

NUST ANNUAL SDGs REPORT 2021







1.0

NUST SDGs Engagement Plan

NUST embarked upon the journey of SDGs engagement with one core mission in hand: “map, align, measure, restructure, redesign, monitor and collaborate”. NUST initiated the SDGs Engagement program in 2018 and so far, has achieved remarkable progress that has been appreciated both at home and internationally, having been duly acknowledged. We continue our upward journey towards greater adoption of SDGs in all of our core functions.

UN SDGs is a universal, comprehensive, and inclusive framework for development which addresses the needs of all forms of life existing on this planet. With 17 goals, 169 targets, and 232 indicators included in the Development Agenda 2030, UN SDGs provide an elaborate masterplan for all organizations to adopt sustainability as the key element in their long-term strategy.

Pakistan being an initial signatory of UN SDGs, is obligated to meet the 2030 agenda and report annually on its progress to the United Nations. In order to fulfil that obligation, organizations especially HEIs, must make SDGs an integral part of their strategy to assist in achieving the national commitment.

Realizing the importance of UN SDGs, NUST has adopted the requisite framework to become what is termed internationally as a “SDGs-engaged University”. NUST also strategically aligned all of the following university core functions with UN SDGs:

Realizing the importance of UN SDGs, NUST has adopted the requisite framework to become what is termed internationally as a “SDGs-engaged University”. NUST also strategically aligned all of the following university core functions with UN SDGs:



NUST also submitted SDGs-related credentials in the internationally claimed Times Higher Education (THE) Impact Ranking for 2019, 2020, 2021 and 2022.

1.1

THE IMPACT RANKINGS

Global: NUST Ranked Overall TOP 200

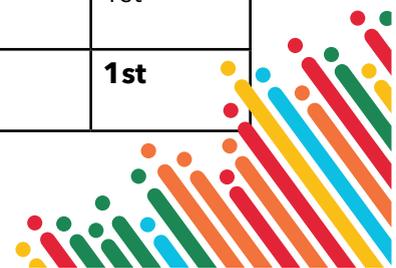
No. 4 Globally in SDG 7: Affordable and Clean Energy

National: NUST Ranked No. 1

No. of SDGs that NUST Participated in: 17

SDG No. & Description	World Rank 2019	World Rank 2020	World Rank 2021	World Rank 2022	Domestic Rank 2021	Domestic Rank 2022
SDG 1: No Poverty		201-300	401+	201-300	4th	5th
SDG 2: Zero Hunger		201+	301-400	301-400	3rd	4th
SDG 3: Good Health and Well being		401-600	601-800	801-1000	4th	7th
SDG 4: Quality Education	101-200	70	101-200	101-200	2nd	4th
SDG 5: Gender Equality	201-300	201-300	401-600	401-600	6th	6th
SDG 6: Clean Water and Sanitation		201-300	101-200	101-200	1st	1st
SDG 7: Affordable and Clean Energy		101-200	67	4	1st	1st
SDG 8: Decent Work and Economic Growth		101-200	201-300	201-300	2nd	2nd

SDG No. & Description	World Rank 2019	World Rank 2020	World Rank 2021	World Rank 2022	Domestic Rank 2021	Domestic Rank 2022
SDG 9: Industry, Innovation and Infrastructure	101-200	101-200	201-300	201-300	1st	1st
SDG 10: Reduced Inequalities		301-400	401-600	401-600	3rd	3rd
SDG 11: Sustainable Cities and Communities		301-400	401-600	301-400	2nd	1st
SDG 12: Responsible Consumption and Production		78	101-200	67	1st	1st
SDG 13: Climate Action		301+	201-300	201-300	2nd	4th
SDG 14: Life below Water		201+	201-300	62	1st	1st
SDG 15: Life on Land		201+	201-300	101-200	2nd	1st
SDG 16: Peace, Justice and Strong Institutions		301-400	401-600	401-600	1st	2nd
SDG 17: Partnership for the Goals	300+	101-200	201-300	201-300	1st	1st
Overall	300+	201-300	201-300	101-200	1st	1st



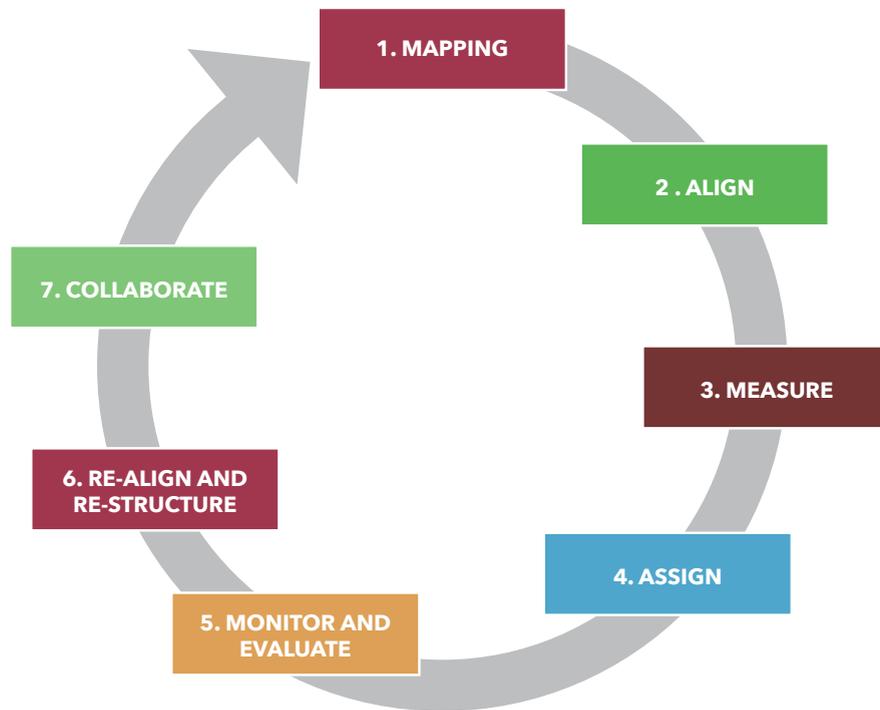
1.2

NUST: An SDG-Engaged University

Highlights of the NUST SDGs transformation in the last few years, along with the organizational commitment, details on SDGs related initiatives and activities will be covered thoroughly in this report, listed as per SDG.

“NUST: an SDG-engaged University” has been:

- Published in International Conference on Sustainable Development 2021 (ICSD2021) by Sustainable Development Solutions Network (SDSN) and the most viewed resource on SDSN website
- Featured in International Association of Universities Horizons 2021 December Edition



a. Mapping:

As the first step, we performed an analysis of our research and innovation portfolio, curricula and all operations within NUST as well as an analysis of internal capabilities and resources in implementing SDGs. An extensive mapping was conducted, spanning over more than seven months of extensive work:

2000+ research projects mapped

10000+ publications mapped

700+ patents mapped

Key activities of 20 administrative offices of NUST mapped with SDGs.

Activities of 18+ schools/departments, programs, and courses mapped with SDGs

Startup competitions, community clubs services, and events mapped with SDGs

b. Align:

The university's core functions were aligned with the respective SDGs targets and eventually the 17 goals, by disaggregating national level targets and KPIs of SDGs framework into relevant achievable milestones and KPIs for appropriate alignment with the academic core functions.

c. Measure:

“What gets measured is what gets improved”.

Although there are 232 SDGs Framework KPIs, 69 Targets and 17 Goals at national levels, indicators for organizations can be variable according to the type and the sector of the organization. Therefore, for a higher education institute, the KPIs selected were only those pertinent to the deliverables of a university in the context of youth and students' engagement, research and innovation and green campus initiatives.

Measure only relevant KPIs

The choice of measuring KPIs has to be made very carefully as the right KPIs will set the focus of the university/organization in their strategy and plan for SDGs alignment. Other important reasons why KPI selection is crucial is because:

- Cost of measuring KPIs are very high
- Not all KPIs are relevant to the organization and its core strategy/functions
- Wrong choice of KPIs can lead to misleading outcomes and inadequate performance, and eventually affect the results
- Only KPIs relevant to NUST Internal Domains and Stakeholders need to be selected

NUST adopted a set of 250+ KPIs, under four different domains which were selected on the basis of relevance to the organization and its long-term strategic goals and modes of operations:

d. Assign:

Once the set of KPIs were selected, these KPIs were assigned to 20+ administrative offices and relevant schools/ colleges of NUST. A dedicated online portal, "NUST SDGs Portal" has been developed to track and measure the performance and impact of the organization in terms of SDGs.

Several internal sessions were held with the stakeholders to brief them on SDGs framework, KPIs assignment, reporting methodology and usage of the portal. They were also briefed on setting targets, devising plans and policy amendments to improve on these KPIs.

e. Monitor and Evaluate:

To formulate a better SDG implementation strategy, we need to understand where action is needed. Tools to gather, present and disseminate SDG data are key to ensuring their extensive and effective use by policymakers. Reporting and dissemination platforms for SDGs are indispensable to policymakers and, indeed, to all stakeholders for understanding where progress is being made and informing future interventions. Data must be:

- Accessible
- Publicly available
- Relevant
- Easily visualized and lastly,
- Analyzed - to those who want or need to use it.

The monitoring and evaluation on the progress against the KPIs is being conducted through the SDGs Portal, on which a dedicated dashboard to monitor performances by offices as well as overall performance by SDGs has been developed, which provides us a birds' eye view of

the organization's standing in terms of SDGs.

f. Re-align and Re-structure:

The plan also considers re-alignment and re-structuring. Once the cycle is over, and the KPIs are re-aligned with new initiatives, new technologies or programs can begin at the university. The process is a continuous improvement cycle and does not halt at the end of a year but takes continuous efforts to improve and re-align on the assigned KPIs. New policies, strategies and initiatives must be introduced for complete re-alignment and re-structuring in accordance with the SDGs.

g. Collaborate:

We use "systems thinking" to implement SDGs, which give us a framework for assessing the whole picture and understanding complex dynamics and interdependencies. Systems thinking is based on a collaborative model instead of working in silos and identifies "Key Leverage Points" within a system.

For NUST, it means operating on three levels:

- Joining up with others' efforts to achieve individual goals
- Looking at the inter-relationships between all the goals
- Delivering the goals in a way that models the characteristics we need for a sustainable society.

NUST not only held various collaborative and interactive sessions to engage internal stakeholders from more than 20 offices and schools of NUST, to work towards a unified goal of SDGs alignment, but also established cross-sectoral partnerships and international memberships for the cause.



2.0

NUST Millennium Fellows Class of 2021

The Millennium Campus Network (MCN) and the United Nations Academic Impact (UNAI) announce the Millennium Fellowship Class of 2021, an ambitious program aimed at assisting in the implementation of the Sustainable Development Goals and UNAI ideals. The Millennium Fellows Class of 2021 was chosen from a record-breaking 25,501 candidates from over 2,200 campuses in 153 countries.

25+ students from various schools of NUST were selected in Millennium Fellowship for the class of 2021 and engaged in different projects aiming to accomplish the UN Sustainable Development Goals.

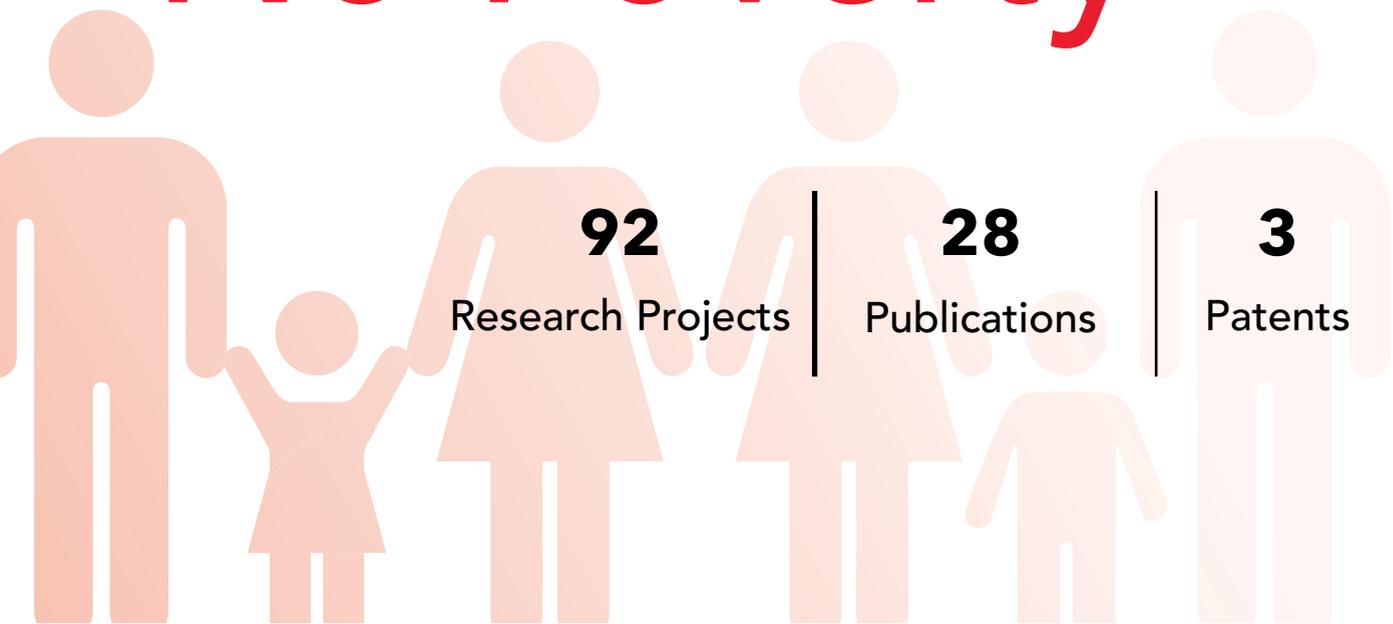


Millennium Fellows are university undergraduates selected on the basis of their leadership skills on sustainable development-related projects that advance the SDGs in their communities. The Class of 2021 executed these projects vigorously, collectively advancing all 17 Sustainable Development Goals and all 10 UNAI Principles.



GOAL 1

No Poverty



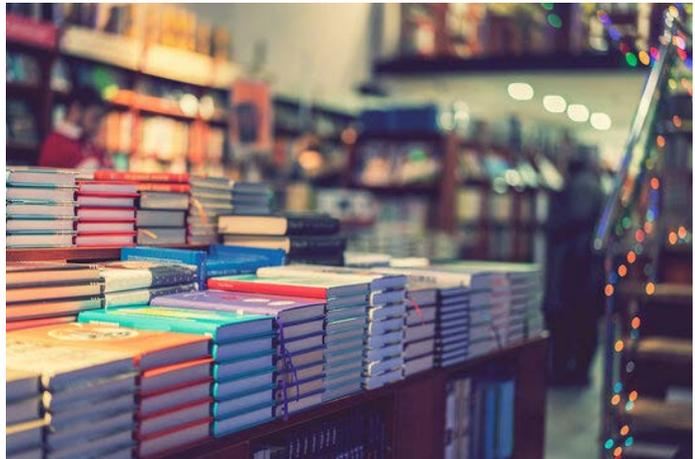
First-Generation Students

NUST has around 30% of first-generation students, i.e., whose parents were never enrolled for higher education. Such a large proportion of students at the campus speaks of our contribution towards bringing out an increasing number of families from poverty.

NEED Initiative

1,662 students studying on NEED-based scholarships, 127 free seats

NUST aims to be a need-blind university, affording education to all those who make it to the university on merit. In this respect, NUST looks after the financial needs of the students from underprivileged and underrepresented groups from all across the country, through partnerships with NUST alumni, private donors, and government agencies for funding. More than 1,600 students are studying on need-based scholarships in NUST since 2015, and 127 of the targeted 400 seats have been made free for scholars through a permanent endowment. NUST has more than 600 partners and donors on board.



Establishment of Kashir Asghar Endowment Fund

In the loving memory of Mr. Kashir Asghar, former Rector NUST and father of Mr. Kashir, one of prominent NUST faculty member, 'Kashir Asghar Endowment Fund' has been established at NUST. Kashir was one of the most celebrated members of the NUST family, always positive and full of energy. This fund was established to support financially challenged students at NUST in pursuit of their education. Every life transformed through 'Kashir Asghar Endowment Fund' will be a tribute to his legacy.

Self-Generated Need-Based Scholarships for Energy Students

USPCAS-E, UAO (University Advancement Office), and FAO (Financial Aid Office) NUST jointly formulated a scholarship agreement for deserving students at the center from the self-generated endowment fund. As per the agreement, 6x needs-based/merit-based endowment scholarship seats will be generated on a circular model with 2x students immediately benefiting from the scholarship seats in the upcoming intake. Therefore, the new spring 2022 intake of USPCAS-E will benefit from scholarships created by the center's own endowment returns. USPCAS-E strives to increase the size of the center's endowment so as to increase the number of scholar seats for deserving students.



NUST Inks a Partnership Agreement with Tufail Group for the NUST Endowment for Educational Development

NUST entered a Memorandum of Understanding (MoU) with Tufail Group, one of the leading Industrial Chemical Manufacturers of Pakistan. The MoU formalizes the existing partnership with the Tufail Group on the NUST Endowment for Educational Development program. This initiative is a nation-building strive of NUST to ensure that no student at the University leaves due to any financial constraints. With a 4% acceptance rate at NUST, as many as 61% of students hail from lower-middle-income strata of the society. The MoU also envisaged a collaborative arrangement on R&D projects, executive training programs, management training programs, and other avenues of strengthening academia-industrial linkages.





GOAL 2

Zero Hunger

41

Research Projects

166

Publications

16

Patents

Focus Group Discussion on Agri Sector

BHOOK is a project by one of the Millennium Several faculty members at NUST engaged in agriculture projects were requested to deliberate on addressing the current pressing needs of the agriculture sector of Pakistan. A committee of these relevant agriculture experts from ASAB, CEME, NBS, and SCEE, was formulated based on their core areas, delineating all the key sub-sectors of Pakistan agriculture eco-system (farming segment)

including:

Biotechnology and plant sciences

- Agri-technologies
- Remote sensing
- Agri-management, logistics, and supply chain
- Argo-chemicals and fertilizers

After several formal sessions with the committee members, a comprehensive framework was drafted to demarcate on the following most relevant aspects:

- Existing challenges
- Proposed solutions
- How NUST can contribute to solutions
- Recommendation and resources required for the solutions
- Potential collaborations and partnerships



Agriculture Department and NUST Formalising their Mutual Efforts in Making Farming Techniques More Robust

NUST signed a Letter of Intent (LOI) with Agriculture Department Punjab and highlighted the key attributes of their ongoing projects that demand technology pertaining to agriculture and water conservation. There is an aim to build multiple technology centres to keep a check on weather and soil conditions, and NUST and the Agriculture Department will conduct R&D on collaborative grounds. The ultimate purpose is to advise farmers in maintaining suitable moisture levels.





3 GOOD HEALTH
AND WELL-BEING



GOAL 3

Good Health and Wellbeing

92

Research Projects

1062

Publications

218

Patents

NUST Medical Centre

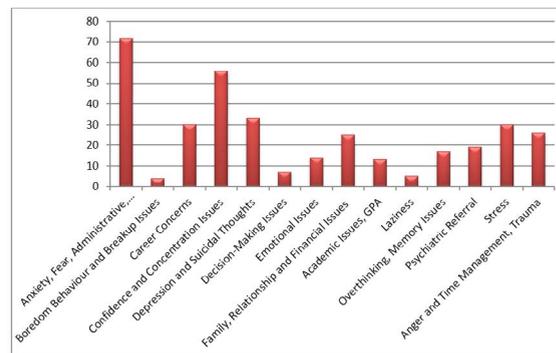
On-campus medical facilities for students and staff is the most important service a university must provide to ensure the health and well-being of its employees and students. NUST Medical Centre provides health services, including **24/7 outpatient medical care for students and staff completely free of cost for everyone on campus.** It also arranges inpatient medical cover in affiliated hospitals, while promoting activities for general wellbeing of NUST community.



The medical center consists of at least two on-duty medical officers, nurses, staff and round the clock emergency health-care services with ambulances. These free of cost medical facilities are available on all the seven campuses of NUST all over Pakistan. Other than these facilities, health insurance for staff and students has also been provided through subsidized insurance packages.

Mental Health Care at NUST: Centre for Counselling and Career Advisory (C3A)

NUST takes the mental and physical well-being of its staff and students very seriously. Centre for Counselling and Career Advisory (C3A) is a unit of NUST that provides primary mental health services. NUST is the only university in Pakistan offering this service, which extends to all the NUST students, faculty, personnel and families of those associated, within and outside the H-12 campus. The core objective of C3A is to provide



professional counselling service, for educational, social, emotional or psychological issues that may inhibit personal or professional performance and advancement. The centre also conducts psychological tests for the students of all the schools of NUST uniformly. The purpose of these activities is to provide psychological support as well as to meet the growing need of the university to promote the wellbeing and personal development of all associated. C3A consists of a professional staff of qualified psychologists/ counsellors who provide short-term individual and group therapy. In 2021 C3A has provided professional counselling services to 351 students for psychological issues that may inhibit their personal or professional performance and advancement.

N-ovative Health Technologies (NHT)

N-ovative Health Technologies (NHT) is Pakistan's first facility for indigenous manufacturing of cardiac stents, angioplasty balloon catheters and other life-supporting medical devices at the National University of Sciences & Technology's (NUST) Islamabad campus. With the establishment of NHT, Pakistan has become the 18th country in the world, and second Muslim country in the world after Turkey, to have its own facility for cardiac stent production. As per the World Health Organization (WHO), Pakistan stands 18th in the world to have maximum deaths per year due to coronary diseases and falls in the Red Alert Zone. This precarious situation is largely due to exorbitant prices of imported cardiac implants, which over 80 percent patients find inaccessible. The establishment of NHT not only brings quality stents within the reach of these patients, but also saves huge sums of foreign exchange every year for the national exchequer. NHT is an ISO 13485: 2016 certified facility accredited by European Commission Notified Body and approved by Drug Regulatory of Pakistan (DRAP). To begin with, NHT has launched three of its major products, including REJUVENATE - Bare Metal Stents (BMS), N-DEAVOUR - Drug Eluting Stents (DES), and VASOGLIDE - PTCA Balloon Catheters. NHT has also made another phenomenal breakthrough by manufacturing "N-SAVIOUR," a ventilator system against the backdrop of COVID-19, which will be used to treat patients with chronic respiratory issues.

Blood Donation Drive at PNEC 2021

Education and Community Service Society (ECSS) is a student-based society at NUST-Pakistan Navy Engineering College Karachi. On 4-5 October 2021, ECSS in collaboration with College Sickbay and Indus Hospital Karachi arranged a Blood Donation Drive for day scholars and boarding students separately. Student activity was carried out while following COVID-19 SOPs. Response of students was overwhelming for this noble cause.



NUST Signs MOA with Scotmann Pharmaceuticals

NUST Atta ur Rahman School of Applied Biosciences (ASAB) and Scotmann Pharmaceuticals, Inc. signed a Memorandum of Agreement (MoA) at NUST, H-12 campus, Islamabad aiming to engage the applied biosciences students. Scotmann Pharma has extended its support for joint projects and research activities at NUST and offered to provide the students with internship opportunities as well. This partnership is of great significance for the applied biosciences students allowing them to interact with a leading pharmaceutical industry of the country for guidance, mentorship, and hands-on experience in their relevant fields.



NUST Signs MOA with Precision Medicine Lab (PML)

NUST and Precision Medicine Lab (PML) signed a Memorandum of Agreement (MoA) to facilitate PML in acquiring human resource from NUST. Both sides agreed to work together on joint research projects that would help in resolving the key issues of the industry and improving industrial efficiency. Both sides would offer jobs for NUST graduates, as and when relevant vacancies are created in/for the partner organizations, and NUST to facilitate the partner organizations in all recruitment related activities for NUST students and graduates, this would include on-campus recruitment drives, job fairs, seminars, workshop, trainings, events, as well as providing support in finding a suitable candidate by providing graduate profiles of the students.





4 QUALITY EDUCATION



GOAL 4

Quality Education

14

Research Projects

1455

Publications

17

Patents

NUST Academic Programmes

18,012 current students, 133 academic programs, 19 constituent schools & colleges, 7 campuses in 5 cities, QS Asia University Rankings 2023, NUST ranked 334th in world & 1st in Pakistan

NUST offers top-notch education with a comprehensive curriculum of 30 UG, 61 Masters and 42 Ph.D. programs, offered in 19 different schools and colleges, all over Pakistan. NUST has an enrollment of 18k students and boasts of a competitive pool of 1262 faculty members out of which 50% are Ph.D. qualified. NUST is the top university of Engineering and Technology in Pakistan, and 334th in the world according to QS World University Rankings 2023.

NUST Outreach Programme

Admissions Directorate conducts awareness sessions (both in online and face to face mode) all over Pakistan in order to reach out prospective candidates and guide them regarding NUST, Undergraduate Admissions Process, NUST Need Based Scholarship (NNBS) program and incentives offered to students during their stay at NUST as well as the market placement opportunities etc.

Despite COVID situation in year 2021, this directorate managed to conduct sessions in 16 cities of Pakistan including Faisalabad, Gujranwala, Bahawalpur, Mailsi and Quetta. Out of total 30 institutions, 19 were co-education and 6 were girls' colleges.



Education for Sustainable Development (ESD) at NUST

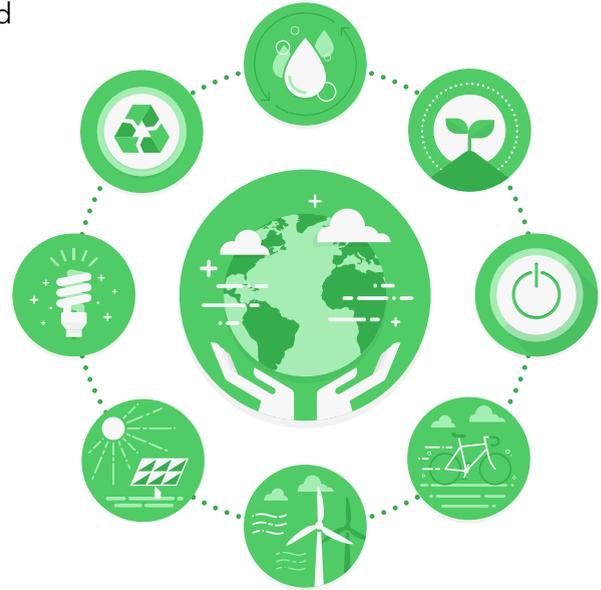
Aligned with the university's strategic objective of becoming SDGs-engaged, NUST has incorporated Education for Sustainable Development in the mandatory Community Service Course as per the university best practices from across the globe.

Therefore, through the mandatory Community Service Course (CSL-01), NUST has now formalized and recognized the Education for Sustainable Development as a mandatory module in the CSL as per the strategic objective of the university to introduce students to basics of the Sustainable Development and inculcate a sense of ownership and responsibility as future leadership of the country.



A total of **777** courses on sustainability are offered in NUST such as:

- Sustainable Design
- Material and Construction
- Transportation Engineering
- Solar Thermal Power Systems
- Energy and Climate Change
- Environmental Science for Sustainable Development
- Cleaner Production Techniques
- Ecological Management
- Solid and Hazardous Waste Management
- Wastewater Treatment and Design
- Environmental Health and Safety



For facilitating NUST valuable students in their projects, appreciable funds are provided by the Higher Education Commission (HEC) of Pakistan and other local foundations and Non-Government Organizations such as National Cleaner Production Centre (NCPC), World Wildlife Fund for Nature (WWF) and WaterAid Pakistan (WAP). Out of all the funding provided, more than 30% are accounted for projects on sustainability. Along with funding, partnerships with industries, public sector bodies, and social sectors help to align SDGs implementation strategies across national levels.

Labs and Research Facilities

NUST has been equipped with state-of-the-art labs to facilitate practical knowledge and applied research. There are more than 383 labs for UG programs and 35 key labs for advanced research. NUST also provides on-campus cloud infrastructure offering IAAS, SAAS services. Some of the notable research-intensive labs include Anechoic Chamber, Image Processing Centre GPU-based Supercomputing, Supersonic Wind Tunnel, Material Characterization Facility at Micro & Nano level, Smart Grids, Robotics & Control Lab, and Neuro-Informatics, etc.



Professional Development Centre

700+ trainings, 18000 personnel trained, 800+ organizations

PDC is imparting high quality continuing education to NUST employees and industry professionals in the fields of Management, Engineering and Information Technology. PDC has conducted so far 700+ industry focused workshops and trained more than 18000 personnel and made a huge clientele of over 800 organizations. PDC is leveraging upon a rich faculty base of 1200+ members of NUST, including more than 600+ PhDs.

PDC is a certified professional engineering body of Pakistan Engineering Council (PEC) responsible for carrying out continued professional development of PEC-registered and professional engineers. The human resource programs offered at PDC are accredited from HRCI USA. The prime objective of PDC is to provide access to knowledge, capacity building and continuing education facility to professionals from all walks of life.

Central Library and Affiliated Libraries

350,000 books/e-books and 80,000 journals/e-journals

A state-of-the-art Central Library has been established in H12 Islamabad Campus along with 17 institutional libraries in different NUST campuses all over Pakistan to house more than 350,000 books/e-books and 80,000 journals/e-journals. This facility is open to NUST students, faculty and staff to promote reading culture, facilitate group studies and conduct training on citation management, information literacy and search management. NUST has continued to revive book-keeping culture as well as upgraded the facility with digital formats like e-books/e-journals to keep up with the pace of the modern age. The students are facilitated with publications, presentations, and writings in all formats free of cost, thus committing to free access to education for everyone.



Students Clubs and Societies

Dedicated office for activities (Students Affairs and Counselling Directorate, 35 students societies, and clubs, 5700+ annual student engagements)

Besides academic excellence, NUST ensures that students also develop literacy, creativity and leadership qualities to tackle global challenges. Therefore, NUST has established several societies and clubs for students to provide them with opportunities to pursue their passions and participate in and arrange events under the auspices of a dedicated directorate. The office, Students Affairs Directorate, is responsible for arranging and coordinating co-curricular activities at the campus. The following central clubs and societies are currently operational in NUST:



- NUST Bazm-e- Pakistan (NBP)
- NUST Adventure Club (NAC)
- NUST Environment Club (NEC)
- NUST Science Society (NSS)
- NUST Literary Circle (NLC)
- NUST Book Club (NBC)
- NUST Community Service Club (NCSC)
- NUST Dramatic Club (NDC)
- NUST Debating Society (NDS)
- NUST Media Club (NMC)
- NUST Fine Arts Club (NFAC)
- NUST Bio Reach Society
- NUST Entrepreneurs Club (NEC)
- NUST Leaders Society (NLS)
- NUST Excursion Club (NEC)
- NUST Digital Club (NDC)
- NUST Water Sports Club
- NUST Technical Amusement Club (NTAC)
- NUST Paragliding Club
- NUST Robotics Club (NRC)
- NUST Quiz Club (NQC)
- International Chapter (SCME)
- NUST Trekking Club (NKC)
- NUST GeneUs
- NUST Archery Club (NAC)
- NUST Cultural Club (NCC)
- NUST Fitness Club (NFS)
- NUST Physics and Astronomy (NPA)
- Institution-based Clubs and Societies
- NUST Ni Hao Club
- IMEchE
- NUST Hack Club

NUST'S MOU with Tech Valley to Facilitate Google Cloud Trainings for NUST Students and Professionals

In order to facilitate Google Cloud trainings for NUST students and industry leaders and professionals from diverse fields, NUST Professional Development Centre (PDC) signed a Memorandum of Understanding (MoU) with Tech Valley Pakistan, a step ahead towards Digital Pakistan. Under the MoU, NUST PDC and TechValley will jointly work to design and deliver the latest Google Cloud technologies in NUST labs and provide training through NUST PDC to utilize Cloud technologies for the use of AI and Data Analytics.



NUST PDC Signs MOU with Institute of Financial Markets of Pakistan

NUST Professional Development Centre (PDC) has signed a Memorandum of Understanding with the Institute of Financial Markets of Pakistan (IFMP), Pakistan's first financial market institute established as a permanent platform to develop quality human capital to meet the emerging professional knowledge needs of financial markets and create standards among market professionals. MoU has formalized the launch of the Certified Human Resource Professional (CHRP) Diploma Program in Karachi and, in near future, other certifications in the financial management & services sphere to inculcate practical capabilities in professionals and hence create a rich talent pool for both public and private sectors.





GOAL 5

Gender Equality

41

Research Projects

158

Publications

5

Patents

Female Representation in NUST

Science and technology are fields where women are usually under-represented globally with an evident gender gap. Despite being a university focused on engineering and related technologies, NUST has managed to provide an environment conducive for women to pursue an education in these fields, with current female enrolment at 39%. The university also facilitates female students by providing them with on-campus accommodation, equipped with appropriate sports and health facilities, with priority given to students from remote areas of Pakistan.

Apart from a healthy female students' representation, NUST also has a female membership of around 21 % in its pool of faculty and researchers. NUST has a stringent policy on harassment against women at the workplace to provide a healthy environment for women at the workplace.

Serena and NUST Ink MOA for Fostering Gender Equality through Serena Management Trainee Program

Serena HotelshassignedaMemorandum of Agreement (MoA) with National University of Science & Technology (NUST) to induct female graduates from NUST Business School (NBS) into the Serena Management Trainee Program. The MoA offers an excellent opportunity to female graduates of NBS for hands-on experiential learning and training in the field of Hospitality Management in a structured and professional setting. The one-year program will provide the Management Trainees with immersive learning to equip them with a holistic view of the business, as well as understanding the inter-relationships between different functional departments. The training is envisaged as an accelerated pathway that will help unlock their advancement to higher-level management positions in the industry.



NUST Students Win Civic Hackathon 2020 for their Project “Ghirasti”

NUST students stand first in Civic Hackathon 2020 for their project “Ghirasti”. Ghirasti is a platform that allows women to share their skills, teach other people, provide services and consequently earn money. The app allows women to provide a multitude of domestic management and civic services, starting with a simple step of making an account using their cell phones. The goal of this project is to give an opportunity to “stay-at-home mothers” and “homemakers,” who have so far dedicated all their time and effort to their families, and never had the chance to pursue a professional career. Even though they may not have professional expertise, they do have years of valuable experience in domestic management, a job that makes them efficient and patient multitaskers par excellence. The virtual competition, Civic Hackathon 2020, brought together a mix of technologists, designers, urban planners, social scientists, NGOs and government organisations, to approach and solve social and civic problems in an innovative way, using technology, data, and digital tools.



GOAL 6



Clean Water and Sanitation

80

Research Projects

411

Publications

24

Patents

Waste Water Treatment Plant

With water shortages plaguing the world, water scarcity has become one of the largest threats facing society today, making it one of the UN's main sustainable development goals. Therefore, NUST is aiming to focus on developing new projects and technologies to reduce its water consumption. Our researchers developed and installed a wastewater treatment plant which is a low-cost technology requiring minimal energy and operational attention for the treatment of wastewater. NUST meets 100% of its horticulture water requirement of its Islamabad campus through recycled water. Using Wetland Filter technology, NUST treats 80,000 gallons of sewerage water per day at zero energy consumption.



Free Drinking Water for All

NUST has installed free drinking water points in all of its campuses all over Pakistan, not only in classrooms and institutes, but also in the residential area of the campuses. The total number of free drinking points in NUST in all campuses amounts to 100s in numbers, which highlights the commitment of NUST to provide the access to this basic necessity free of cost.

NUST Master Plan for Water Management and Sewerage Network

Experts at NUST administration have developed a master plan which ensures that all water supply lines have been laid on one side of the road and seepage line on the other side of the road to prevent any chance of mixing sewerage water with drinking water. Periodical maintenance of all water supply fittings and network lines are conducted regularly to avoid wastage and to ensure zero leakage in the pipeline. NUST has also developed “Rainwater Map” for the complete H-12 sector and various structures have been constructed to utilize maximum rainwater through gravity flow. Following measures have been taken:

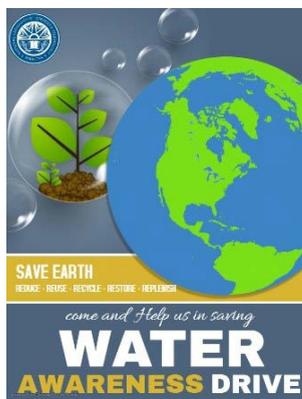
Rainwater Harvesting

- One 40,000 gallons’ underground water tank has been constructed in the vicinity of IESE (SCEE), to collect rainwater of the area and being used for drip irrigation purpose.
- NUST has constructed three check dams, to store rainwater resulting in rise of water table below the surface through seepage and also being used for horticulture purposes.
- Two recharge well of 250 ft depth has been constructed to replenish the groundwater through rainwater.



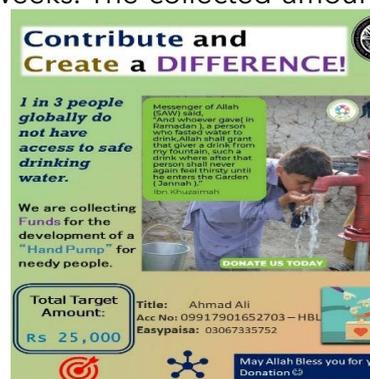
Poster and Pamphlets Distribution on Water Conservation at NUST

The pamphlets and the posters that were printed for this awareness drive were then distributed among the students and were also pasted on the walls of washrooms. It helps spread awareness as due to COVID-19, other projects like visiting schools or other drives were difficult to conduct. There are 6 hostels in NUST that were visited and posters were distributed there. This project will help in conserving water in NUST hostels and students will be ready to play their role in the future if such situations occur.



Donation Drive for Instalment of Water Hand Pumps

A donation drive for instalment of water hand pumps in under-privileged areas was planned and organized by students. The intended project was carried out in collaboration with PCA (Pakistan Citizen Alliance). The required amount for instalment of one water hand pump was 25000/- PKR. Comprehensive and thorough plan for collecting donations was organized by the team. For a more efficient and wholesome donation drive, posters were designed and shared with the community enabling them to donate for the noble cause. After the successful implementation of drive, the required amount was collected in the time span of 2 weeks. The collected amount was transferred to PCA after which they ensured the team that the intended water hand pump will be installed at under privileged area by the summer season of 2021.





7 AFFORDABLE AND
CLEAN ENERGY



GOAL 7

Affordable and Clean Energy

27

Research Projects

50

Publications

50

Patents

USPCAS-E: Centre of Excellence in Energy

NUST collaborated with Arizona and Oregon State Universities to establish U.S. Pakistan Centre for Advanced Studies in Energy (USPCAS-E) to address some of the outstanding challenges faced by the energy sector in Pakistan. Strategic goals behind USPCAS-E are to evolve into a Centre of Excellence in applied research catering to the energy sector and economy of Pakistan with the aim to establish efficient governance structures, sustainability, value-added curriculum, and capacity building, promote applied research to serve public/private sector and NUST-US students/faculty exchange programs. The core mission of USPCAS-E is to efficiently address and implement the E3 criteria (Energy, Environment, and Economy) for sustainable societal development.



Research Groups on Clean Energy

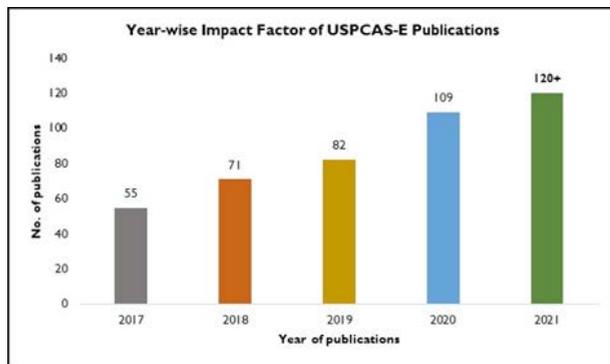
The research groups at USPCAS-E are working on the continuous evolution of research in response to the opportunities generated by new technology and methods. Members of these group include faculty and researchers from different energy backgrounds. Following are the main research groups at USPCAS-E:

Research Groups	Research Themes
Solar Energy	Solar Thermal, Solar Photovoltaic, PV-Thermal
Advanced Energy Materials	Nanomaterials, Photovoltaic, Fuel Cells, Thermal Barrier Coatings, Thin Films
Energy Storage and Conversion	Batteries, Supercapacitors, Carbon Capture

Research Groups	Research Themes
Biofuel	Micro Algae Cultivation, Biomass Gasification, Production of Biodiesel
Fossil Fuels	Clean Coal Technology, Fischer Tropsch Synthesis, Coal Gasification, Combustion
Thermal Energy Systems	Power Plants, Thermal Fluids, Thermal Energy Storage, Heat Enhancement, Heat Exchanger
Turbomachinery	Gas Turbines, Steam Turbines, Wind Turbines
Green Buildings	Energy Audits
SPRING (Smart Power Research & Innovation Network Group)	Designing and Integration of Energy Systems, Computational Modelling of Power Systems, Multi-Microgrid, Virtual Power Plants, Electric Power System Optimization, Smart Distribution Network Simulation, Planning, Scheduling and Operation.
Smart Grids and Electricity Markets	Modelling and Simulation of Emerging Electric Power Markets. Internet of Things for Smart Grids. Monitoring, Protection and Control of Smart Grids. Optimal Planning and Operations of Evolving National Power Grid.
High Voltage and Power Systems	High Voltage Testing of Novel Insulator Materials. Applications of Optimization and Machine Learning Techniques for Power Systems Solutions. Modelling and Simulation of Cyber-Physical Power Systems.
Advanced Power Electronics and Control	Advanced Power Electronics and Control applications in Wind Turbines, EV/HEV, PV systems, reliability, harmonics and adjustable speed drives.
Energy Economics & Policy	Economic and Policy Aspects of Energy, Energy Finance Analysis, Environment and Climate

Research Publications in Energy Field

During the year 2021, USPCAS-E has published 120 plus publications in renowned international journals covering diverse energy fields including solar energy, wind energy, energy storage, bioenergy, energy materials, electrical vehicles, smart/micro grid, high voltage, and other emerging energy technologies as shown in the graph. Researchers of USPCAS-E have also presented their innovative research ideas in different national and international conferences.



USPCASE Research publications during the year 2021 in the field of energy

Consultancies and Funded Research Projects in Energy

Industries and Organizations engaged: Mobiserve PAKISTAN Pvt limited, Islamic Relief of Pakistan (IRP), M/S Saif Traders, Ministry of Climate Change (MoCC), UN Habitat, and Sky Electric

Sustained funding has always been a major challenge faced by any institution. USPCAS-E faculty has actively pursued many local (govt/non-govt) and international funding agencies for further enhancing the capacity in their respective domains and equipping its researchers with most advanced and cutting-edge knowledge suitable for the country's requirements. Figure 1 gives an overview of the proposals fielded/won by the centre's faculty in collaboration with the partners in academia and industry. Among the funded proposals in the preceding year, USPCASE faculty has taken a lead in R&D of developing advanced generation batteries for transport and consumer electronics applications. Moreover, various high potential proposals are currently under review with different local and international donors such as HEC, PSF, Horizon, Korea Inst of S&T, Agriculture Linkage Program, Canada Intl Research Development Centre, etc.

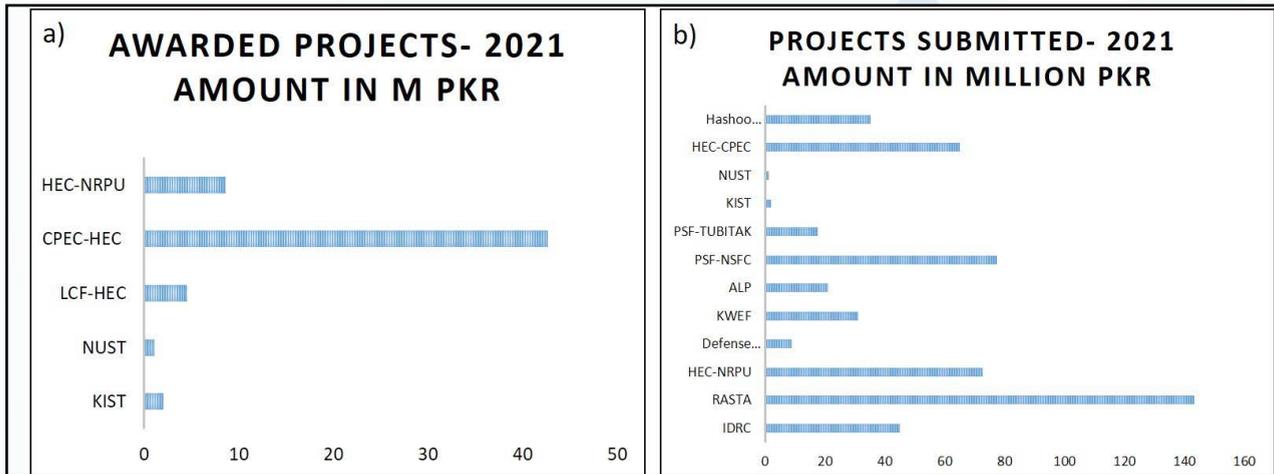


Figure 1: R&D Projects won (a) and submitted (b) by USPCAS-E Faculty

The consultancy services offered and won by the Centre's faculty to various organizations are included in Figure 2. Successful and funded engagements for consultancy with organizations such as Mobiserve PAKISTAN Pvt limited, Islamic Relief of Pakistan (IRP), M/S Saif Traders, Ministry of Climate Change (MoCC), UN Habitat, and Sky Electric etc. clearly depict the clout and strength of the faculty for addressing assortment of challenges faced by the communities.

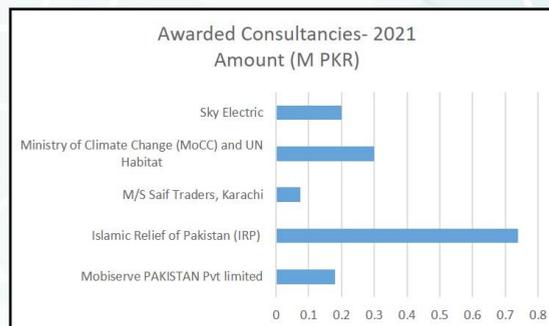
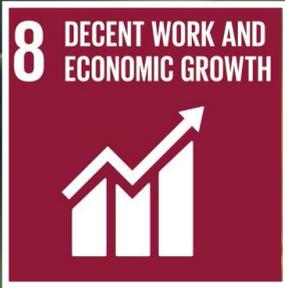


Figure 2: Consultancies awarded to USPCAS-E Faculty by different organizations during the year 2021

NUST Team Implements Intelligent Energy Monitoring & Management System at Fazal Steel

EnergEye is a collaborative project of NUST and Fazal Steel under the active technical support of the United Nations Industrial Development Organization (UNIDO). Dr Iftikhar Ahmad, the Principal Investigator of the project from NUST School of Chemical & Materials Engineering (SCME), said that EnergEye 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 manage the energy losses in the industry. EnergEye was successfully tested and implemented in the MATCAST Plant of FSL.





GOAL 8



Decent work and Economic Growth



41

Research Projects

122

Publications

25

Patents

NUST Placement Ecosystem

560 recruitment drives, 21607 internships offered, 10768 jobs, 1200 industries engaged in the last six years, 91% employment rate

NUST: Pakistan's No 1 university in employers' reputation

NUST has a strong ecosystem supporting placements of its students for internship and jobs for its graduates, through active engagement with the industry. A large number of on-campus recruitment drives, industry sessions, and alumni talk series are conducted across all schools and campuses. Being a comprehensive university, industries matching each discipline are selected. NUST has thus achieved a 91% employment rate as per QS ranking criteria and ranked as Pakistan's No 1 university in employers' reputation.

NUST Minimum Wage Policy and Child Labour

NUST adheres to minimum wage policy, as communicated by the government of Pakistan, for all the activities outsourced at NUST. There is a stringent policy on employing children

and juvenile workers for these outsourced activities.

Employee Benefits at NUST and Equity of Wages

NUST provides a conducive environment to growth for its employees and ensures equal wages based on merit, qualification and experience. Several other facilities include subsidized housing on campus with facilities like sports and gym, health (including free mental counselling), health insurance, child care and schooling, anti-harassment and grievance policies.



Preparing Students for Employability

In order to prepare our students for the job market, we implement custom made career development programs focusing mainly on developing employability skills applicable to the competitive job market. The career development program includes Career Orientation Seminars, Workshops on Resume Writing, and Workshops on Interviewing Techniques, One-to-One counselling sessions, and Focused Group Discussions (FGD).

She Means Work (Learning-Based Strategies Pvt Ltd) Signs MOU with NUST

With the goal to hire competent and professionally groomed graduates from Pakistan's premier higher education institution, She Means Work (Learning-based Strategies Pvt Ltd) has signed a Memorandum of Understanding (MoU) with NUST.

Ms Arooba Gillani, GM Placements at NUST, and Ms Lubna Bhayatv, CEO She Means Work, signed the MoU, acknowledging the vast pool of top-tier human resources that NUST has to offer, the agreement will afford NUST graduates and students with a new avenues to avail job and internship opportunities.



NUST Signs MOU with Reliable & Secure Solutions (RNS)

NUST and Reliable & Secure Solutions (RNS) have signed a Memorandum of Understanding (MoU) to help RNS obtain human resources from NUST. Both sides also agreed to work together on collaborative research projects targeted at addressing industry's most pressing challenges and improving industrial efficiency. RNS will also assist NUST in the conduct of on- and off-campus recruitment drives.



Two-Day Thematic Job Fair Held at NUST H-12 Campus

Amidst strict adherence to SOPs in the wake of the pandemic, National University of Sciences & Technology (NUST) arranged an elaborate two-day thematic Job Fair 2021 at its Islamabad Campus. Day 1 witnessed the participation of over 110 top organisations from sectors as diverse as Manufacturing, IT, FMCG, Civil, Mechanical, Electronics, Construction and Telecom for recruiting NUST's top students from disciplines of Engineering, IT, Biosciences and Architecture. Prominent firms at the job fair included Frontier Works Organization (FWO), Telenor Pakistan, MTBC, Ibex, Netsol, Allied Contractors, Dawlance, Interwood, Skyelectric, Intech Process Automation and Darson Industries, to name a few. On the sidelines of the job fair, an MoU was also signed between NUST and ICCL to collaborate for research, commercialization, and industry visits and placements of NUST students, graduates and faculty. Engr Javed Mahmood Bukhari, Rector NUST, and Mr. Sardar Yasir Ilyas Khan, President ICCL, signed the agreement. On day 2, around 60 industries related to Business Management, Social Sciences, and Natural Sciences, conducted the interviews of a large number of aspiring final year students enrolled in the relevant disciplines. Top employers included United Bank Limited, Faysal Bank, Habib Bank Limited, Telenor Microfinance Bank, PTCL, Ufone, Telenor, European Complex, etc. Mr. Nadeem Khan, Chief Financial Officer, Pakistan Telecommunication Company Ltd (PTCL), along with Mr. Raza Sarwar, Group Head HR Talent Acquisition & Outsourcing PTCL, and Dr Ashfaque Hassan Khan, Principal School of Social Sciences & Humanities (S3H), inaugurated the event.



Lecture on “The Economy of Pakistan”

Strong economy can ensure better lifestyle and better employment opportunities for the public. However, the economy of Pakistan has been struggling for decades because of: a) an initial weak financial system b) Covid 19, further slowed down the economy. To understand the current financial crisis, NIPS organized a lecture on “The Economy of Pakistan: Challenges & Way Forward” on November 04, 2021. Dr Ashfaque Hasan Khan, veteran economist and Principal, School of Social Sciences & Humanities, contextualized the economic struggles of Pakistan and what measures need to be taken to strengthen the economy. The post event report of the lecture was shared with relevant and key stakeholders of the economy.

MCE Internship Program

Realizing the need of fostering Academia-Industry linkage and the fact that students are not being provided enough opportunities to translate theoretical knowledge into learning outcomes of real world problems, a

comprehensive (structured and supervised) internship program has been planned and well executed in the month of October 2021. The initial feedback showed an emerging trend towards learning and students were able to gain considerable industrial experience that will be beneficial for their professional life.



NUST Signs MOU with Velosi Integrity and Safety Pakistan (Pvt.) Ltd.

NUST and Velosi Integrity and Safety Pakistan (Pvt) Ltd have inked a Memorandum of Understanding (MoU) to assist the latter in acquiring the services of accomplished NUST graduates and competent students for various jobs and internship positions. Ms Arooba Gillani, GM Placements, and Mr. Kamran Ibrahim, Operations Manager, signed the MoU on behalf of NUST and Velosi Integrity & Safety Pakistan, respectively. In his remarks, Mr. Imran



looked forward to hiring NUST students and graduates as soon as relevant vacancies arise in not only his organization but also other partner organizations. He also emphasized that in order for public and private sector organizations to enhance their output, it was imperative to engage talented and skilled youth from higher education institutions like NUST.

NUST and OED Ink MOC

NUST and Overseas Employment Corporation (OEC) inked a Memorandum of Cooperation (MoC) at the Ministry of Overseas Pakistanis & Human Resource Development (OP&HRD), Pak Sect, to facilitate OEC in acquiring services of human resource from NUST. Signatories also agreed to work together on joint research projects that would help resolve key issues facing industry. NUST Pro-Rector Research, Innovation & Commercialization, NUST Dr Rizwan Riaz and Managing Director (OEC) Mr. Kashif A Noor signed the MoC.





GOAL 9



Industry, Innovation and Infrastructure

142

Research Projects

261

Publications

725

Patents



Finding Innovative & Creative Solutions for Society (FICS)



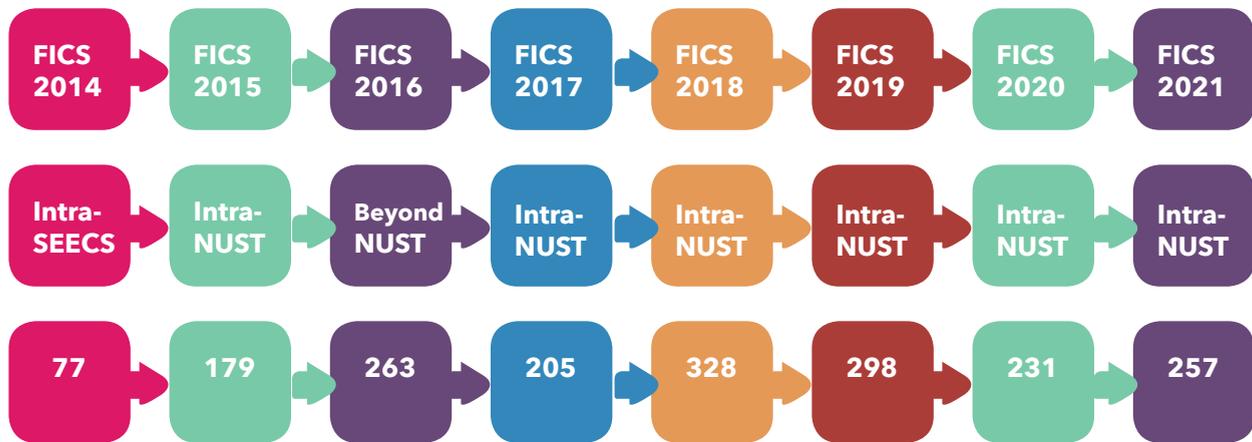
2014-21: No. of ideas submitted: 1838, No. of successful start-ups: 32

NUST strongly believes in inculcating the spirit of entrepreneurship and innovation among students to tackle modern-day challenges. Finding Innovative & Creative Solutions for Society (FICS) is an annual competition hosted by NUST in which students from around the country present their ideas and prototypes for funding and commercialization. This initiative aims to instil a spirit of social entrepreneurship amongst students, encouraging them to convert their creative ideas into value-adding solutions and thereby benefit themselves and society. The three-stage competition spans over two months in which projects are examined by industry leaders, innovators, and investors.

Some of the objectives of FICS are given below:



- To encourage students to become valuable members of society and contribute to societal/community development by deploying technical knowledge and scientific tools.
- To allow students to think creatively and develop the latest applications and innovative technology-based solutions, hence encouraging them to work on practical utilization of knowledge.



FICS in a Snapshot

NUST's Nine Researchers Ranked Among Top 2% of 100,000 Top-of-the-Line Researchers in the World for 2021

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 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 provides 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 to Collaborate on Digital Innovation Initiatives with Total Parco Pakistan Limited

NUST signed an MOU with Total Parco Pakistan Limited as a follow-up, by both NUST and TPPL, to collaborate on digital innovation initiatives, thus contributing towards accelerating the Digital Transformation of Total Parco. Speaking at the event, Air Vice Marshal Dr Rizwan Riaz SI(M) Pro-Rector Research, Innovation & Commercialization (RIC), highlighted the importance of inducting digital technologies in the oil and gas sector. These technologies have a key role to play in the future for oil extraction and management of fuel stations. Furthermore, TPPL offered induction of top students from multiple engineering and non-engineering backgrounds on an immediate basis. NUST and TPPL have also agreed to initiate student exchange programs, talent acquisition, professional development of the employees, and contribution in NUST endowments as part of this MoU.



NUST and IBM Global University Program (GUP) Ink a Unique Collaborative MOU

NUST has entered a dynamic and profound partnership with IBM. This was made possible with the support of NUSTIAN USA, and the special efforts of alumni in IBM who were represented at the event by Dr Rashed Bhatti, class'94 CEME, lead ambassador for the program at IBM Silicon Valley. Being an internationally ranked University that is at par with the leading science & technology universities of the world, NUST was a natural partner for this innovative initiative. The MOU served to ink the strong working relationship of NUST and IBM in the areas of skills, curriculum development, and research (relevant to Artificial Intelligence, Blockchain, Quantum,



Cloud, Cybersecurity, Data Science, Internet of Things and Design Thinking), among others. Under the umbrella of this all-out partnership, IBM Global University Programs and NUST will collaborate in multiple thematic areas

through different IBM initiatives including Research Innovation through IBM Academic Initiative; Global Collaboration; Skills and Recruiting through IBM Skills Academy; and IBM University Awards.

NUST Signs MOU with Tech Avenue Pvt Ltd to Explore R&I in AI, ML And Cyber Security

NUST and Tech Avenue Pvt Ltd signed a Memorandum of Understanding MoU, to promote research and innovation in the areas of Artificial Intelligence, Cyber Security, Machine Learning and Big Data.

This MoU will give both partners the opportunity to collaborate with each other in joint research grants and proposals at national and international levels, organizing joint conferences, workshops, trainings and seminars, offering employee exchange



opportunities. This aims at sharing the scientific and technical knowledge while extending the training opportunities to the staff/faculty to enhance their skillset and expertise.

Team NUST Secures 2nd Position at Formula Student Russia '21

Following their recent successful run in Formula Student UK 2021, Formula Electric Racing, a team of students from Pakistan Navy Engineering College (PNEC) of NUST has risen to prominence against all odds by winning overall second position at the Formula Student Russia '21 (FSR), thereby securing the first-ever podium for Pakistan in any Formula Student Competition. The team also stood second in all individual events of the competition, including the 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 prototypes that would cater to the plan of zero carbon footprint facility in the model in the span of ten years.



Telenor comes Onboard 35th NUST for Research and Innovation

NUST and Telenor Pakistan signed a Memorandum of Agreement (MoA), to promote research and innovation in the areas of Analytics, AI, and Data Science. The MoA is of great significance as it will provide a platform for joint research and development in the aforementioned areas. This also aims at sharing the scientific and technical knowledge while extending the training opportunities to the staff/faculty to enhance their skillset and expertise.



NUST Becomes a Digital Partner of IPO Pakistan

NUST and Intellectual Property Organization (IPO) Pakistan signed an agreement to collaborate on different projects especially development of a state-of-the-art, Artificial Intelligence (AI) based system for efficient examination of the IP applications. Both the organisations also agreed to collaborate on several other projects for capacity building of IP managers and inventors to promote the IP culture. Furthermore, both organisations are keen on promoting IP filing in the country along with providing platforms to inventors especially females where they can benefit from their intellectual work.



RIMMS Signs MoAs with Rapidev and Bcube

NUST Research Institute for Microwave & Millimeter-Wave Studies (RIMMS) signed Memorandum of Agreements (MoAs) with Rapidev Pvt. Ltd. and Bcube Pvt. Ltd. to strengthen industry-academia linkages. Both companies will be financially supporting R&D labs at RIMMS and offering tuition fee fellowships to PG students in the domain of RF & Microwave and IC design. The MoA was signed by Principal RIMMS Dr Hammad M Cheema and Mr. Wajid Gulistan, CEO Rapidev and Tahir Abbas, Manager Technical, Bcube. Pro-Rector Research, Innovation & Commercialization (RIC) Dr Rizwan Riaz graced the occasion and congratulated the signatories for taking this initiative and contributing towards NUST's vision of becoming a research-led university.



1st International Conference on Microwave, Antennas and Circuits (Icmac 2021) Held at NUST



The First International Conference on Microwave, Antennas & Circuits (ICMAC 2021) was held at NUST, Islamabad. The conference was organized by NUST Research Institute of Microwave & Millimeter-Wave Studies (RIMMS) and the National Institute of Electronics (NIE) Islamabad. The conference general chair & Principal RIMMS, Dr Hammad M. Cheema, while presenting the conference summary, informed

that more than 120 research papers from 22 countries were submitted to the conference covering the domains of antennas, microwave components, IC design and others. He emphasized the need for a national-level policy discourse to set the direction of the chip design eco-system in Pakistan. Being the first-ever conference to be held on these specialized topics in Pakistan, Dr Cheema lauded the excellent participation of over 600 students, researchers and industry representatives from the public and private sector.

Nine Innovative Tech Start-ups Graduate from NSTP-NUST

NSTP: 840+ jobs, 32+ internships and generated 85 IPs, 40+ trainings, workshops and webinars. Investments surpassing \$830,000

Graduation Day Ceremony for the first cohort of National Science and Technology Park's (NSTP) Hatch 8 Program took place at the main campus of the National University of Sciences & Technology (NUST). A total of nine start-ups graduated as part of the first cohort. Launched at NUST in 2019 under the overarching theme of "Innovate Pakistan", After six months of challenging sessions at the park, coupled with continuous mentorship, guidance and business plans revamping, the founders of these start-ups were ready to showcase their prototypes and businesses with an ambition to make a difference in the tech realm. Some of these graduates have also been granted space in NSTP's next stage incubator Cube 8, whereas one has even transitioned straight away into an NSTP Hi-tech SME.

The tech start-ups 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 nine start-ups, three were given awards for high achievement on the basis of revenue generation, customer base and socio-economic impact.

In such a short span of time, and despite a raging pandemic, the Park had already created 840+ jobs, 32+ internships and generated 85 IPs, 40+ trainings, workshops and webinars. Besides, investments surpassing \$830,000 had also been raised by NSTP based start-ups during this time. He also thanked innovative Hi-tech SME tenants of the park, namely Rapidev, APIMatic and Data BI who offered support to other start-ups during these challenging times.



GOAL 10

Reduced Inequalities

41

Research Projects

36

Publications

3

Patents

NUST Non-Discrimination Policy

NUST imposes a strict, non-discrimination policy for reducing in-equalities due to gender, race, marital status, ethnicity, religion, financial background, disabilities, and sexual orientation. The policy, which emphasizes on merit, applies to all matters of university employment, administration, admission to university academic programs and other activities.

NUST Disability Redressal Policy

Disability covers various physical and psychological impairments that pose a challenge to the functionality of a person, affecting his/her ability to carry out day-to-day tasks. Disability may be associated with long-term health issues, thus requiring rigorous management which impediments a person's participation and productivity as an individual and member of society. Social barriers and lack of facilitation may be a hindrance to effective participation on an equal basis with others.



NUST constituted "National Disability Redressal Committee (NDRC)" to review existing infrastructure and practices and recommended plans to make NUST disability-friendly institution. Previously, students or staff with a disability was duly facilitated upon need and request. However, there was a dire need for policy and formation of dedicated committees/structures to streamline the assistance and facilitation process for students/staff with disability, hence NUST introduced this policy for redressal of disability into the following categories:

- Admission
- Curriculum & examination
- Rehabilitation/employment
- Addressing temporary disability
- Disability awareness and staff development
- Infrastructural changes
- Constitution of disability redressal committee

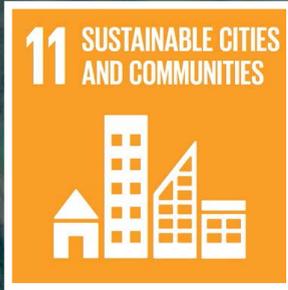
NUST Organizes Pakistan's 1st Technology for Inclusion Summit (TIS2021)

National University of Sciences & Technology (NUST) in collaboration with Pak-Everbright Development Organization (PEDO) held the Technology for Inclusion Summit 2021, a first for the country, at the university's main campus. The prime objective of the summit was to bring together and connect users, manufacturers, researchers and other relevant stakeholders in the domain of assistive technologies. The event also proffered an opportunity for NUST to closely engage with the industry and display its assistive technologies for potential deployment and commercialization.

NUST has successfully conducted several projects in the field of Biomedical Sciences, Neurosciences and Prosthetics, Robotics, and Artificial Intelligence. These solutions have been indigenously developed by NUST researchers, and are cost effective and thus bringing such assistive devices within the purchasing power of a common man.

Mr. Shahab-ud-Din, CEO Pak Everbright Development Organization (PEDO), enlightened the occasion with his lifelong struggle and difficulties being faced throughout these due to disability. He also stressed the need for developing cost-effective assistive technologies in the country. He extolled NUST for organizing this summit and making these devices accessible for general masses.





GOAL 11



Sustainable Cities and Communities

80

Research Projects

667

Publications

32

Patents

2

No. of technologies
licensed



Technologies Licensed

NUST Licenses a GIS-Based Land Management System to GIS Plus Total Solutions Pvt Ltd

NUST Innovation & Commercialization (I&C) Dte marks another milestone, as a GIS-based land management system has been licensed to a NUST spinoff, GIS Plus Total Solutions Pvt Ltd. The proposed platform offers an automated society management system based on Geographical Information Systems (GIS), which promises increased efficiency and peace of mind for both managers and the customers. This technology is key in the development of new housing societies and can also be integrated with existing ones to offer residents a better experience with this advanced property management system.



NUST Licensed an AI-Based Smart Traffic Monitoring Technology to Synapsify Systems Pvt Ltd

NUST Innovation and Commercialization Directorate (I&C) licensed an AI-based smart traffic monitoring technology to Synapsify Systems Pvt Ltd. Dr Saifullah Awan and Dr Shahzor Ahmad from the Department of Electrical Engineering, College of Electrical & Mechanical Engineering (CEME), explained the importance of detection and accurate classification of vehicles from a security as well as monitoring perspective. The technology has proven potential to ensure safe, smooth, and efficient traffic flow, and ensure the maintenance and sustainability of Pakistan's multi-lane highways, high-speed motorways, and strategic routes.



NUST Signs a Memorandum of Understanding (MoU) with Jaswal Films

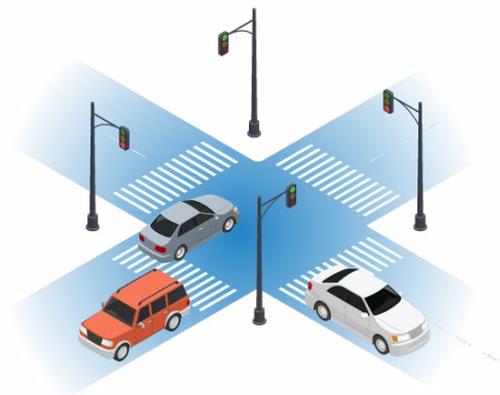
NUST shook hands with Jaswal Films, signing a Memorandum of Understanding (MoU) aiming to engage the mass communication students. Jaswal Films has extended its support for philanthropic activities at NUST and offered to provide the students with internship opportunities as well.

This partnership is of great significance for our media studies students allowing them to interact with a leading production house of the country for guidance, mentorship, and hands-on experience in their relevant fields.

FICS Best Project Award 2021

Intelligent Signals: Intelligent traffic signals auto adjust the timings of signals lights according to the flow of traffic and recognize the number plates of the vehicles, record and report the road accidents to the authorities in real time.

Datatrove: Datatrove is a complete machine learning-based security solution which protect against scanning, Dos and web attacks in real time by engaging the attackers using an efficient honeypot approach.





GOAL 12

Responsible Consumption and Production

41

Research Projects

241

Publications

44

Patents

Ban on Plastic Bags

NUST actively promotes environment-friendly practices at all of its campuses. The use of plastic bags at all stores inside NUST was banned on account of their negative impact on the environment and has long been replaced by eco-friendly alternatives.



Team from NUST Wins UNESCO Inter-University Competition to Develop Low-Cost Plastic Waste Recycling Machine

Team of NUST students along with two faculty members, Dr Salman Raza Naqvi (supervisor) and Dr Taqi Mehran (co-supervisor) from NUST School of Chemical & Materials Engineering (SCME) participated in United Nations Educational, Scientific and Cultural Organization (UNESCO) inter-university competition to develop low-cost plastic waste recycling machine and effectively came up with a solution which caught the eye of Pakistan Science Foundation (PSF) selection committee and is approved. The NUST team will be provided with funds (PKR 0.6 million) by the organizers (PSF and UNESCO) to develop the prototype for plastic recycling machine. The design of this machine is based on the idea of converting plastic waste (low density polythene, Styrofoam, etc.) into bricks. The concept of melting the plastic and densifying it to produce the bricks will be introduced in the market for commercialization.



Solid Waste and Water Resource Management

NUST collaborated with WASA Rawalpindi, WASA Faisalabad, PCRWR, Islamabad CDA Local Hospitals, Rawalpindi Municipality, Ministry of Health, Climate Change Ministry, Urban Unit to establish a dedicated research group at IESE, NUST supervised by Dr. Muhammad Anwar Baig work on various aspects of solid, industrial/ hazardous, electronic and hospital/health care waste management, leachate generation and treatment through physical, chemical, and biological especially phyto-remediation methods. Solid waste is also managed using aerobic, anaerobic, and vermin-compost technology and possible option of generation of energy biogas using meso and thermophilic digesters. Monitoring and modeling of quantity and quality aspects of water resources are also addressed by this group.





Combining Upcycling and Chemical Recycling to Maximise Resource Efficiency for Manufactured Denim Rejects

Pakistan is one of the largest denim producers in the world, with clients all over the world. Our faculty at NUST Business School, Dr. Owais Anwar Golra won a taxonomy challenge prize fund by British Council, in collaboration with Dr. Edward Rendviir, Senior Lecturer at Manchester Metropolitan University, funded by British Council under a textile circular economy scheme. Under the collaborative project on the circular economy, the objectives were to develop in-house production capacity to upcycle denim rejects into new products in order to achieve scalability and to create more employment opportunities for youth and women. It also focused on developing a dataset of rejected denim fabric based on the composition and type of the fabric, and frequency of faults for subsequent designing of the chemical recycling process. It investigated a novel chemical recycling process to convert denim offcuts into platform chemicals for bioplastic production.



GOAL 13



Climate Action



80

Research Projects

545

Publications

40

Patents

NUST Welcomes Spring with Tree Plantation Drive

With the dearly anticipated spring season ushering in, National University of Sciences & Technology (NUST) embraced the pleasant change in weather by kicking off a massive tree plantation drive at its main campus. Maj Gen (Retd) Jahangir Khan, NUST Pro-Rector Planning & Resources, inaugurated the eco-friendly campaign by planting a Citrus tree. He was flanked by an overwhelming number of students, faculty and university officials, who together planted over 400 tree saplings of Citrus, Fig, Loquat, Pine and Olive at the area earmarked for this year's campaign. More than 3000 trees will be planted during the campaign, taking the overall count of trees around the campus to over 100,000.



Risalpur Garrison Waste Management Workshops at MCE

Workshops on Solid waste management were organized and conducted by MCE. The events were associated with SDG 13 (Climate Change). The main objective of the seminars was to create awareness among the residents of Risalpur Garrison regarding different ways of solid waste management. They were trained to handle different type of waste materials in an efficient way. The lectures aimed to have realization of waste reduction & efficient use of resources by ensuring that the waste of one sector can be used as raw material in another.



Green Commuting within Campus for Students and Staff



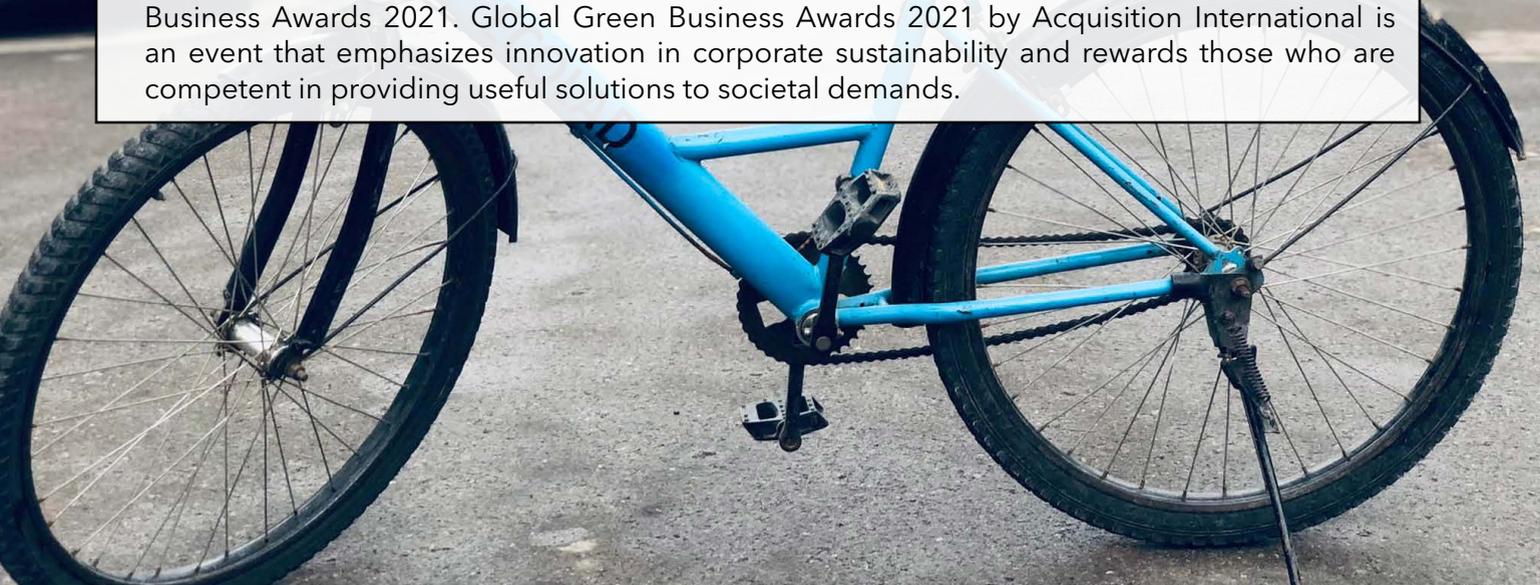
NUST has an elaborate and well-organized transport system to meet the requirements of students, faculty and staff. There is a special emphasis on environment-friendly transport system. NUST runs a fleet of electric cars within its campus to minimise carbon emission. Electric cars are used as shuttle service between various locations within the campus i.e., hostels to various school/offices and from gates to schools/hostels/offices. NUST also has an elaborate transport system for pick and drop of students, faculty and staff from all localities of the city with variable timings. Transport is also made available to facilitate students for industrial visits, research projects, club activities, society/community initiatives, awareness walks and excursion trips.



NUST Alumnus Start-up "ECOLAD" Provides Green Commuting Options to Students and Staff on Campus | 10000+ University Residents Users, 3.35 Million Tons of Carbon Emissions Saved

ECOLAD is a start-up by one of our very own alumnus from NUST School of Natural Sciences, Muneeb Ahmad. ECOLAD fights climate change through eco-friendly initiatives. It is Pakistan's first electric scooters and bicycle-sharing start-up, currently operational at NUST to provide a green transport solution for short-distance commutes. ECOLAD currently has a registered user base of 10,000+ university residents, annually saving around 3.35 million tons of carbon emissions.

ECOLAD was awarded the 'Green Business Resilience Award 2021' and received the title of 'The Most Pioneering Bicycle and Electric Scooter Sharing Platform in Asia' in Global Green Business Awards 2021. Global Green Business Awards 2021 by Acquisition International is an event that emphasizes innovation in corporate sustainability and rewards those who are competent in providing useful solutions to societal demands.





GOAL 14



Life below Water

80

Research Projects

359

Publications

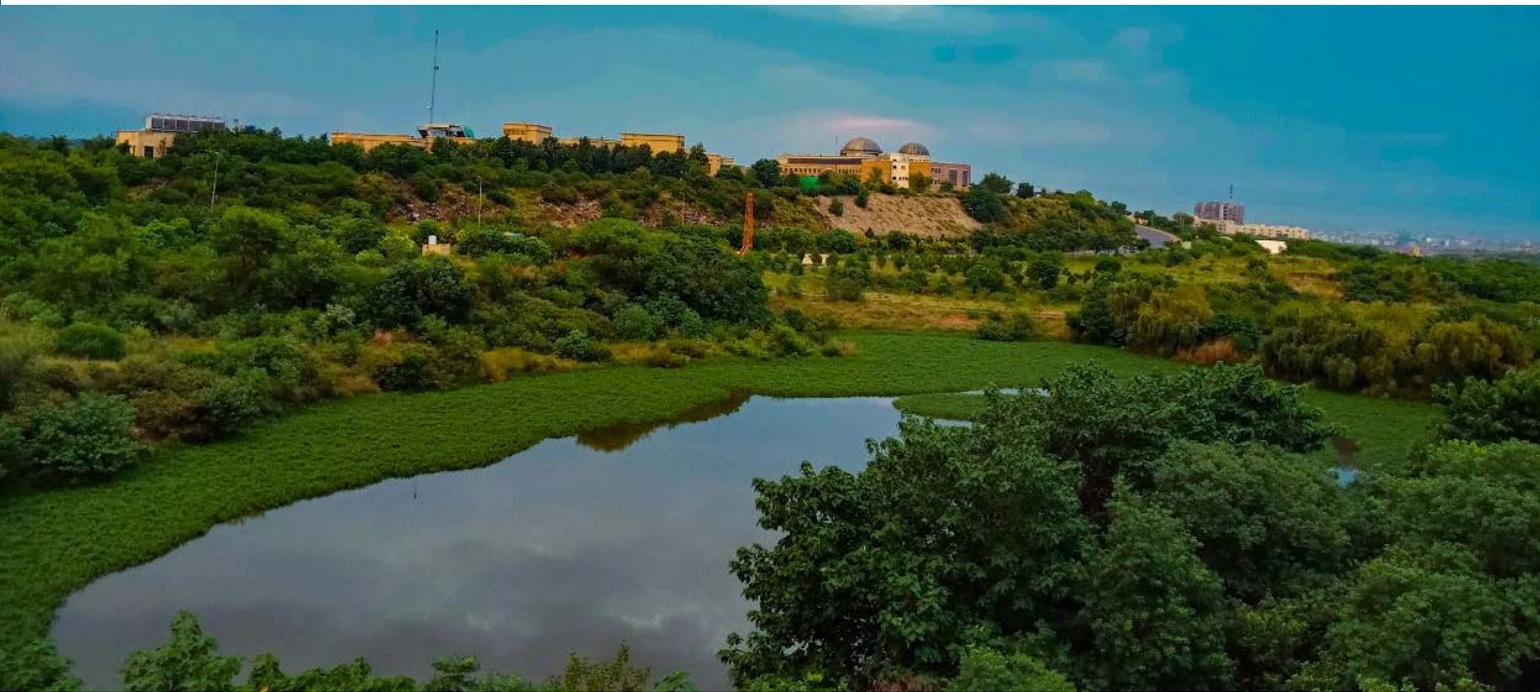
3

Patents

NUST Lake

“Home to Many Birds”

NUST Lake is an exquisite spot for the students to take a break from the monotonous routine. One can escape here and relax with this mesmerizing view situated right within the campus walls. Its serenity, often accompanied by the patter of rain, caters to its value for providing a refreshing scenery to capture your timeless memories under the mantle of the sapphire sky, accompanied with a beguiling view of the blossoming landscape. Not only this lake is a treat for students but also a home to many beautiful birds species and plants.



Water Quality Assessment of Raw and Chlorinated Drinking Water of Residential Area at NUST

The safety of water is essential for life on earth. Drinking contaminated water can give rise to many health issues. To highlight the major causes of contamination in water, study was carried out to determine the physicochemical and bacteriological quality of raw and chlorinated water. Raw and chlorinated water samples were obtained from three locations (zones) of a residential university (National University of Sciences and Technology, NUST). Ten physicochemical parameters were analysed (pH, electrical conductivity, turbidity, dissolved oxygen, hardness, alkalinity, total suspended solids, total dissolved solids, total organic carbon, and chlorine (free & total)). Bacteriological analysis was performed through the MPN technique. The results concluded that the water, whether raw or chlorinated, was not fit for drinking purposes. Proper dosages of chlorine and filtration techniques are required to make the water fit for consumption. On the basis of this study NUST administration extend their collaboration with Nestle and other service providers to ensure the availability of quality drinking water inside the campus.

Economic and Environmental Implications of Water Harvesting Practices Under Changing Climate and Land Use Scenarios Across Pakistan

Literature review and collection of hydro-meteorological remote sensing and socio-economic data was analysed to identify the suitable method for selecting suitable rainwater harvesting sites in arid and semi-arid regions (ASARs) by assembling an inventory of the main methods and criteria developed during the last three decades. The success of RWH systems depends heavily on the identification of suitable sites and on their technical design. Studies concluded that socio-economic criteria were needed to improve the selection of suitable sites, such as integrated watershed management in which the development and management of water are linked to economic and social welfare. Analysis of strengths and weaknesses suggests that the integration of MCA and GIS is the most advanced method and provides a rational, objective, and unbiased method for identifying suitable sites for RWH.



GOAL 15



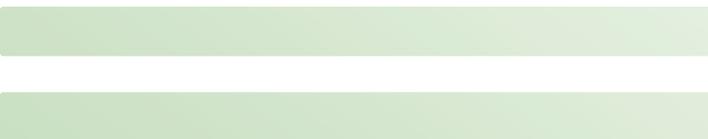
Life on Land



92
Research Projects

245
Publications

13
Patents



Water, Energy, and Environment for Sustainability (IC-WEES) 2021

The International Conference on Water, Energy, and Environment for Sustainability (IC-WEES) 2021 is a flagship conference of National University of Sciences and Technology (NUST), Pakistan. Atta-ur-Rahman School of Applied Biosciences (ASAB) organized it with a priority theme "Biotechnologies for Environment, Health and Agriculture, aiming to bring diverse research groups to exchange and share their experience and provide sustainable solutions based on biotechnological approaches in the field of health, agriculture, and environment. Advances in biotechnology and its applications in environment, health and agriculture hold promises for improving human lives by providing effective diagnostics, disease prevention and treatment measures, enhancing crop productivity, nutritional value and protecting the environment through bioremediation, waste management and resource recovery.

Birdify - Environmental Project for the Protection of Birds in Urban Areas

Nustians provide better shelter facilities for birds in urban areas as their population is decreasing rapidly. Birds play an important role in life's food-chain around us. Their presence is beneficial in many ways, both psychologically as well as physically. Different birds' nests were planted on trees and walls in schools and madrassas, and sessions were also held with kids to spread awareness. Due to the pandemic, team members performed this activity in their hometown.



Forest Monitoring and Change Detection Using Remote Sensing Data

Detecting forest changes is very important for sustainable forest management. Changes in the forest area due to deforestation (such as forest fires or logging due to development activities) or afforestation, change the total forest area. In addition, this affects commercially available stocks climate change due to carbon emissions, and biodiversity estimates of forest habitats, which are important for the management of forests' disaster and policy making. The manual processing steps are fragile and error-prone and can produce incorrect segmentation results (i.e., under and over). Unlike traditional methods, in this project NUST researchers developed an end-to-end framework for estimating and analysing forest variability. In this case study, forest cover 15 districts of Pakistan and forest change maps spanning 2014 to 2020 are estimated where the main afforestation activities were carried out during this period. The critical analysis showed improved forest cover in 14 of the 15 districts

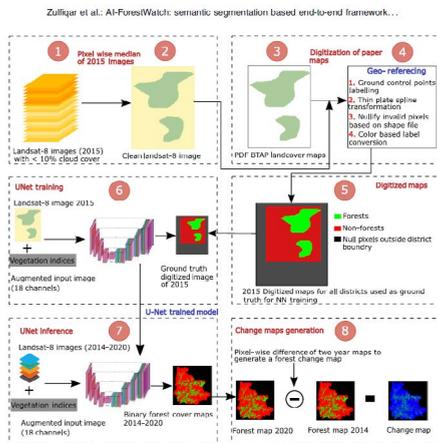


Fig. 2 Detailed flow diagram of the AI-ForestWatch framework. Step-(1) to step-(5) depict the digitization process of the available year 2015 maps. Step-(6) shows the UNet training and the step-(7) and step-(8) show the generation of forest estimation and change detection, respectively.

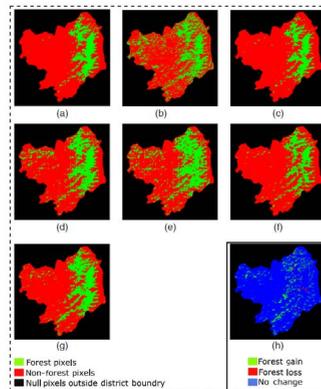
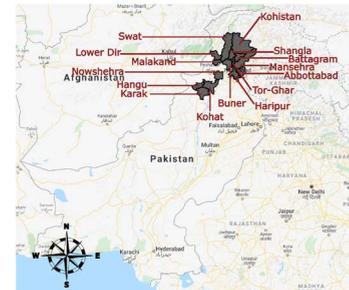


Fig. 6 Abbottabad district 2014 to 2020 statistics generated automatically by the AI-ForestWatch framework: (a)–(g) the forest cover maps generated by the UNet inference from years 2014 to 2020, respectively, and (h) the forest change map of 2020 with respect to 2014. Blue pixels indicate no change in the area, red pixels indicate forest loss, and green pixels indicate forest gain.





GOAL 16

Peace, Justice and Strong Institutions

80

Research Projects

16

Publications

12

Patents



Centre for International Peace & Stability Partners with Institute of Policy Studies

NUST Centre for International Peace & Stability (CIPS) and Institute of Policy Studies (IPS) entered into a general agreement for cooperation. Spanning over a period of three years, the agreement intends to establish one-on-one cooperation between the two institutions in the specific fields of research, publication, and capacity building related to their mutual interests. The broader aim of the collaboration is to build a conducive environment for academic, research, and exchange collaborations. The heads of the two institutions, with high hopes for how this collaboration unfolds, also emphasized the significance of such collaborations to produce quality scholarship that can contribute to formulating efficient policies. IPS is an autonomous, not-for-profit, civil society organization that is dedicated to promoting and producing policy-oriented research. And CIPS, as an academic think-tank, strives for a deeper understanding of the peace and conflict dynamics worldwide. Through its academic and scholarly endeavours, CIPS aims to come up with pragmatic solutions to contemporary issues to foster an environment of peace and stability nationally as well as internationally.



CIPS Signs MOU with Institute of Regional Studies for Collaboration in Academics and Research

NUST Centre for International Peace and Stability (CIPS) and the Institute of Regional Studies (IRS), Islamabad entered into a general agreement for cooperation. The broader aim of the collaboration is to build a conducive environment for academic, research, and exchange collaboration to reap sustainable and meaningful benefits.

IRS, with the slogan “know thy neighbour”, was established in 1982 with the purpose to critically and objectively analyses the developments in the region, in order to effectively address the regional complexities and challenges. CIPS, as an academic think-tank, strives for a deeper understanding of the peace and conflict dynamics worldwide and come up with pragmatic solutions to the contemporary issues to foster an environment of peace and stability nationally as well as internationally.

National Conference on Security and Development

NUST School of Social Sciences & Humanities (S3H) hosted a one-day national conference on "Security and Development". The conference underlined that security and development are no longer limited to the military alone; it also encompasses a broad range of developmental philosophies and strategies that are directly or indirectly influenced by traditional and



non-traditional threats, including economic, political, societal and environmental. In addition, the conference highlighted that the concept of human security is very crucial to ascertaining as well as addressing threats to the well-being of individuals.

The main focus of the discussion was around

the challenges of the 21st century that are no longer limited to any single threat only. Hence, a state's national security and developmental policies must cast their net wide, beyond simply relying on hard power means, to ensure national security. The conference concluded that the notion of national security in this day and age accounts not just for military security and proactive diplomacy but also economic, political, social, human, food, energy, and environmental security.

Islamabad Security Dialogue – Special Session on Afghanistan

NUST Centre for International Peace & Stability (CIPS), in collaboration with the National Security Division (Pakistan), organized "Security Dialogue - Special Session on Afghanistan". Dr Moeed Yusuf, National Security Adviser to the Prime Minister of Pakistan, addressed the session and identified complexities pertaining to the current Afghan situation and policy implications for Pakistan. Further, he explained Pakistan's position in the post-US withdrawal from Afghanistan. He elaborated that, at the policy level, Pakistan's relations with Afghanistan include connectivity, development, and peace. Earlier, Professor Tughral Yamin, Associate Dean CIPS, highlighted the need to adopt a strategy to

enhance the academic collaborations between Pakistan and Afghanistan that can contribute towards recovery, development and sustainable peace.



CIPS Holds Seminar on Understanding the Palestinian Conflict

NUST Centre for International Peace & Stability (CIPS) organized a seminar titled “Understanding the Palestinian Conflict”. The seminar brought together renowned academics and analysts from various countries; they shared their views on the worsening Palestinian conflict with the participants, emphasizing the early resolution of the conflict to bring lasting peace to the region and beyond. The recent episode of violence and the global outcry against it is a visible sign that violence against Palestinians is not going unheard globally, speakers noted, adding the world’s opinion on the issue is gradually yet steadily turning against the Israeli occupation and atrocities against the defenceless people.



CIPS Delegation Visits EU Institutions and NATO HQs in Brussels

Prof Tughral Yamin, Associate Dean NUST Centre for International Peace & Stability (C) and Dr Muhammad Makki, Assistant Professor at CIPS Department of Peace & Conflict Studies, attended an Exchange Visit Program in Brussels with EU institutions and NATO HQs from November 15 - 20, 2021. The visit was organized by Hanns Seidel Foundation. The delegates had discussions with MEPs, senior NATO officials, think tanks on Pakistan-EU relations, focusing on non-traditional security challenges including climate change, migration, cyber security, food security, digitization, etc. Various issues pertaining to the NATO 2030 Agenda, including strategic vision towards non-traditional security, were also discussed during the meetings with senior NATO officials.



Webinar on Requirements of Inclusive and Cooperative Development of CPEC

NUST Institute of Policy Studies (NIPS) held a webinar on the requirements of inclusive and cooperative development of China-Pakistan Economic Corridor (CPEC). The event was attended by veteran diplomats, eminent experts, professionals, policy researchers, academics and students. Engr Javed Mahmood Bukhari, Rector NUST & Patron NIPS, appreciated the development of CPEC as a strategic, consultative, coordinated, and integrated cooperation platform for China and Pakistan, complete with a range of development philosophies, growth strategies and implementation models. Ms Pang Chunxue, Deputy Chief of Mission, Embassy of the People's Republic of China in Pakistan, highlighted the business development potential of the multi-billion-dollar projects of CPEC. She said China's latest strategy of double circulation will further provide immense opportunities for enhancing China-Pakistan cooperation, particularly in the development of CPEC.



GOAL 17

Partnerships for the Goals

41

Research Projects

4

Patents



NUST Signs Agreement with Multinational Consortium Led by ICA

NUST signed an agreement with a multinational consortium led by International Consulting Associates (ICA) for the development and expansion of National Science & Technology Park (NSTP), Pakistan's first STP. The Transaction Advisory Services agreement between NUST and the multinational consortium led by iConsult, will augment NUST's plans to develop NSTP by constructing eight towers in four phases over the next 10-12 years on Public-Private Partnership (P3) basis, over close to 60 acres of land at its H-12 Campus, Islamabad. Special Economic Zone status - availing income tax and import duty exemptions for 10 years - has already been conferred on the project to provide incentive support by the government. In December 2019, NUST established NSTP with a mandate to serve as an internationally proven vehicle for the promotion of science, technology and innovation by facilitating cooperation amongst research centres, industry, communities and government to create stronger knowledge-based activity in Pakistan's economy. The pilot building is already home to a mix of anchor tenants, hi-tech SMEs and start-ups doing cutting edge research and innovation in select thematic verticals of national and international significance.



Foreign Students Treasure Collaborative Placement at NUST; Depart with Memories for a Lifetime

NUST's signature Internship Program for International Students (NIPIS '21) concluded at the university's main campus. The program promises to deliver a sublime internship experience that not only advances the professional skills of participants from around the world but also reinforces their academic competence through its practical applications, and simultaneously gives them insights into the rich cultural heritage and natural beauty of Pakistan. 33 foreign interns - 28 as part of NIPIS, while 5 others from Association for the International Exchange of Students in Economics & Commerce (AIESEC) - partook in the program that entailed a 360° learning experience. However, due to the pandemic and travel restrictions thereof, a total of 14 interns could manage to physically attend the internship on campus, while the rest benefitted from the program through virtual means. The countries these interns represented included Afghanistan, Egypt, Canada, Nigeria, Sri Lanka, Sudan, Turkey, the United Kingdom and the United States of America.



International Memberships National Science and Technology Park (NSTP):

NSTP strives to forge partnerships with like-minded institutions and organizations, that can serve the overall national interests of promoting Science, Technology and Innovation; training and grooming scientists, technologists and engineers to become drivers of change through innovative products and services; providing foreign markets to Pakistani innovators and entrepreneurs and opening doors to the Pakistani market for overseas innovators and entrepreneurs; facilitate joint ventures and partnerships between enterprises from different industries or countries; and more.

NSTP is member and in strategic alliance with the following international organizations:

International Association of Science Parks (IASP)

IASP is a worldwide network of Science & Technology Parks having 347 members from 77 countries. NSTP is the only full member of IASP from Pakistan.



Asian Science Park Association

ASPAs are international nongovernmental organizations established in Japan in 1997 for the purpose of accomplishing the joint development in the fields of scientific technology, industry and economy in the Asian region.



World Technopolis Association (WTA)

WTA is a multilateral international organization created with the purpose to connect the advancement of science and technology with local development. NSTP is the only associate member of WTA from Pakistan.



Inter-Islamic Network on Science & Technology Parks (INSTP)

INSTP is a platform for technological development among Muslim countries. NSTP is member for INSTP as well as the only Pakistani member of its Executive Council.



International Business Incubator (IBI) Beijing, China

International Business Incubator (IBI) Beijing, China also known as Zhongguancun Science and Technology Park. It is the most intensive scientific, education and talent resource base in China.



iAccelerate, Wollongong, Australia

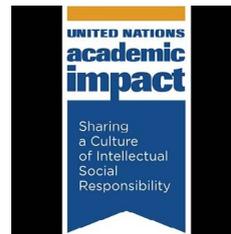
iAccelerate one of the leading and unique business accelerator and incubator program run by the University of Wollongong (UOW)). It's a thriving community of like-minded entrepreneurs with vision, purpose and passion, offering a unique eco-system with exceptional education, mentoring and support.



NUST Collaborations with International Associations:

NUST believes in establishing collaboration with international bodies for the capacity building, shaping future leadership, and preparing youth for the multi-dimensional global challenges. NUST has been collaborating with International Association for Exchange of Students for Technical Experience (IAESTE) foreign interns since 2013 as well as International Association of Students in Economic and Commercial Sciences (AIESEC) for students' exchange programs.

So far NUST has hosted fourteen international students in these programs and aims to increase the numbers in the future, focusing on in-take from under-represented countries. Apart from students' exchange, NUST has been a member of Sustainable Solutions Development Network (SDSN), SDG Accord, United Nations Academic Impact (UNAI) and Association for Advancement of Sustainability in Higher Education (AASHE) which enable NUST to propagate its sustainability initiatives, establish collaboration, and share knowledge with the global key players.



NUST Community Service Club (NCSC)

Total 100,000+ Community Service Hours

NUST has encouraged and facilitated its students to participate in community service. Therefore, a highly dedicated and active club, NUST Community Service Club (NCSC), sponsored by the School of Mechanical and Manufacturing Engineering (SMME), was established in 2007 for the sole purpose of developing a sense of responsibility, compassion, and empathy towards the community amongst the students of NUST. From a humble beginning of 35 volunteers in 2007, the club has now grown to 1000 registered members every year, 1100 registered for community service courses and an extensive network of NCSC alumni. It is headed by a council of students, yearly selected based on past community service contributions. The council makes a yearly calendar of activities conduct frequent eye-camps, blood donation drives, tree plantation campaigns, orphanages and school visits, awareness programs, and much more., collaborates with community partners and non-government organizations (NGOs).





Report Compiled by
NUST Office of Sustainability, Academics Secretariat
National University of Sciences & Technology, H12 44000 Islamabad

 @nustainable

UAN: 111-116-878 |     NUST |  nust.edu.pk

Produced by: NUST Marketing & Communications