challenge at La Trobe University Australia

Zarlish Ashfaq, Abdur Rafay, and Hadia Saleem took part in the Technology Infusion grand challenge held by La Trobe University Australia (2020-2021), under the guidance of Dr Rafia Mumtaz. They entered cutting-edge research on the Internet of Medical Things based on smart health monitoring systems in the challenge. They were awarded a development fund of 200 AUD, after evaluation by judges, covering the project cost.

NUST team implements Intelligent Energy Monitoring & Management System at Fazal Steel

The inaugural ceremony for the commissioning of “EnergyEyer”—an intelligent Energy Monitoring & Management System (EMMS), was held at MATCAST plant of Fazal Steel (Pvt) Ltd (FSL) on September 27, 2021. It’s a collaborative project of NUST and Fazal Steel under the support of UNIDO. Dr Rizwan Riaz, Pro-Rector RIC was the chief guest. Dr Iftikhar Ahmad, the principal investigator of the project from NUST SCME, remarked that EnergyEyer was specially developed by the NUST team for process industries by incorporating the concepts of Artificial Intelligence (AI), Wireless Communication, and Cloud Computing in the conventional Energy Management System (EMS), to man-

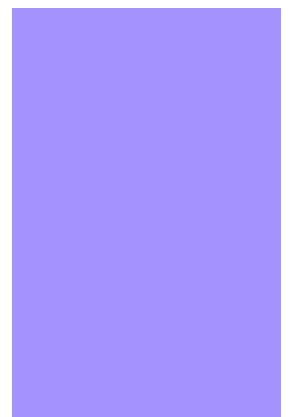
age the energy losses in the industry.

Mr Masroor Ahmed Khan, National Project Manager Sustainable Energy REEE UNIDO, on behalf of Ms Nadia Aftab, UNIDO Country Representative said, “UNIDO in Pakistan has an extensive and successful portfolio in industrial development cooperation. While UNIDO is providing technical support to Fazal Steel in its goal to achieve Energy Management System Certification ISO 50001, under one of its flagship projects on Energy Efficiency, it is heartening to see growing and effective collaboration between academia and the industry.”



President inaugurates National Gender Data Portal

National Gender Data Portal (NGDP) developed by PI/Project Lead Prof Dr Sher Jamal Khan and Co-PI/IT Lead Dr Ali Tahir from SCEE funded by UN-Women was launched by the President of Pakistan, Dr Arif Alvi on December 9, 2021, at Aiwan-e-Sadr. NGDP is a centralised portal comprised of “Gender Statistics” and “Knowledge Hub” which encompass 10 and 21 themes respectively. The portal compiles national and provincial data apt to Gender Equality and Empowerment into a database and addressing SDG#5 (Gender Equality). The purpose is the identification of institutional gaps that perpetuate gender equality and prevent women from participating actively in society.



National Drone Policy and CDRA

Ministry of Science & Technology has developed a National Drone Policy, in which experts from NCRA played a vital role. The policy was later presented to Prime Minister Pakistan on December 21, 2021. The authority namely "Civil Drone Regulatory Authority (CDRA)" will oversee the safe usage of drones in the country.



NUST RESEARCH PORTAL

NUST Research Portal (NRP) is an indigenously developed research management system to assist faculty in maintaining their research profiles. It facilitates faculty and schools to maintain records, track R&I performances and collect information on any ongoing research activity in the university. Faculty Annual Appraisals Reviews are processed through NRP

and are incorporated in QALAM.

NRP (v.1) was launched in 2018 by Ausomatic Inc. and NRP (v.2) was launched by ICT in July 2021. Data migration from old NRP (v.1) to new NRP (v.2), several new features have been added to the new system, including Data Entry Automation and Complaint Management System.



Pakistan Research Forum 2021

Pakistan Research Forum was organized by Clarivate Analytics in collaboration with NUST on November 10, 2021 where various stakeholders from academia and industry delivered insightful presentations such as “Advancing research and accelerating real world outcomes” by Mr Mukhtar Ahmed, President Science Group, Clarivate Analytics. Mr Faisal Mehmood – Territory Manager, (C.A) talked about “Accelerate research breakthroughs & advance knowledge transfer” and Mr Iulian Herciu – Consultant Research & Education, (C.A) discussed “Overview of Pakistan’s scientific research”. Prof Dr Atta-ur-Rehman, Chairman PM Task Force on S&T talked about “From scientific research to innovation - Pakistan current research trends and dynamics”. Dr Hamood Ur Rehman – Director Research (NUST) discussed “NUST Research Landscape and Socioeconomic Benefits”. A panel discussion on “Understanding Pakistan’s Research Performance: Challenges and Opportunities” was moderated by Dr Aymen Akil, Head of Professional Services Research and Education.



INSTRUCTIONAL e-BOOK FOR LEARNERS WITH VISUAL DISABILITIES

Based on a research on the effects of “Health and Hygiene” instructions via e-books on learners of age 3-5 years, an e-book targeting learners with visual difficulties has been developed using Universal Design of Learning (UDL). The scripting, story layout, design, and development were implemented using the seven stages of action and Nielson’s design heuristics. ‘My Morning Routine: An Interactive UDL compliant e-Book on Health and Hygiene for Learners with Visual Difficulties’ was submitted for the ICITL 2021 conference, after testing the e-book on a group of 10 subjects, and was conducted virtually from November 29 to December 1, 2021. The paper was presented under the ‘Multimedia Technology Enhanced Learning’ panel by Azka Rizwan. The contributing authors on the paper were Azka Rizwan, Mohsina Abid, Noor-us-Subah Quidwai and Midhat Noor Kiyani.



My Morning Routine: An Interactive UDL Compliant E-Book on Health and Hygiene for Learners with Visual Difficulties



CONFERENCES & WORKSHOPS | 03



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SCME holds 5th Conference on Emerging Materials & Processes

NUST School of Chemical & Materials Engineering (SCME) organised the 5th Conference on Emerging Materials & Processes (CEMP-21) on November 29-30, 2021. This year, the theme of CEMP-21 was 'Innovation in Engineering Processes for Sustainability'. Mr Imtiaz Ali Rastgar, the Chairman of the Rastgar Group graced the inaugural ceremony as chief guest. He elaborated on the dire need for applied research and commended the steps taken by NUST to fulfil this national requirement. Dr Rizwan Riaz, Pro-Rector RIC, NUST, applauded the efforts made by the researchers of SCME. Industrial speakers Dr Ayesha Mujeeb and Ms Sukaina Kazmi presented and highlighted the industry-based research along with several national and international speakers.



Session on Development of CPEC

To analyse the development of the second phase of CPEC (2021-30), NUST Institute of Policy Studies (NIPS) organised a high-level webinar on "Inclusive and Cooperative Development of China-Pakistan Economic Corridor; Challenges and Way Forward" on April 22, 2021. Ms Pang Chunxue, Deputy Chief of Mission, Embassy of the People's Republic of China, Islamabad; Lt Gen (Retd) Asim Saleem Bajwa HI(M), the then Chairman CPEC Authority, Government of Pakistan, and Vice Admiral (Retd) Khan Hasham bin Saddique, Former Vice Chief of Naval Staff spoke on the subject.



Lecture on Economy of Pakistan: Challenges & Way Forward

To look into the challenges facing Pakistan's economy, NIPS organised a lecture on "Economy of Pakistan: Challenges & Way Forward" November 4, 2021. Dr Ashfaq Hasan Khan, a senior economist and Principal S3H, NUST was the speaker who talked about the economic struggles of Pakistan and the right way forward.



NIPS Lecture Series: Past, Present & Future Perspective on Gilgit-Baltistan

Gilgit-Baltistan, due to its geo-strategic location, holds an important place in terms of security and economic growth. To deliberate on the emerging issues of Gilgit-Baltistan, NIPS held its Lecture Series on July 15, 2021. Major General Ehsan Mehmood Khan, HI (M), Director General, NDU, Islamabad was the keynote speaker. It was emphasised in the lectures that for national progress, existing inequalities must be reduced through development projects that will eventually increase the participation of the people of Gilgit-Baltistan.



Training Programmes by PDC

During 2021, PDC conducted a Trainee Program for newly inducted officers at Election Commission of Pakistan (ECP) and conducted customised training for National Logistics Cell (NLC) on the topics of Management and Primavera Project Management tool, and Touchstone Communications on the topics of LEAD Management.



Workshop on Advanced Characterisation Techniques for Energetic Materials Engineering Professionals

SCME organised a workshop from February 15-19, 2021, in collaboration with PDC, for the benefit of senior officers of Pakistan Armed Forces and strategic organisations. The workshop was conducted by Professor Dr Amir Azam Khan (Principal SCME), Dr Abdul Qadeer Malik (Senior Faculty Member), and Dr Tayyaba Noor (Focal Person).



NIPS-ORSAM organises an international webinar on “Normalisation in the Gulf Region: Significance for Turkey and Pakistan”

NIPS jointly organised a webinar with ORSAM -leading Ankara-based think tank on “Normalisation in the Gulf Region: Significance for Turkey and Pakistan” on February 9, 2021. The objective was to analyse the evolving situation in Gulf Region and strengthen the strategic and cultural bond between the two countries. It was emphasised by the Pakistani speakers that Turkey has much to offer in tourism and Pakistan can learn from their experiences. Engr Javed Mahmood Bukhari HI(M) (Retd), Rector NUST, Professor Dr Ahmet Uysal, President, ORSAM and Ambassador (Retd) Javed Hafiz, shared their insightful views on the subject.



SCME hosts session on “Plastic Waste and its Recycling”

Pakistan Science Foundation (PSF) in collaboration with its partner organisations, including UNESCO, UNDP, Global Water Challenges (GWC), and the Coca Cola Foundation, organised a session on “Plastic Waste and its Recycling” on November 3, 2021, at NUST SCME. The distinguished panellists included Dr Akhtar Nazir (Federal Secretary for Science and Technology), Ms Patricia McPhillips (Country Director UNESCO), and Dr Shahid Baig addressed the audience. Chairman PSF Dr Shahid Baig termed plastic waste a global problem, adding that if corrective measures were not taken, future generations would suffer. Pro Rector RIC NUST, Dr Rizwan Riaz, also graced the occasion and thanked PSF for organising this important session at NUST.



First-ever Real Estate Diploma Program in Pakistan

In collaboration with Graana.com, PDC has launched the first-ever Real Estate Diploma Program in Pakistan. Three batches of the first Certification in Real Estate Science Level-1 have been completed. This certification will soon be scaled to Level 2 & 3.



Participation of MCS Faculty Members in Workshop

The team leader of STEM Women Pakistan and Assistant Prof Dr Farkhanda Afzal faculty at NUST MCS conducted the workshop "Taking a Giant Leap for Gender Equality-Emerging Opportunities," in hybrid mode on October 31, 2021, at the University of Lahore. The focus of this workshop was on bridging the gender gap in STEM. Assistant Prof Alia Razia Malik, faculty member of MCS, talked about ways to mitigate the gender gap. The pressing issue is gender disparity in graduating and joining professions related to STEM (Sciences, Technology, Engineering and Mathematics). Pakistan has the highest disparity according to World Economic Forum Report 2020. Stem Women Pakistan in collaboration with AlumNode has undertaken the project to provide support to females so they can enter the STEM industry.



Freelancing Seminar

Freelancing is now known as the future of employment and is taking the world by storm. On December 15, 2021, IEEE MCS Student Branch made interaction with Mr Hisham Sarwar who is a renowned Pakistani freelancing expert. During his session, he gave an insight into the perks of freelancing and how students can put their skills out to ace in the world of freelancing.



Aiding the At-Risk Students

An interactive session was held at NUST Centre for Counselling & Career Advisory (C³A) for hostel managers on August 31, 2021. The session emphasised the role of hostel managers as the first line of defence to safeguard against any untoward incident emanating from students' emotional instability. Participants actively took part in the session.



Major Challenges & the Importance of Counselling in University

Centre for Counselling & Career Advisory's Deputy Director, Dr Noreen Akhtar, visited National Defence University, Islamabad and delivered an awareness talk on October 8, 2021. The objective of the session was to create awareness regarding the major psychological factors that could hinder students' educational performances. The well-being of mental health of students is of great importance and counselling plays a vital role in dealing with the challenges such as stress, anxiety, and depression.



NUST Sexual Harassment Policy with Female Focal Persons

C³A conducted a one-day refresher training for female focal persons on September 22, 2021. The purpose of the training was to familiarise the audience with NUST Harassment Policy and its implementation. Pro-Rector Academics Dr Osman Hasan graced the occasion as chief guest and gave the opening remarks, followed by a talk by Dir SAC, Mr Ali Hasnain Syed. The training aimed to help female focal persons understand the process of lodging a complaint and handle cases of workplace harassment.



International Webinar on “The New Century Dynamics of Hybrid Warfare”

Hybrid warfare can disrupt regional and global peace and stability. To look at the different aspects of Hybrid Warfare, NIPS organised an International Webinar on “The New Century Dynamics of Hybrid Warfare” March 25, 2021. Security experts from Russia and Pakistan discussed the dynamics of hybrid warfare and its effects. Dr Leonid Savin, Geopolitical Analyst from Russia; Lt Gen Naeem Khalid Lodhi HI (M) (Retd), Security Analyst from Pakistan and Ejaz Haider, Executive Editor Indus News Channel delivered talks on the topic.

Simultaneous Thermal Analyzer (STA) Installed at SNS

Thermogravimetric analysis (TGA) is a useful technique in analytical sciences especially Physics and Chemistry that records the weight loss at milligram scale. Simultaneous Thermal Analyzer commonly known as STA combines the powerful TGA with calorimetry to give a further insight regarding heat gain or heat loss during the weight change. SNS procured STA in June under the HEC-NRPU project won by Dr Faheem Amin.

Training Course on Fourier Transform Infrared Spectroscopy

A two-day in-house training course was organised by SCME on September 27-28, 2021. The training was conducted by Dr Tayyaba Noor, a faculty member and a renowned researcher. The training focused on understanding and knowledge about IR spectroscopy, learning about solid and liquid phase sample preparation and analysis techniques in absorbance and transmittance mode. Certificates were awarded to all the 21 selected participants. Future training for XRD, SEM, GC-MS, AFM, HPLC is also in the planning phase, as informed by Dr Tayyaba.



Department of Chemistry holds International Conference on Research Advancements in Chemistry

Department of Chemistry-SNS organized the first online “International Conference on Research Advancements in Chemistry” from March 10-11, 2021. The conference received a positive response from the international fronts which is evident from the fact that as many as 1,044 research scholars from different national and international universities got themselves registered. Prof Dr Shahid Mahmood Baig, Chairman Pakistan Science Foundation, graced the event as Chief Guest. Several foreign guests speakers delivered their talks, and the event was concluded by Dr Azhar Mahmood, HOD Chemistry SNS, NUST.

The conference aimed at propagation of recent advancements in chemistry and material science with the academia. It focused on challenges associated with green environment and the plausible solutions to these problems. Moreover, this event helped the scholars exclusively concentrate on futuristic approach of knowledge-based industry leading to creation of new job opportunities.



Seminar on Recycling of “Plastic Waste and its Recycling”

NUST Office of Sustainability and SCME organised a panel discussion on “Plastic Waste and Its Recycling” on November 3, 2021, at NUST. The seminar “Plastic Waste & its Recycling” was organised in collaboration with UN-ESCO, UNDP, Global Water Challenge, Coca Cola Foundation, and New World.

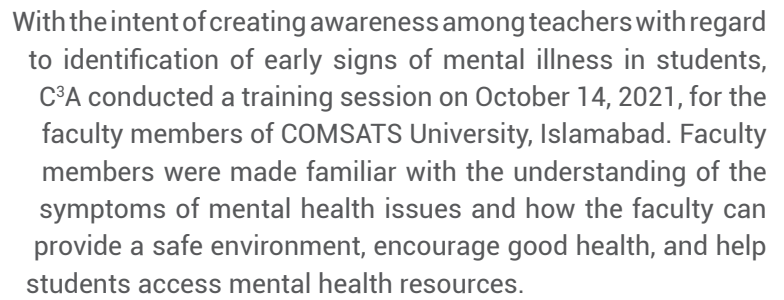
Key stakeholders from partner organisations joined the discussion, which was conducted by PSF Chairman Dr Shahid Mahmood Baig. Dr Nazir Akhtar was the chief guest at the event. The discussion began with the initiatives of UNDP for transforming Rahim Yar Khan into a zero plastic waste city. Once the project is complete, the same model would be replicated in the other cities.



STEM for Women’s Empowerment in Pakistan: Providing Equal Opportunities

NUST Sustainability Office and CHIP Training & Consulting – Pvt Ltd, jointly held a seminar on March 8, 2021. The seminar is part of the larger campaign titled: STEM4WE, launched by the Asian Development Bank (ADB). The objective of the seminar was to bring together the stakeholders and discuss the challenges and opportunities for women in STEM related fields in Pakistan.





C³A conducted a session for the students of NUST CEME on November 9, 2021. The information regarding the mental health issues most prevalent in young adults was the focal point of the seminar. Students learned how they can get help and find effective resources to tackle these issues.

National Science & Technology Park (NSTP-NUST) in collaboration with Stimulus and Friedrich Naumann Foundation for Freedom-Pakistan organised a bootcamp on "Women in Stem Entrepreneurship" on September 2 & 3, 2021. The purpose of the boot camp was to empower women entrepreneurs and giving structured guidance on developing a business model for their tech startups. Group Captain Dr Muneeza Rizwan, Associate Professor of Dermatology-PAF Hospital Islamabad was the Chief Guest.



Under the auspices of Ministry of Science and Technology, NSTP-NUST hosted Venture Capital Stakeholders Conference in 2021. The purpose was to develop a policy framework for venture capital companies.

Various stakeholders of the conference were The Securities and Exchanges Commission of Pakistan, The State Bank, Venture Capital Companies, Ministries of Commerce, Industries, Finance, Federal Board of Revenue, and numerous others. Federal Minister for Science & Technology, Senator Shibli Faraz, Rector National University of Science and Technology (NUST) Lt General (Rtd) Javed Mahmood Bukhari, Secretary

MoST Mr Dr Akhtar Nazir and keynote speaker Mr Faisal Aftab MD Zayn Capital addressed the conference.



Launch of #RamadanSeries & #AskCEO Webinar Series

In 2021, PDC launched #RamadanSeries and #AskCEO webinar series. The objective was to invite industry professionals and CEOs of different organisations from various verticals and reflect upon the industry growth and challenges. These webinars serve a great purpose and provide the much-needed insight to the youth in particular and all the participants in general.

Roundtable on Challenges and the Way Forward for Afghanistan

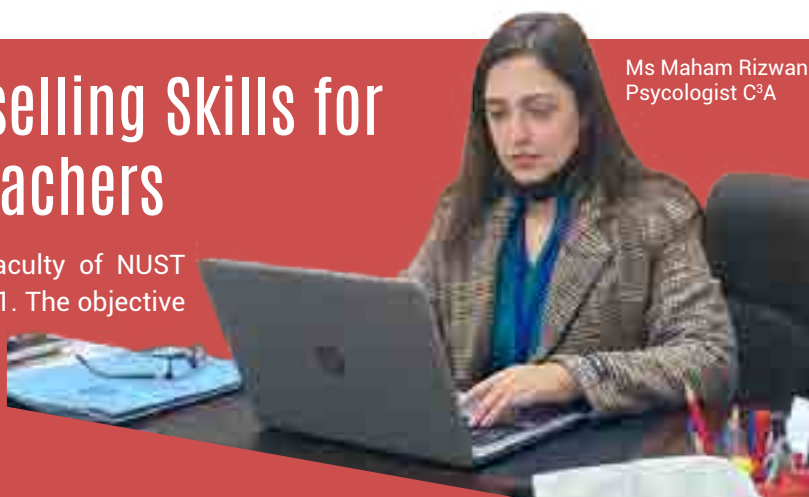
To evaluate the emerging challenges and subsequent political and social issues, a Roundtable on "Envisaging a New Chapter for Afghanistan: Appraisal of Challenges and the Way Forward" was held on August 26, 2021, at NUST. Lt Gen Naeem Khalid Lodhi, HI (M) (Retd), Former Caretaker Defence Minister of Pakistan; Lt Gen Dr Muhammad Zahid Latif Mirza HI (M) (Retd), Former Secretary



Defence Production; Dr Ashfaq Hassan Khan, Principal, S3H, NUST and Director-General NIPS; Mr Zahid Hussain, Journalist, and Security Analyst and Professor Nazir Hussain, Dean Social Sciences at the University of Wah were among the participants of the session.

Basic Student Counselling Skills for University Teachers

C³A conducted an online session with the faculty of NUST Balochistan Campus (NBC) on October 27, 2021. The objective of the session was to equip the faculty members with basic counselling skills and how to respond to students with psychological issues and provide them with psychological first aid.



Ms Maham Rizwan
Psychologist C³A

Seminar on Biogels

SCME conducted a seminar on prospective industrial projects on August 16, 2021, to explore collaborative initiatives in Biomaterials. The guest speaker was Dr Ayesha Mujeeb, Scientific Advisor at BIOGEL (UK) and a shareholder at the Biotech Company. In her talk, she described various possibilities of integrating the projects offered by Manchester BIOGEL with research already conducted at SCME.



International Webinar on Evolving Situation in Afghanistan

To discuss the emerging situation in Afghanistan, NIPS organized a high-level International Webinar on “Afghanistan at Crossroads: Promise of Peace and Geopolitical Imperatives” on June 2, 2021. Dr Vladimir Kozin, Leading Expert, Military-Political Studies Center, Moscow State Institute of International Relations; Prof Dr Ahmet Uysal, Director of Middle Eastern Studies Center; Lt Gen Dr Zahid Latif Mirza HI(M) (Retd) and Professor Dr Syed Hussain Shaheed Soherwordi, Chairman, Department of International Relations at the University of Peshawar were among the keynote speakers.



Workshop on Corporate Governance

In 2021, PDC for the first time organised a three-day workshop on Corporate Governance. C-Level executives and members of the Board of Directors from across the country, participated in the workshop. A four-day training on Office of Research Innovation & Commercialization (ORIC) was also organised by PDC that was attended by officials from leading universities of Pakistan.



C³A Orientation Lectures

Psychologists of C³A delivered orientation lectures at all Schools and Constituent Colleges of NUST to acquaint students with different Psychological/Career Counselling services offered by the Centre for the NUST fraternity, and apprised them about Harassment Complaint Cell.



PARTNERSHIPS | 04

FOR IMPACT



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US Embassy officials visit NUST to discuss avenues for collaboration

Officials from the US Embassy in Islamabad visited Innovation & Commercialisation Directorate at NUST on September 29, 2021. They were welcomed by Dr Rizwan Riaz, Pro-Rector (RIC) and Mr Muhammad Anwar Fareed, Director Innovation and Commercialisation. The broader agenda of the meeting was to develop collaboration with the US through its representatives in Pakistan for enhancing the bilateral partnership in industrial and R&D ventures.



International Association of Universities Horizons features NUST

NUST was recognised as an SDG-engaged university in the latest edition of the International Association of Universities Horizons issued in December which reflects on Leadership for a Sustainable Future along with 34 articles from around the globe.





NUST students selected for Millennium Fellowship Class of 2021

Out of 501 students from across the globe, as many as 25 students of NUST have earned the honour of being selected for the prestigious Millennium Fellowship for the Class of 2021. The students will be engaged in different projects collectively and these undergrad students who are simultaneously leading sustainable development-related projects aimed at achieving the UN SDGs. All these projects will be supported and facilitated by the Office of Sustainability at NUST.



Global Partnership “Pakistan-Russia Relationship: Prospects for Cooperation”

NUST, on its mission to expand its strategic and academic relations globally, convened a session on “Pakistan-Russia Relationship: Prospects for Cooperation” on Tuesday, September 29, 2021. Dr Vladimir Kozin, a leading expert in his field from Russia was the keynote speaker of the event. Dr Kozin talked about future opportunities available to both countries for the mission.

“Develop a passion for learning. If you do, you will never cease to grow”

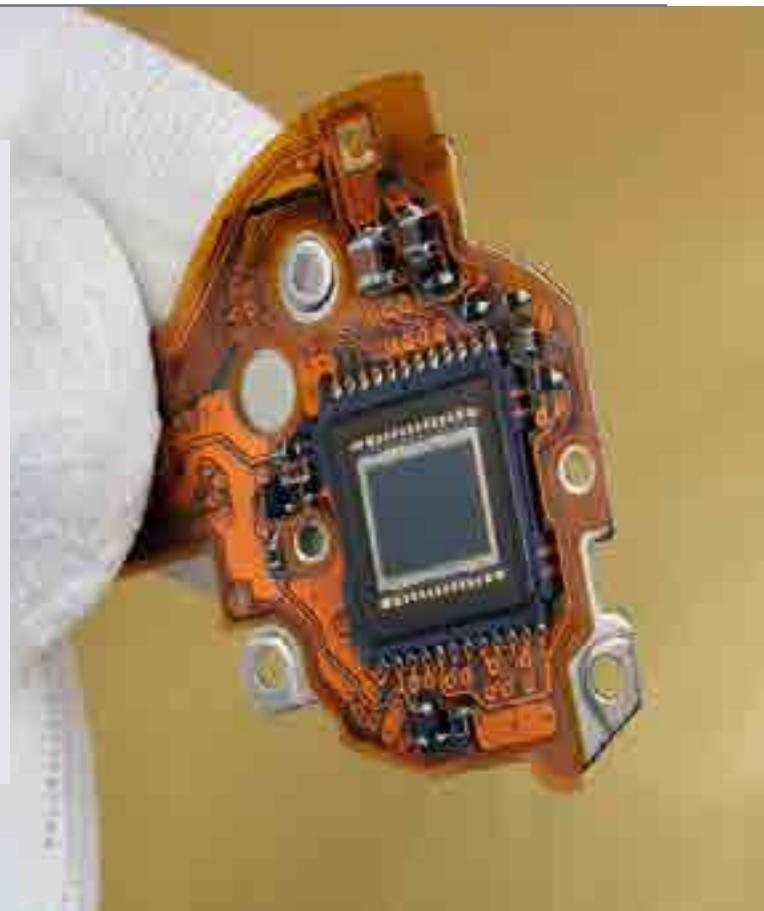
Anthony J. D'Angelo



Delegation from University of Malaga, Spain visited SEECs on November 16, 2021

Signing of DoU between NUST and FBK, Italy

A DoU for research collaboration and academic exchange program in the field MEMS and Microsystems Development has been signed between NUST and Sensors & Devices Centre (S&D), Italy. The S&D is a center of excellence equipped with state-of-the-art facilities for research and development that will allow Robotics research group of NUST to have access to one of the largest facility of Europe.



NUST PDC gets John Maxwell team on board for Corporate Leadership Solutions

PDC inked an MoU with John Maxwell Team to bring in internationally recognized John C Maxwell Curriculum and offer a variety of Leadership courses.



His Excellency Mr Paulo Neves Pocinho Ambassador of Portugal on June 9, 2021



Her Excellency Ms Lis Rosenholm Ambassador of Denmark on June 9, 2021

“Change is the end result of all true learning.”

Leo Buscaglia

Deputy Chairman Planning Commission visits NUST

Mr Muhammad Jehanzeb Khan, Deputy Chairman Planning Commission, applauded NUST's promotion of quality higher education and cutting-edge research in conformance with social and industrial needs. He expressed these thoughts during his visit to NUST Islamabad Campus on July 15, 2021.



Aga Khan Agency for Habitat Inks Agreement with NUST

NUST Office of Sustainability and Aga Khan Agency for Habitat (AKAH) signed an agreement on September 03, 2021. Mr Nawab Ali Khan, CEO of AKAH, and Dr Rizwan Riaz, Pro-Rector Research, Innovation & Commercialisation NUST, signed the MoU to collaborate for developing habitat plans for five valleys by conducting socio-economic, cultural, and environmental assessments and research.

Serena Hotels offers Management Trainee Programme for NUST's female Business graduates

Serena Hotels signed an MoA with NUST on July 16, 2021, to induct female graduates from NUST Business School into the Serena Management Trainee Programme. The agreement was signed by Engr Javed Mahmood Bukhari, Rector NUST, and Mr Aziz Boolani, CEO Serena Hotels South and Central Asia.



NUST inks MoU with Ministry of Railways

With the aim to facilitate the Ministry of Railways in hiring human resources from NUST through Tech Valley Pvt Ltd, an MoU was signed between the organisations at a ceremony held at the Ministry of Railways on April 20, 2021.



Delegation from UET Lahore visits SCME

A delegation from the Department of Chemical Engineering UET Lahore, including Dean, Chairperson, and Chairman UET KSK Campus, visited SCME on July 8, 2021. A detailed meeting was held between the delegation, the Principal of SCME, and the HoD Chemical Engineering on student exchange and opportunities for enhancing long-term bilateral relations between both institutes.

Endowment Seat by SEECs Class of 2017

The graduates of SEECs 2017, signed an MoU on January 22, 2021 at NUST for establishing a batch scholarship fund as a class gift under the NEED initiative. Pro-Rector RIC, Dr Nassar Ikram, and Principal SEECs, Dr Osman Hassan, signed the MoU.

IP Licence on Industrial IoT Transferred to Local Industry

In an agreement reached at NUST on September 9, 2021, two IPRs for the technology developed for Industrial IoT 4.0 virtualisation have been transferred to the local industry Wisdom Wheel Wireless Pvt Ltd at NSTP. The agreement will allow manufacturing facilities and industrial installations to be able to effectively monitor and control certain parameters.



CEO NETSOL TECHNOLOGIES PAYS VISIT TO NUST



Mr Najeeb Ghauri, Founder, Chairman of the Board of Directors, and CEO of Netsol Technologies Ltd, visited NUST on July 6, 2021. Avenues for enhancing long-term bilateral relations between NUST and Netsol were discussed.

EXECUTIVE DIRECTOR AT MEHERGARH VISITS C³A

Ms Maliha Hussain, Executive Director at Mehergarh, visited C³A to provide guidance and suggestions while reviewing the NUST Anti-Harassment Policy.



PEC Team Visits SCME for OBE-based re-accreditation of Engineering Programmes

A delegation from Pakistan Engineering Council (PEC) visited School of Chemical and Materials Engineering (SCME) on July 1, 2021 for re-accreditation of Chemical Engineering and Materials Engineering programmes.



Signing of agreement between RML and 4A Plastics

An agreement between RML Lab (NUST CEME) and 4A Plastics was signed to establish an injection Molding Facility in the Robot Maker Lab with a partnership worth PKR 17 million.



A Day with the Impact Champions

NUST organised a virtual interactive forum to celebrate 'A Day with the Impact Champions' on May 7, 2021. The event served to conclude NUST's Zakat Drive 2021 on the note to aid the students who have been hard hit by the ongoing pandemic.

MoU Signing with Lakson Group

NUST welcomed Lakson Group as a partner to the university's developmental initiatives on April 30, 2021, where the CEO Sybrid Private Limited inked the agreement. Through this agreement, the organisation has extended support for financially challenged students at NUST.



MoU Signing - Kashir Asghar Endowment Fund

In the loving memory of Mr Kashir Asghar (Faculty NUST), Engr Muhammad Asghar, Former Rector NUST visited the university on February 24, 2021 to formalise the establishment of 'Kashir Asghar Endowment Fund.' A special endowment committee has also been formulated to raise more funds.



NUST PDC expands its foothold across Pakistan

NUST PDC has launched programmes and expanded its foothold in Lahore and Karachi along with signing an MoU with the Institute of Financial Markets of Pakistan.



MoU Signing Ceremony - Tufail Group

NUST entered an MoU with Tufail Group in Karachi on June 24, 2021. The MoU formalises the existing partnership with the Tufail Group on the NUST Endowment for Educational Development Programme.

Descon Engineering- an esteemed partner of NEED Initiative



Descon Engineering through its CSR initiative, Bilquis, and Abdul Razak Dawood Foundation, set up Descon Endowment Fund to support financially-challenged, brilliant students. The foundation's representatives visited NUST H-12 Campus, Islamabad to formalise the agreement.

VC IBA Sukkur visits National Science & Technology Park at NUST



Vice-Chancellor IBA Sukkur, Dr Syed Mir Muhammad Shah, paid a visit to NSTP at NUST on January 5, 2021. The visit was aimed at garnering intellectual-informational support from NSTP for instituting Sukkur IBA's own STP – NASTech Park – on a similar pattern.



IRCBM COMSATS delegation visits SCME NUST

A delegation from IRCBM COMSATS visited SCME on July 6, 2021 and met Prof Dr Amir Azam Khan (Principal SCME) along with other faculty members. A detailed orientation on innovation and research infrastructure along with talks about mutually beneficial partnerships were part of the discussion.



NUST, NFEH Ink MoU



NUST and National Forum for Environment and Health (NFEH) entered an MoU on February 26, 2021, in a ceremony hosted by NUST. Mr Naeem Qureshi, President NFEH, Mr Anis H. Younus, President CSR Club Pakistan, and a dear friend of NUST were present at the event to formalise the long-standing partnership of NUST and NFEH.

CIPS-NUST and IPS sign General Agreement for Cooperation

CIPS, NUST, and IPS entered into a general agreement for cooperation for which an accord was signed between the Associate Dean CIPS, Prof Tughral Yamin, and Chairman IPS, Khalid Rehman during a ceremony held at NUST's main campus on March 29, 2021.



SCME represents NUST at World Science Day for Peace and Development

The World Science Day for Peace and Development was held at PSF Auditorium, Islamabad on November 10, 2021. The event provided a perfect opportunity to mobilise the scientific community to bring science closer to society. SCME NUST was represented at the event by Dr Erum Pervaiz (HoD Chemical Engineering Department) and Dr Salman Raza Naqvi (Assistant Professor Chemical Engineering).



NUST signs agreement with a consortium for the development of NSTP

NUST signed an agreement with a multinational consortium led by International Consulting Associates (ICA) for the development and expansion of NSTP at the NUST Islamabad campus, in a ceremony on July 15, 2021.



PDC to conduct Google Cloud training in Pakistan

PDC signed an MoU with TechValley Pakistan to stand with the manifesto of Digital Pakistan which will initiate the provision of Google Cloud training for NUST students, industry leaders, and professionals from a diverse range of fields.



NUST, Jaswal Films Join Hands



NUST joined hands with Jaswal Films on August 12, 2021, to engage its mass communication students from S3H for philanthropic activities and internship opportunities.

NUST inks a Memorial Scholarship with Two Five Trust

The 25th Entry of PAF College Sargodha inked an agreement for the support of financially challenged students at NUST. The endowment agreement has been named after two shuhada from the batch.



NUST inks partnership with Orange Tree Foundation

NUST has officially welcomed Orange Tree Foundation (OTF) on October 6, 2021, as an esteemed partner to help financially challenged students in Karachi.





NUST Outreach Programme 2021

NUST Outreach Programme 2021 was conducted in Quetta from Aug 2 to Sep 4, 2021. Out of 32 candidates who appeared in NET-2021 only 4 candidates joined the Balochistan Campus, and 3 students were granted full scholarships.

NUST SCME and Fazal Steel Limited Sign a Memorandum of Understanding

NUST SCME and Fazal Steel Limited signed an MoU for a project titled "Implementation of an Integrated Energy Management System in Fazal Steel Manufacturing Plant" on January 26, 2021, to provide a platform for both organisations to carry out energy, environmental, and steel quality specific applied projects along with providing opportunities to their engineers.



NUST signs MoA with Urtasker

In a ceremony held at NUST main campus on October 1, 2021, Pro-Rector (RIC) AVM Dr Rizwan Riaz and Chief Executive Officer (CEO) Urtasker Mr Zeeshan Riaz signed an MoA to facilitate Urtasker in acquiring human resource from NUST.



AGREEMENTS WITH DIFFERENT R&D ORGANISATIONS



Research Dte hosted a Memorandum of Agreement (MoA) signing ceremony between NUST and the University of Kotli, Azad Jammu & Kashmir (AJK) which was held on December 1, 2021 in RIC Sectt.



Mr Salim Ghauri visited NUST on February 17, 2021, where he met with Dr Murtaza Najabat CEO N-ovative Health Technologies. They expressed their interest in joint efforts for scientific and technological advancement.



Memorandum of Agreement (MoA) between NUST and Khyber Medical College Peshawar was signed on September 17, 2021.

NUST Awareness Sessions

Admissions Directorate conducted 33 UG awareness sessions (online and FTF mode) in 2021. Around 6000 candidates and faculty members attended the sessions.



NUST team met with a long-term partner, Association of Builders and Developers of Pakistan (ABAD), to further the connection with the organisation. ABAD members led by Chairman, Mr Fayyaz Ilyas, pledged to partner on various nodes including endowment support, research, internships, etc.

INSPECTOR GENERAL TRAINING & EVALUATION (IGT&E) VISITS NUST



Lt Gen Syed Muhammad Adnan, HI (M), Inspector General Training & Evaluation (IGT&E) of Pakistan Army, paid a maiden visit to the main campus of NUST where he discussed new initiatives, high-impact R&D projects, and future plans of NUST.





▲ A team of psychologists from Capital University of Science and Technology (CUST) visited the Centre for Counselling & Career Advisory (C³A), aimed at collaborating with NUST to establish a Counselling Centre at their university in line with C³A.



▲ Dr Noreen Akhter, Deputy Director, and Ms Shaista Zafar psychologist visited CAE Risalpur and acquainted the students with different psychological/career counselling services offered by the Centre for the NUST fraternity.



▲ A corporate breakfast was hosted by Rector NUST on March 20, 2021 at Karachi Gymkhana Club after taking charge of the university where he met with 21 top business and industry leaders of Karachi.



▲ Mr Ali Hasnain Sayed, Director C³A, and Dr Noreen Akhtar, Deputy Director C³A visited MCE Risalpur and briefed the students about the Center and the various services offered at C³A.



▲ Mr Ali Hasnain Sayed, Director C³A, and Dr Noreen Akhtar, Deputy Director C³A visited MCS and briefed the students about the center and the various services offered at C³A.

05

OPINION



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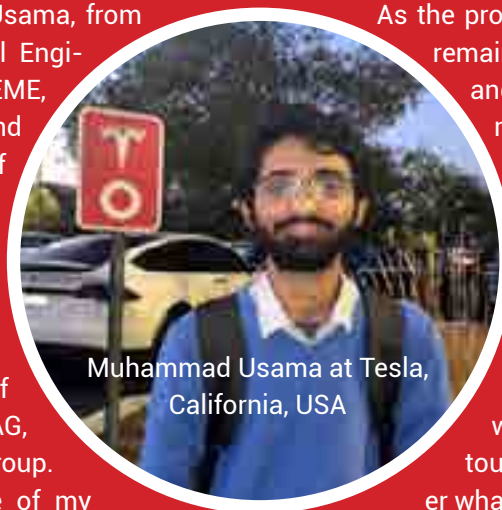
The miracle that NUST is....

The year 2021 marked my two-decade-long affiliation with my alma mater NUST. During this journey, I have witnessed many accomplishments of this premier national institution, most importantly, its impact on the transformation of the lives of our people, our society, and our economy at large. I would take this opportunity to highlight one such illustrious example which is aimed at inspiring our faculty; and particularly, the budding NUSTians, that how consistent effort and dedication can bring world-class success.

It was a routine afternoon of August 2019 when two undergraduate students, Abdul Basit and Muhammad Usama, from Department of Electrical Engineering (EE), College of EME, walked into my office and discussed prospects of developing an electrically driven, self-driving car as their final year project (FYP). They intended to work under my supervision because of my affiliation with NUSTAG, the NUST Automotive Group. NUSTAG is an initiative of my mentor Dr Raja Amer Azim, under its banner, various teams had represented NUST and won events in vehicles-related international competitions in the past. The idea of the FYP was that the vehicle mechanisms would be developed by a team of UG students from the Department of Mechanical Engineering, while its automation to make it self-driving would be done by EE students.

The plan appeared ambitious to say the least, as the quantum of work and the diversity of

domains was humungous. Just to highlight, the few major tasks were power management system, control system, state estimation, computer vision, and path planning. The only aspect that motivated me to accord for such a challenge was the idea to never discourage students' aspirations and adapt and adjust as an FYP would evolve. So then it all hinged upon the capability and motivation of the team. Abdul Basit was the star performer of the Department, as he had a very high CGPA and had secured straight A's in his A levels so he was expected to do well, but Muhammad Usama was a shy, at times casual student, with not very high CGPA.



As the project progressed, the team remained exceptionally focused and excelled in all of the domains that were required to make the project a success. This aspect spurred me on as well, and I provided the team situational guidance as much as I could, be it weekends or Eid holidays we remained constantly in touch. I did my best to gather whatever little resources that I had at my disposal to facilitate timely procurements. In this process every individual of the College of EME, from support staff to Dean extended wholehearted cooperation. Enabling innovation has always been the hallmark of the College of EME. As a result, the project was successfully completed and was declared the Best Project of the Department of EE. The team qualified for the Teknofest Autonomous Robotaxi competition in Turkey with very high marks. Unfortunately, we could



not make it to Turkey due to logistical issues created by the COVID-19 pandemic. The video of the project is available at the link in the end for the interested readers.

The story is more interesting from here. One fine day during the course of the project Usama came to me and informed me that he was in consultation with one of the teams and their lead at Tesla. He had shared his progress with them, and they were excited to engage with him. As time progressed, prospects of Tesla hiring Usama in their internship program were explored. Towards the end of the project, on the basis of the excellent work done, Tesla hired Usama as a paid internee for their plant in California. This was a rare if not a unique case of direct hiring of an undergraduate from Pakistan for Tesla's internship program. Usama right now is part of the program and is on the way to becoming a top-class automotive professional. He has been offered a fully funded PG program sponsored by Tesla at an IVY league University.

What makes Usama's story more remarkable is that he hails from a small town named Bikhri, district Nankana Sa-

hib. He had obtained all of his education up to FSc locally. I once asked him about the educational facilities, and in his typical shy manner, he replied that they were just like they are in rural parts of the country. I further sought clarification if they had chairs or taat (rugs) in the classroom, he replied in negative. This is enough to highlight the challenges that Usama had to overcome to compete with the best and reach NUST.

The transformation that NUST has brought about in the life of a young student within merely four years is just the beginning. It is indeed the quality of Higher Education that is the most significant instrument of change for society.

We are indebted to those whose vision instituted NUST, and those who contributed towards its evolutionary growth into Pakistan's premiere science and technology university.

May Allah Almighty help and guide us all!



About the Author: Dr. Fahad Mumtaz Malik is Professor and Head of the Department of Electrical Engineering, NUST College of EME. He has been a part of the NUST faculty since 2009. He is a recipient of the Presidential Gold Medal twice as a student at NUST, for BE and MS Degrees.



Scan QR for Project Video

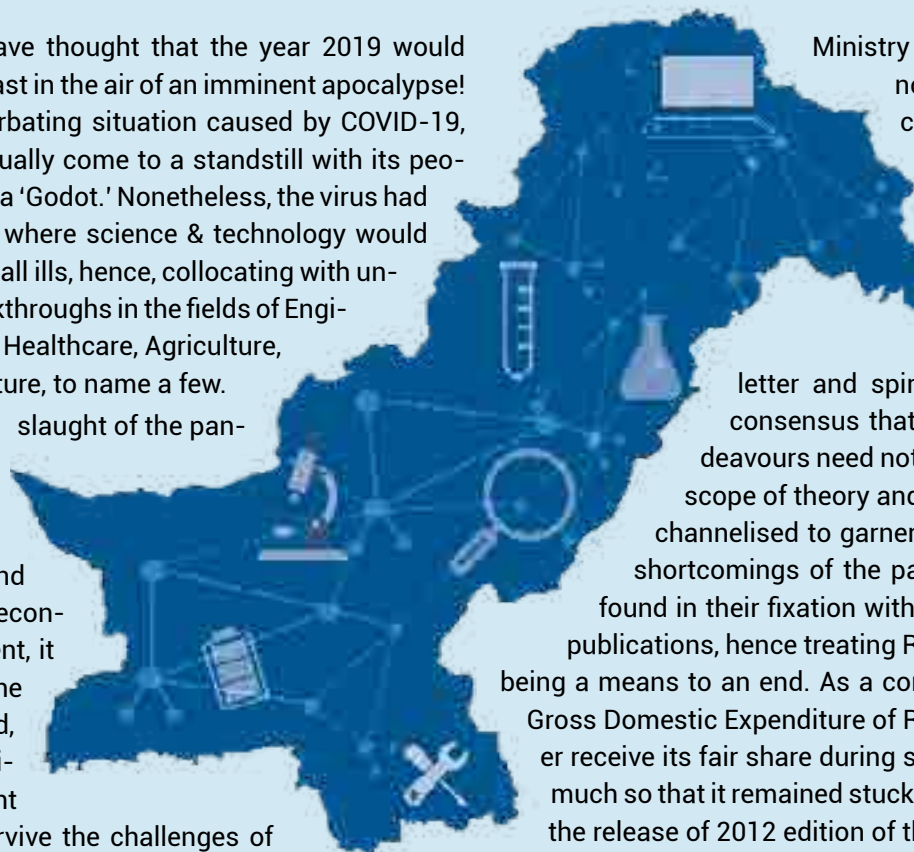
<https://www.youtube.com/watch?v=vmQlzTYoonc>

Is this a Watershed moment for S&T in Pakistan?

Who would have thought that the year 2019 would breathe its last in the air of an imminent apocalypse! Amidst the exacerbating situation caused by COVID-19, the world had virtually come to a standstill with its people left waiting for a 'Godot.' Nonetheless, the virus had erupted in an era where science & technology would be the panacea of all ills, hence, collocating with unprecedented breakthroughs in the fields of Engineering, Genetics, Healthcare, Agriculture, Energy, Infrastructure, to name a few.

Where the onslaught of the pandemic posed a novel threat to the S&T-inspired day and age, and shrank the global economy by 4.4 per cent, it caused a stir in the developing world, including Pakistan, to re-orient themselves to survive the challenges of modern times. It called for laying out a more responsive and robust Science, Technology & Innovation (STI) policy framework to secure a safer tomorrow for posterity.

Ensuing meticulous deliberations by the experts, the new STI policy has been reformulated under the auspices of



Ministry of Science & Technology, Pakistan. The contours of this policy articulately encompass the collective desire to transform Pakistan into a knowledge-based economy in true

letter and spirit. It draws upon the consensus that the national R&D endeavours need not be confined to limited scope of theory and academia, and rather channelised to garner social dividends. The shortcomings of the past policies have been found in their fixation with scientific articles and publications, hence treating R&D as an end in lieu of being a means to an end. As a consequence, Pakistan's Gross Domestic Expenditure of R&D (GERD) could never receive its fair share during successive regimes, so much so that it remained stuck around 0.2% following the release of 2012 edition of the policy.

Owing to outsized productivity returns and high spill-over gains, the developed world's Gross Domestic Expenditure on R&D in 2020 have soared to an all-time high of 6.2% from the preceding year. There is no denying the fact that if Pakistan is to join the league of the developed world, investments in R&D are a must. To put things into

perspective, the first natural step ought to be a significant raise in allocations for creation of scientific knowledge, innovation and evocation of the spirit of enterprise. The courting of R&D allocation up to 1% of GDP is a welcome proposition in the new policy to reinvigorate Pakistan's STI ecosystem, which needs to be potentially sustained and further enhanced in the coming years.

In a bid to give their competitors a run for their money in the global economic face off, countries like China and the US have allocated above 600 billion USD on their R&D spending for the year 2022. Pakistan's new STI policy 2021/22 has been tailored to the demanding international dynamics as it incorporates strategies from conception to indigenous development of products and technologies to reduce staggering import bills. It deeply advocates the formation of working groups that will not only converge all national-level expertise and resources for development of technology-based-products but also prove instrumental in institutionalising the best practices like Technology Readiness Levels (TRLs) for development of technologies at par with the international benchmarks. In the similar vein, the policy postulates the establishment of National Scientific Data Repository to fulfil country's present and future data needs.

Development and diffusion of technologies thrive upon an environment conducive to business and vice-versa. Pakistan's galloping ease of doing business index ascending 28 positions last year alone has not gone unnoticed. With 330 million USD to its credit in 2021, the Pakistani entrepreneurial landscape is now brimming with diverse human potential and promising returns on investments. The policy streamlines measures to tap this digital tipping point of

the country, while putting to use minds of the youth bulge through educational reforms, skill development and propagation of risk-taking culture.

One of the key takeaways from the Global Innovation Index 2021 is that innovation clusters are analogous to islands of knowledge and wealth, where tech-intensive products emanate from and find their diffusion beyond international consumer markets. National Science & Technology Park (NSTP) at NUST has been raised akin to international tech-clusters to reap the benefits in tangible terms. Its rapid success vis-à-vis job creation, wealth generation and churning out of technology products has earned STPs a prominent place in the policy, making a strong case for replication of such infrastructures across the country.

The government too, instead of relying on a department or a policy as an item of faith, legislated the establishment of Special Technology Zones Authority last year to repudiate bureaucratic norms in extrapolation of STPs. Across-the-board support for establishment of clusters translates well into the policy that provisos conversion of country's 10 cities into smart-cities to create poles of knowledge, prosperity and tech-driven growth.

What sets the new policy apart from its rudimentary forms is that it imbibes implementation mechanism to steer clear of pitfalls and is purposely open-ended to reciprocate well to evolving S&T landscape. It holds promise for strengthening of the National Innovation System, provided its effective implementation and subsequent appraisals after regular intervals. Pakistan is destined to become the 20th largest economy by 2030; all it would take is to latch on this watershed moment.



About the Author: Adil Murtaza

The author is Manager Operation at National Science & Technology Park, NUST and has contributed to the drafting of STI policy 2021 while being on attachment at Ministry of Science & Technology. mgr.ops2@nstp.pk

NUST ISLAMABAD CAMPUS

A unique amalgam of nature and nurture

The lush green campus of National University of Sciences & Technology (NUST) in Islamabad mesmerises anyone who experiences its serenity, exquisiteness and grandeur. It is not untenable to classify the picturesque campus – that was a mere piece of crudely unattended land not long ago – amongst the most spellbinding anywhere in the world. Though transforming the campus from wilderness to its present soul-warming state was a tough row to hoe, the unremittingly vigorous efforts have translated this quixotic venture into an enviable reality. It all began in 2008 with the cultivation of area alongside Aligarh Avenue (starting from Gate-2). Students, faculty and staff of NUST Schools (all located in the H-12 campus) and even constituent military Colleges exuberantly partook in the plantation campaign. Concurrently, there began the construction of institutions such as NUST Business School (NBS), School of Electrical Engineering & Computer Science (SEECS), Research Centre for Modelling & Simulation (RCMS), etc., along with hostels. The horticulture team embarked on beautifying these under-construction buildings, which they did impeccably well employing the Potohar-friendly, predominantly fruit trees viz. Citrus, Fig,

Loquat, Pine and Olive to name a few.

The challenges horticulture team initially faced were daunting for the land to be ameliorated then, was barren and infertile coupled with scarce water resources. Nevertheless, the determination of the spirited workforce, supervised by Deputy Director Horticulture Mr Awaiss Ahmed and guided by the vision of NUST's leadership, has always been proverbial, as they have exhibited both prudence and diligence in raising a green campus amidst a conglomerate of state-of-the-art building infrastructure.

"While integrating high-tech labs, sophisticated teaching and research edifice and amenities for all-inclusive life, NUST Islamabad Campus epitomises an amalgam of nature and nurture. Schools, hostels, cafeterias, grounds, parking lots, roadsides and vantage points have been ornamented with trees, flowerbeds and green belts in a well-orchestrated manner."

During 2010-11, the staff cultivated about 20.1 acres of land; the figure rose to 30.05 and 26.90 acres in 2012 and 2013 respectively. Similarly, 14.7 acres of land was beautified in 2014 and 2015. According to the horticulture team, about 358 acres of land are now green with the development plan to cultivate another 25 acres of land by 2021. As of today, over 1 lac five thousand trees, apart from infinite number of shrubs, constitute the scenic campus. It also merits mention that 90%

of foliage has been obtained from NUST's home-grown nursery.



A significant portion of the total water consumption on campus is being recycled by NUST Membrane Bioreactor (MBR) plant and natural wetland systems. NUST's researchers, in collaboration with United Nations Educational, Scientific & Cultural Organization (UNESCO), have developed and installed a low-cost and low-maintenance waste water treatment plant. With a capacity to produce 75,000 gallons of recycled water every day, it currently produces the required 20,000 litres for all vegetation on campus. In addition, porous foot paths allow percolation of rain water into the ground and the cricket ground, futsal ground and Saddle Club ground also contribute to groundwater recharge. Three lakes have also been developed by damming natural streams passing through the campus for maintaining the water table for tube well pumping.

While integrating high-tech labs, sophisticated teaching and research edifice and amenities for all-inclusive life, NUST Islamabad campus epitomises a unique amalgam of nature and nurture. Schools, hostels, cafeterias, grounds, parking lots, roadsides and vantage points have been ornamented with trees, flowerbeds and green belts in a well-orchestrated manner. Those who are witness to the predicament dwelling in the campus back in the day are flabbergasted to observe the complete yet pleasant change in its outlook and aesthetic appeal. The conduct of plantation drives after regular intervals also inspires students and employees alike to contribute their fair share to conserving plants and take the nature-friendly campaigns to their

respective neighbourhoods.

The unique assortment of groves across earmarked areas at the Islamabad campus not only adds to the tranquility of a disciplined and conducive academic environment but also keep the temperature low by 2-3 degrees centigrade and significantly contribute to reducing the carbon footprint. NUST's impressive global standing at 248 as per Green Metric Ranking, and among top 300 globally and #1 in Pakistan in SDG: 13 (Climate Action) as per Times Higher Education Rankings, is a testament of the university's commitment to addressing the brewing environmental challenges. To further reinforce and streamline its efforts in line with the UN SDGs, NUST has also established the first Office of Sustainability in any HEI of Pakistan – a platform for effective collaboration amongst national, regional, and international stakeholders vis-à-vis sustainability initiatives.

Going further in its commitment to green initiatives, NUST has an extensive service network of electric shuttles plying across the Islamabad campus, and also boasts a smart bicycle sharing system – ECOLAD, a brainchild of the university's own students, which further reduces the use of combustion engines for short distance travelling. In addition, the campus also has 1 megawatt solar power generation capacity with solar panels installed at large parking lots and roofs of hostels and schools, with the plan to completely shift to renewable energy by 2030.



About the Author: **Faheem Khaliqdad**

The author is the Editor of NUSTIAN magazine and is currently serving at NUST Marketing & Communications Dte.

CO-CURRICULARS

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NUST Students bag various positions at Shell Eco-Marathon

Shell Pakistan organised the Shell Eco-Marathon (SEM) 2021 event on October 14, 2021, in Rawalpindi, where Engineering students from leading Pakistani universities showcased the performance of self-built vehicles across two categories – 'Prototype' (Battery powered) or 'Urban Concept' (Gasoline run). Team 'NUSTAG' from NUST CEME was declared the winner of 'Gasoline Urban' category. Team 'Envision' from NUST, PNEC, Karachi were the runners-up in the 'Battery Electric Prototype' category.



Global Special Prize Winners

The Global Special Prize at "Altair Global Digital Twin Contest 2021" was awarded to a team of NUST students, Abdul Muizz Jamal and Sania Shujaat from PNEC, and Daud Abdullah Khan from CEME.

The contest was a Mechatronics simulation competition focusing on the creativity, technical ability, and presentation skills of participants, who had to manipulate the balance of a ball and a tray simultaneously so the ball traces an image outline using servo motors and control systems.



Team NUST Airworks wins Safety Award, stands Runner-up at UK's International UAS Challenge

The Institution of Mechanical Engineers holds the UAS Challenge in the UK annually. Several teams consisting of students from universities design Unmanned Aircraft System (UAS) over a span of 9 months. The competition was held virtually for the year 2021. The teams were posed with the challenge of a natural disaster scenario, where they needed to provide relief packages to inaccessible areas, over 30 international teams took part in the competition where Team NUST Airworks consisting of twenty-five Electrical and Mechanical Engineering undergraduate students from Pakistan Navy Engineering College, NUST, Karachi.

The team scored second-highest cumulative score and won the runner-up award. The team was also awarded the Safety Award, as they gave an excellent explanation of their general approach and a good hazard table with clear consequences of concern, preventative, and corrective measures according to the judges. NUST Airworks came up with a tailless blended wing body aircraft, Zephyr, whose main structure was made up of fiber-glass shell, carbon fiber spars, and plywood ribs.



CEME student stands 2nd at CAD Competition

Mr Awais Raza, a student of DE-42 of Electrical Engineering participated in the "CAD Competition" held in UET Lahore from May 8-15, 2021. He stood second in the competition and received an honorary certificate signed by the President SAE-UET, Mr Ahmad Hassan. Students from the top universities of the country PIEAS took part in this national level competition.



Microsoft Imagine Cup-2021

Team "AI Based Ophthalmology Grading" from NUST, CEME, won the national round of Microsoft Imagine Cup 2021. The competition welcomes Engineering students from around the world to transfigure innovative ideas to reality. The winning project from NUST is a cloud-based application. It employs Artificial Intelligence and Deep Learning to grade a number of ophthalmology diseases through azure technologies and indigenously developed algorithms. The team consists of Mr Khizer Hussain and Mr Asad Mansoor Khan. They worked under the supervision of Dr Muhammad Usman Akram. Machine Learning methods with Microsoft's cloud-based services are employed to screen different eye diseases with specialist level accuracy. This project aims to diagnose eye diseases to save millions from eye diseases.



Create '21 - A Quest for Startups

Former Millennium Fellowship Project Gul-e-Shaoor from NUST led by Ms Izza Gul Awan (Batch 2K19, Millennium Fellowship Batch 2K21), along with team-mates Mr Syed Sibte Ali Baqar (Batch 2K19) and Mr Muhammad Zeeshan Tahir (Batch 2K18), from DC&SE, NUST, CEME, were one of the 10 winners in Create '21, Quest for Startups. The event was held at PIEAS from December 4-5, 2021 where teams from across the country competed to win 20,000/- cash awards for their startups along with attending mentoring workshops on entrepreneurship.



“It is the supreme art of the teacher to awaken joy in creative expression and knowledge”

Albert Einstein

SIMERGE 2021

A team of talented students from NUST PNEC bagged 2nd position in SIMERGE 2021, a national case study and stimulation competition held by KSBL and Engro Corporation. The three-day event evaluated several business functions such as Marketing, Analytics, and more.

The PNEC Team "OddBall" comprised Ali Ahmed, Danyal Atif Murtaza, Sobia Khanam, Saniya Mazhar and Ayesha Quddus, from BE Electrical Batch of 2019, PNEC. The team competed with 18 teams from all over Pakistan and won PKR 100,000/- cash.



Cyber Security Hackathon

MS students of Cyber Security PNEC participated in the first-ever Cyber Security Hackathon from November 1-2, 2021 and secured top positions. They secured 3rd position in Cyber Security Quiz Competition out of 17 teams as well as 1st and 2nd position in open analyst individual competition.



Participation of MCS team in Digital Cyber Security Hackathon

Ignite, a subsidiary of the Ministry of Information and Technology, organised Pakistan's first national "Digital Cyber Security Hackathon 2021" at COMSATS University. The five major competitive categories included Mobile Application Exploitation and Speed Programming among the rest. Bilal Qureshi, Abdul Hanan, and Umair Ahmed from Information Security and Software Department, MCS won the "Mobile Application Exploitation" category. Recognition at national level whilst competing against big names in IT industry testifies to their true potential and dedication to work.



Hult Prize Regional Winner-Floods

The Hult Prize is an annual, year-long competition that invites university students to solve challenging social issues through start-ups. The challenge topic is chosen each September by Former US President Bill Clinton. The competition donates USD 1 million to support the winning team in launching their social enterprise. The Hult Islamabad Impact Summit hosted 62 teams from all over Pakistan virtually at the Institute of Space Technology. The winner of this round will go forward to the Hult Global Accelerator Program in Mexico, representing Pakistan globally.

Team Floods, comprising Eesha Naeem, Muhammad Zarrar Mumtaz, Ali Abdul Rehman, and Asjad Ali won the Hult Islamabad Impact Summit. They will be representing Pakistan in the Global Accelerator Program. Team Floods is a self-founded organisation, founded in July 2019, they have been working to establish this venture along with

their team for a year. All of them are undergraduate 3rd year engineering students at NUST with Eesha, Zarrar and Asjad majoring in Mechanical Engineering (SMME), and Ali majoring in Electrical Engineering (SEECs).

This student-initiated start-up envisions holding food outlets accountable for wasting food while tackling food insecurity in Pakistan.



Orientation Event-MCS Telecom Society

MCS Telecom Society organised a spectacular orientation on December 13, 2021. The orientation marked a fresh start in the post-COVID era. Music, games, and ice-breaking sessions were the highlights of the event. The event was a success owing to the relentless efforts of the organising committee.



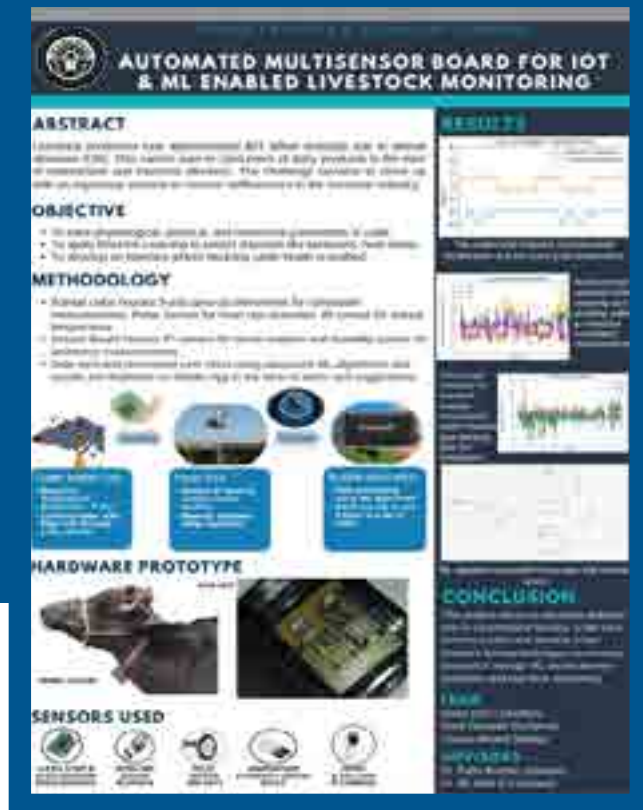
Campus Breathes Again

A huge pompous welcome was arranged at the NUST, H-12 campus, on October 22, 2021, for all students, faculty, staff and officers as the COVID-19 cases subsided and the restrictions were lifted. The attendees exhibited rational exuberance as they got together after a long break due to the pandemic. The whole day was packed with activities. The day began with the band parade followed by rifle drill by the Punjab Rangers which left everyone mesmerised. Numerous food stalls were also arranged on campus. The day concluded with musical performances by students and a breathtaking show of fireworks as the campus finally breathed again.



SEECs Students Win Poster Competition

The first position was bagged by SEECs students in the IEEE International Conference on Digital Futures and Informative Technologies for their poster carrying a sensational solution to provide smart livestock monitoring and management. The group of students consisted of Mr Usman Siddiqui, Mr Abdul Aziz Chaudhary, Mr Syed Hassaan Muzammil who were supervised by Dr Rafia Mumtaz and Dr Ali Tahir.



MCE Cricket Team emerges as champions

A team from MCE participated in the intra-NUST Cricket Championship conducted at H-12 in November 2021. MCE team led by Syed Haider Shah played against the team of MCS and won by 49 runs to lift trophy for the year 2021. Chief Instructor MCS conducted the closing ceremony of the championship and distributed the trophies.



NUST Orientation Week 2021

NUST Orientation Week has become a flagship event of NUST. Orientation spans over 5 days where freshmen familiarise themselves with the culture of NUST. Freshmen along with their parents were welcomed on the campus on Day 1, students were briefed about their respective schools and Q&A sessions were held. Day 2 started with several icebreaking activities and briefings about the campus, the clubs, and the societies in the Jinnah Auditorium. The remaining three days were packed with fun activities, the students visited the schools of NUST, and the clubs and societies had planned several icebreakers as well. The event was wrapped up with a concert by Bayaan and Mustafa Zahid.



Certified SOLIDWORKS Mechanical Design Expert

Ali Saim, student of DE-39 Mechanical, was awarded an "Expert" level certificate by CEO of SOLIDWORKS on May 21, 2021.



ALUMNI AFFAIRS|07



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“The Learning Continues!” - Webinar Series

NUST Alumni successfully conducted a series of informative webinars and online workshops including “Road Map to Direct Admissions in the USA” on January 30, 2021, “An Introductory Guide to Study in Canada” on February 18, 2021. Furthermore, “Meet Fulbright Aspirants” took place on April 1, 2021. Several other sessions including “Landing your first gig and building a career” was held on May 26, 2021, “How to write Research Proposals” took place on June 20, 2021, “Agile Approach to Project Management” took place on July 31, 2021, “Made in Pakistan” session was arranged on August 4, 2021. 2 webinars were held regarding “Free Coaching by Accomplished Alumni to Pursue Graduate Studies in USA” on September 18, 2021, and October 17, 2021, respectively.



NAA Lahore Chapter Meetup

President NUST Alumni Association, Dr Sohail Sarwar, along with senior governing board members of the NUST Alumni Association (NAA) graced the NAA Lahore Chapter meetup at DeSOM, Lahore on January 28, 2021. Mr Sarwar thanked all the participants and apprised them of NAA updates and its future layout.

Meanwhile The NAA General Council members residing in Lahore arranged a get-together with the Advancement Team on February 9, 2021. VP Engagement NAA along with 6 association members discussed the various initiatives they are taking in, managing, and administering the Lahore Chapter.



NAA Delegation Visits Akhuwat Foundation

A delegation of NAA General Council, led by President NAA, Dr Sohail Sarwar, visited Akhuwat College University, Kasur, on Dr Muhammad Amjad Saqib's invitation who is the Advisor Philanthropy NAA and Executive Director Akhuwat Foundation on January 29, 2021. The council members vowed to collaborate to promote the idea of educational "muwakhat." NAA pledged a token of 200 bricks for the construction of the Akhuwat university campus.



PNEC-AA to collaborate for Research and Innovation Initiatives of NUST

President of NUST PNEC AA, Rear Admiral (Retd) Imdad Jafri, and Vice President Placement Mr Faisal Khalid met Pro-Rector RIC, Rear Admiral Dr Nassar Ikram on March 3, 2021. UAO Executive Karachi, Mr Junaid Faizi, and Industrial Liaison Officer Karachi, Mr Danish, also attended the event. They discussed how PNEC can play a supporting role in NUST's research and innovation initiatives.





▲ The PNEC AA held a get-together for NUST alumni in Karachi at the Services Mess on March 19, 2021. The event had a great turn out as many alumni showed up and celebrated the reunion.



▲ Rear Admiral (Retd) Imdad Jafri, President of PNEC AA hosted the UAO team. From PNEC AA; Mr Azam Rashidi, VP Research of PNEC AA, Mr Faisal Khalid, VP Placement of PNEC AA and from UAO; Ms Maria Qadri, Director, Ms Sana Muneer, Assistant Manager Creative, Ms Minahil Toor, Assistant Manager Prospects, and Mr Junaid Faizi, Executive UAO Karachi, joined the meetup.



◀ A meetup of alumni residing in Rawalpindi/Islamabad was arranged at Blue Lagoon, Rawalpindi on July 30, 2021, which was attended by 34 alumni.



▲ A meetup of MCE & SCEE alumni residing in Rawalpindi/Islamabad was arranged at Askari Club, Askari 14, Rawalpindi on July 31, 2021, which was attended by 35 Alumni.



▲ A meetup of alumni residing in Lahore was arranged at DeSom, Lahore on July 31, 2021. A total of 51 participants attended the meetup.



◀ S³H Alumni Association has hosted a virtual meetup of its alumni. 20+ alumni have attended the meetup and were introduced to the S³H AA's executive council and the details of official forums to communicate with the community.

NAA Plantation Drive at NUST Islamabad Campus

NAA led a plantation drive at NUST Islamabad campus on September 20, 2021. Dr Osman Hasan, Pro-Rector (Acad) graced the occasion with his presence. Dr Sohail, President NAA, and members from NBS, CAE, EME, MCS, RIMMS, RCMS, SCEE, SCME, SMME, SNS, and SEECS planted the trees.



CEME AA Tree Plantation Drive

CEME AA conducted a plantation drive at NUST CEME on September 28, 2021. Among others Commandant CEME NUST, President NAA, VP Engagement NAA, and VP Engagement EME Alumni Association planted tree saplings during the drive.



Alumni Meetup Peshawar

NUST AA organised a meet-up in Peshawar at Army Officers Mess on November 27, 2021. The meet-up was honored by Commandant MCE, Risalpur, Brig Bilal Mustafa Bajwa, and Deputy Dean MCE Brig Dr Sarfraz Ahmad, President NAA Dr Sohail Sarwar, and President MCE AA Brig (Retd) Fahim Akram.



Eid-ul-Adha Brunch, San Francisco USA

A brunch was hosted by the NUSTian USA for the alumni based in San Francisco, USA on August 1, 2021, to celebrate Eid ul Adha. A total of 25 alumni attended the event.

Pakistan's Independence Day Celebration - Canada

NUST Alumni based in Mississauga, Canada gathered together and celebrated Independence Day with the Pakistani community.

Alumni Meetup - Atlanta, USA

A meetup of alumni based in Atlanta was hosted on September 12, 2021, for a discussion on future Atlanta, chapter USA engagement activities. A total of 5 alumni attended the meetup.



Free Medical Camp in KSA

The NAA KSA chapter collaborated with Pakistan Embassy and PDGR to conduct a free medical camp to facilitate around 1000 patients on October 18, 2021. The medical camp received 100+ doctors, covering 24 specialties to provide free consultancy, tests, medicines, and referrals to 500+ patients.



Alumni Meetup - California

A meetup of NUST Alumni in Redwood, USA was arranged as a part of NUSTian USA engagement activities to mentor the alumni who have moved to the city, which was attended by 13 Alumni.



Alumni Meetup - San Francisco

NUSTian USA has arranged a get-together for alumni based in Silicon Valley on November 7, 2021. It was attended by 120+ NUST Alumni and Pakistani diaspora including a representative from Pakistani Women in Computing, OPEN SV, PakLaunch, iCoreGuru, National Incubation Centre, Podium VC, and alumni from other universities including LUMS, FAST, UET, NED and GIKI.

Alumni Meetup - Riyadh

KSA chapter organised a meet-up of alumni based in KSA on November 20, 2021.

Alumni Meetup - Chicago, USA

A meetup of alumni based in Chicago was hosted on August 28, 2021, to bid farewell to President NUSTian USA (Alumni Chapter). A total of 17 participants were present.

Two NUST Alumni Ranked 2nd in FeTS 2021

Mr Irfan Khan, CEME '05, and Dr Suleiman Khan, CEME '07 have been ranked second in the global Artificial Intelligence competition Federated Tumour Segmentation (FeTS) 2021. A total of 125 teams from all over the world participated in the competition.

Alumni in the Spotlight

Dr Raheel Nawaz

Dr Raheel Nawaz is an alumnus from NUST MCS. Having done his Bachelor's in Electrical (Telecom) Engineering (1999) and MS in the same discipline (2001), Dr Nawaz is one of the institution's most celebrated alumni. Dr Nawaz has been declared one of the 6 finalists shortlisted from 982 nominees for the Leadership Award of MMU, UK. He has also been awarded the PFHEA, which is the highest recognition of pedagogical credentials in the International Higher Education sector. With this latest honour, he is now one of over 200 Higher Education Academy Principal Fellows in the UK and the first-ever in his faculty.



Ms Aqsa Ajmal

Ms Aqsa Ajmal is an Industrial Design graduate from NUST SADA Class of 2019 who was nominated as the "Pride of Pakistan" for the Pakistan Day Parade. Ms Aqsa was invited to the event for representing Pakistan, as a finalist, at the Lexus Design Award 2020 - an international design competition that calls upon young creative talent around the world to "Design for a Better Tomorrow." She became the first, and so far, the only Pakistani, having achieved this milestone, for her phenomenal project 'Pursewit' - a sewing machine exclusively designed for visually impaired people with low-income backgrounds. The machine is embedded with special features that allows differently-abled individuals to operate it hassle-free.



Mr Ussama Zahid

Mr Ussama Zahid, an alumnus of the NUST SEecs Class of 2019, has made NUST proud by bagging the first position in the "Adaptive Computing Developer Contest 2020" in the "Adaptive Intelligence of Things" category. The first-ever contest was organised by tech giant "Xilinx Inc." in collaboration with Hackster.io.



Raising USD 2.7 Million through Walee

Mr Muhammad Ahsan Tahir, an alumnus of SEecs '14 has raised USD 2.7 million in seed funding through his start-up 'Walee' partnering with Z2C Limited Communications. Walee is an Islamabad-based marketing platform with modern influencer-marketing campaigns and effective social listening tools as its essential features. The platform has over 50,000 influencers with a combined reach of 100 million followers and has registered more than 5,000 brands to date.



NUSTians top list of Erasmus Mundus Awardees from Pakistan

NUST has the honour of having the largest number of students selected for the Erasmus Mundus Scholarship from Pakistan. NUST stands on top securing 32 out of 56 seats for the fully funded and prestigious scholarship award granted to international students to study abroad.



NUSTians ON TOP - CSS Champions

NUST's brilliant alumni appeared in the CSS Competitive Examination 2020 and aced it with flying colours, yet again making us all immensely proud. Among the selected candidates, our stars stand as follows:

Name	NUST Department	Allocated Department
Yasir Nazir	SMME	Pakistan Administrative Service (PAS)
Fahad Shabbir Cheema	MCE	PAS
Muhammad Faizan Zafar	NICE - SCEE	PAS
Babur Ali	CEME	PAS
Rana Muhammad Sohaib Khalid	CEME	Foreign Service of Pakistan (FSP)
Hamid Imtiaz	NICE-SCEE	Police Service of Pakistan (PSP)
Muhammad Saad Bin Ubaid	CEME	PSP
Ibrahim Mirza	NBS	FSP
Osama Dastgir Malik	SEECs	Pakistan Custom Service (PCS)
Naimat Rasool	MCE	Inland Revenue Service (IRS)
Fatima tuz Zahra Khan	ASAB	IRS
Anza Abbasi	S3H	PAS
Waqar Younis	SMME	FSP
Akhtar Amin	NBS	PCS
Ibrahim Bajwa	CEME	Railways Commercial & Transport Group (RCTG)
Kamil Mushtaq	NICE-SCEE	PSP
Atif Naveed	SEECs	Postal Group
Muhammed Hamza Nazir	S3H	IRS
Majeed Ullah	NICE-SCEE	FSP
Mohammad Shaaz	SCME	FSP
Fahd Zia	SEECs	IRS
Salimullah Khan Ayubi	IESE-SCEE	Pakistan Audit & Accounts Service (PAAS)
Syed Usama Muthahir	SMME	PCS
Adeel Ali	PNEC	PAAS



Elections of KSA Chapter

The first general elections for the new governing body of the KSA chapter alumni association were announced. President, Haroon Raees, Solution Architect, CISCO Systems and, Vice President, Amir Zaman (MCS), Customer Experience & Analytics Consultant, STC were congratulated on assuming the office bearer roles of the KSA chapter.



Rector NUST Addresses Alumni from International Chapters

The introductory meeting of Engr Javed Bukhari, Rector NUST, with NUST alumni regional representatives and NAA office bearers was held on March 18, 2021. Rector NUST appreciated NUST alumni for their determination and exemplary performance as influencers, change makers, and leaders, terming them as torchbearers of the brand of NUST throughout Pakistan and across the globe. The session was attended by NAA Governing Board, active alumni from regional nodes including the USA, Canada, KSA, Europe, Australia, and the Middle East.



Pro-Rector RIC NUST Meets Team NUSTian USA

An introductory meeting of NUSTian USA with Pro-Rector RIC, Dr Rizwan Riaz, was held on June 10, 2021. The meeting was attended by the newly elected Executive Council and the current Executive Council of the alumni chapter, and the NUST University Advancement Team. President NUSTian USA, Mr Ahsan Rehman (SEECs '12), Data Scientist at IBM, shared a brief presentation introducing NUSTian USA officeholders and highlighting the purpose and mission of the chapter. Pro-Rector RIC, Dr Rizwan Riaz, in his remarks, discussed multiple areas of possible collaborative opportunities including more active involvement of alumni in the NUST incubation setup, mentoring start-ups, setting up of VC funds, etc.

NUSTian (NUST-US Technology, Industry, and Academic Network) is a community of 700+ NUST alumni members in the USA, registered as a not-for-profit 501 c 3 under US regulations, working for the benefit of alumni in the US as well as the students at NUST.

Homecoming

Mr Asim Iqbal

Mr Asim Iqbal (CEME '93) Director CSS Academy Lahore, visited NUST and made a stopover at NSTP on February 19, 2021. Our alumnus was amazed to see how much the institution has grown in a mere 30 years. He was then taken for a visit to his college, CEME, where he met with the faculty and officers and recollected fond memories of his time in the same rooms.



Dr Shehla

Dr Shehla (MCS '03), Wi-Fi Software Engineer at Apple Inc. in Mountain View California, USA visited NUST on August 17, 2021. During the visit, she met with Dr Rizwan Riaz, Pro-Rector (RIC), and multiple areas of collaboration were discussed. She also visited NICHE, and NSTP where she interacted with women leaders of start-ups and a few other companies.



Mr Zeeshan Qureshi

Mr Zeeshan Qureshi, an alum of SEecs '03, came for a visit to NUST on February 11, 2021. He is currently working as a chief marketing officer at Q-Mobile, Pakistan. Meeting with representatives from the NUST Alumni Office, Mr Zeeshan enthusiastically shared his hopes for exploring new avenues of engagement for current students and graduated alumni of NUST.



Dr Mohsin Ali

Mr Mohsin Ali (MCS '99) Director of Business Development, IOTA Solutions visited NUST on August 25, 2021. During the visit, he met with Ms Maria Qadri, Director UAO, and the Alumni Office team where possible areas of collaboration were discussed.

NUSTian USA - Alumni Chapter takes Lead in Giving!

NUSTian USA is a chapter that works for the benefit of our alumni in the US as well as current students at NUST-Pakistan. NUSTIAN has now an active data of more than 800 alumni who are currently based in the USA.



“FOREVER IN OUR HEARTS” Gone but Never Forgotten

In the year 2021, some of our very dear alumni members left for their final abode. Let us pray for the beloved, departed souls and their families as we remember them:

Mr Umer Ahsan

CEME Class of 2005 (DE-23)
January 17, 2021.

Ms Areeba Tahir

SEECs Class of 2018
January 18, 2021.

Mr Nasir Iqbal Swati

CEME Class of 2002 (DE-20)
January 24, 2021.

Mr Muhammad Athar

CEME Class of 2015
March 24, 2021.

Mr Nauman Ur Rehman

CEME Class of 2019
March 16, 2021.

Mr Ghulam Hassan Shami

SEECs Class of 2012
May 03, 2021.

Dr Lozina Shoaib

SEECs Class of 2018
April 09, 2021.

Dr Muhammad Arshad

ASAB Class of 2010
April 03, 2021.

Mr Taimur Ahmed

S3H Class of 2019
May 23, 2021.

Mr Nouman Afzal Afridi

SCEE'00
September 15, 2021.

Mr Saad Tayyab

SCEE Class of 2021
November 22, 2021.

Mr Fazal Haq

SCEE Class of 2017
November 22, 2021.

Five permanent endowment seats established

Setting a benchmark for alumni support for NEED Initiative, NUSTian USA Chapter has established 5 permanent endowment scholarships at NUST, which will support many students as long as they pursue their higher education at NUST. Behind this effort is a group of highly dedicated and committed alumni in the USA who have shown an outstanding spirit of philanthropy. NUSTian USA has always been at forefront of this initiative and with their contributions, they are already supporting 137+ students via zakat, 7 scholarship endowment seats created by NUSTian, and 3 donors created permanent seats at NUST.



NUSTian Coaching

NUSTian USA provides targeted coaching to help current NUST students and alumni pursue admissions to graduate school in the US/CA.

More details can be found at: <https://nustianusa.org/coaching/>

NUSTian USA is a Matching Fund Partner to the following organizations:


- ADP
- Apple
- Baker Hughes
- Broadcom
- Cambia
- Carrier
- Google
- Hewlett Packard Enterprise Foundation
- IBM
- Intel Foundation
- KLA Foundation
- Lenovo
- Mastercard
- Ericsson Community
- Microsoft
- Netflix
- NVIDIA
- QUALCOMM
- T-Mobile
- Verizon
- VMware Foundation



NUSTIAN



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