

COLLABORATE WITH US



National University of Sciences
& Technology, Pakistan
www.nust.edu.pk


NUST
Defining futures

CONTENTS

KNOWLEDGE MANAGEMENT ECOSYSTEM 01

AVENUES OF PARTNERSHIP 02

MUST RESEARCH THEMES 03

MAJOR RESEARCH AREAS 04

FROM R&D TO DEPLOYMENT 05

RESEARCH OUTPUT & FACILITIES 08

NATIONAL SCIENCE & TECHNOLOGY PARK 09

TECH ONE INCUBATOR 10



IP OFFICE 11

PROFESSIONAL DEVELOPMENT OFFICE 12

NUST PLACEMENT OFFICE 12

CORPORATE ADVISORY COUNCIL 13

UNIVERSITY SOCIAL RESPONSIBILITY 14

NUST INSTITUTE OF POLICY STUDIES 16

INTERNATIONAL COLLABORATIONS 17

NUST INTERNSHIP PROGRAMME FOR
INTERNATIONAL STUDENTS 20

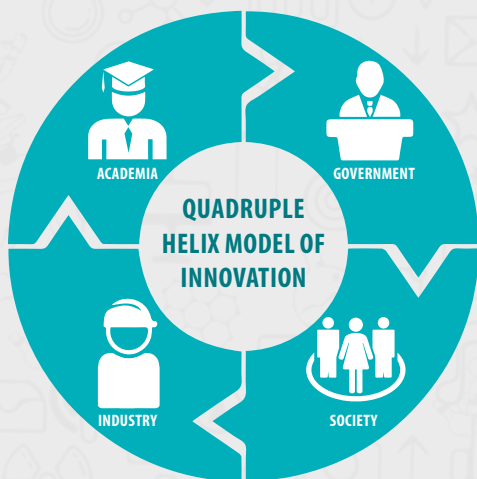
KNOWLEDGE MANAGEMENT ECOSYSTEM

NUST strives to move beyond the conventional roles of knowledge dispensation to knowledge creation, and more importantly, knowledge transfer. Hence it is a third generation university with a growing focus on sustainability. Realising its responsibilities as the leading science & technology university of Pakistan, NUST is responsive to technological change and is aware of industry and societal requirements, thus making a measurable contribution to national socioeconomic development. The university places strong emphasis on building productive relationships with Industry, Government and the Society to exploit the Quadruple Helix Model of nurturing Innovation.

Over the years, external relationships of NUST have grown into meaningful and lasting partnerships. More than 800 industry partners including SMEs, multinationals, large national firms, public sector and non-profit organisations, work with our constituent institutions on mutually beneficial initiatives, across various strands of University-Industry Linkages (UIL). Our partners gain access to the university's state-of-the-art research infrastructure, world-class researchers, and brilliant young students, thereby creating value for the university and the stakeholders, and impacting the technological, social and economic progression of Pakistan.

The **Quadruple Helix Model of Innovation**, where academia, industry, Government and society work together for development, is well demonstrated through the university's close interaction and collaboration with all internal and external stakeholders for institutional and national development.

In order to engage meaningfully with partners, several departments at NUST act as focal points for collaboration in multiple domains. Together, these form an integrated and interdependent ecosystem to help consolidate linkages, facilitate cross-dimensional collaboration, and translate partnerships into mutually beneficial outcomes.



AVENUES OF PARTNERSHIP

DOMAIN	COLLABORATION AREAS
 RESEARCH	<ul style="list-style-type: none"> • Joint research • Joint publications • Joint product / solution development • Joint patents
 NATIONAL SCIENCE & TECHNOLOGY PARK	<ul style="list-style-type: none"> • Become a valued tenant by relocating your innovation centre • Become a sponsor to “Innovate Pakistan” programme • Become an investor in Angel Investment Network and VC Fund • Become a mentor to budding startups
 TECHNOLOGY TRANSFER	<ul style="list-style-type: none"> • Integrating technology with industry • Commercialisation of R&D • Technology transfer advisory services • Licensing and contracting
 INCUBATION	<ul style="list-style-type: none"> • Facilities for entrepreneurs to kick-start their ventures and develop them into viable enterprises • Business development support for startupss • Opportunities for investment in incubation projects • Services by startups companies in cutting-edge domains
 PROFESSIONAL DEVELOPMENT	<ul style="list-style-type: none"> • HR development through corporate/executive trainings and professional diploma courses • Customised training programmes suited to specific organisational needs • Open enrollment workshops in IT, Engineering, Management and Healthcare
 GRADUATE EMPLOYMENT	<ul style="list-style-type: none"> • Meeting employment needs of industry • Connecting potential employees to industry • Arranging industry talk series, recruitment drives and open houses
 INDUSTRY-SPECIFIC R&D	<ul style="list-style-type: none"> • Industry solutions through application of research & development • Curriculum development and enhancement based on industry needs • Innovative solutions for spin-offs
 POLICY ADVOCACY	<ul style="list-style-type: none"> • Collaboration opportunities for think tanks as well as policy and research centres across the world, for conducting joint research • Policy advocacy and recommendations
 PARTNERSHIPS FOR SOCIAL IMPACT	<ul style="list-style-type: none"> • R&D for discernible social impact; SDG-aligned research themes • Partnerships to enhance social impact of R&D being done by students & faculty • Partnerships with CSR initiatives of public and private sector organisations as well as with donor organisations • Scholarships and endowments - to support need-based scholars in pursuit of their dreams by donation against General Endowment, Restricted Endowment, Annual Fund and Zakat Fund
 OTHERS	<ul style="list-style-type: none"> • Partnership opportunities for sponsoring research projects, upgrading laboratories, developing infrastructure, etc • Peacekeeping trainings for civil-military diplomacy among leading international & UN agencies and other associated organisations

NUST RESEARCH THEMES



Smart Cities



Green Energy



Health & Well-Being, Food & Agriculture



Transformative Technology,
Innovation & Shared Value Creation



Digital Futures

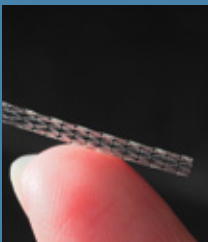


Pakistani Society, Business & Economy

MAJOR RESEARCH AREAS

Aerodynamics	Logistics & Supply Chain Management
Agriculture & Food Security	Manufacturing
AI & Machine Learning	Marine Sciences
Automotive	Marketing
Avionics	Materials
Bio Energy	Mathematics
Bio Medical	Mechanics
Biotechnology	Metallurgy
Chemicals	Mining
Control Systems	Modelling & Simulation
CPEC	Nanotechnology
Cryptography & Cyber Security	Networks & Network Security
Data Management	Neuro Sciences & Neuroinformatics
Disaster Management	Operations Management
Economics	Petroleum
Education	Physics
Energy Management	Polymers
Energy Storage	Power Electronics
Engineering Management	PV Technology
Environment & Climate Change	RF, Microwave & Telecom
Finance	Robotics
Fluid Dynamics	Social Sciences & Humanities
Geoinformatics	Software
Health	Space Technology
Hydro Energy	Thermal Energy
ICs & Electronics	Thermodynamics
Image, Video & Signal Processing	Transportation
Industrial Management	Urban Development
Infrastructure	Water & Sanitation
Internet of Things	Wind Energy

FROM R&D TO DEPLOYMENT



Medical Devices Development Centre (MDDC)

- Groundbreaking initiative in Pakistan's medical devices industry.
- Funded by Pakistan's Ministry of Science & Technology (MoST) and Planning Commission of Pakistan.
- The country's first facility for production of certified cardiac stents & angioplasty balloon catheters.
- MDDC will make angioplasty kits & cardiac stents available to general public at a fraction of the price of imported devices.



Wastewater Treatment Plant at NUST

- NUST meets its own water requirement for horticulture through deploying wastewater treatment plants designed and developed by the university's researchers.
- The plant uses wastewater generated from offices, hostels & residential colony.
- Saves precious water resource.

PAKISTAN'S FIRST UNIVERSITY TO TRANSFER TECHNOLOGY TO INDUSTRY

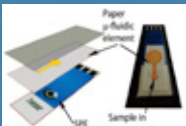
SPOT TB

ASAB

3 IPRs

PHARMATECH PAKISTAN PVT LTD

ATTA-UR-RAHMAN SCHOOL OF APPLIED BIOSCIENCES



A hand-handled robust electrochemical biosensor to specifically and distinguishably identify Tuberculosis (TB), Multi Drug Resistant (MDR)-TB and Extensively Drug Resistant (XDR)-TB with Drug Susceptibility Testing (DST) module. This is an advanced portable alternate solution to existing GeneXpert sensing with improved testing time,

specificity to TB type and DST in order to screen population for early TB diagnosis in resourceless remote areas.

SMART WOUND MANAGEMENT DEVICE (SWMD)

ASAB

1 IPR

PHARMATECH PAKISTAN PVT LTD

ATTA-UR-RAHMAN SCHOOL OF APPLIED BIOSCIENCES



The SWMD acts as a drug delivery system, which is an electronically controlled bandage, that monitors wound health in real time and delivers drug according to the wound condition. This

device is only applicable for smaller superficial wounds and can be worn over a number of days and obviates the need for frequent dressing changes. The device will be programmed to deliver the drug at precisely timed dosing intervals.

LEATHER FLESHLING & SHAVING BLADES

CEME

2 IPRs

SRC PVT LTD

COLLEGE OF ELECTRICAL & MECHANICAL ENGINEERING



Fleshling and shaving blades are used in Pakistani tanneries sector with current import of PKR 750M. With the aim of import substitution, these blades have been redesigned optimally, reducing frequent replacements. SRC will now

manufacture these blades locally, thus offering quality indigenous blades at significantly reduced cost, leading to substantial savings in foreign exchange.

3-PHASE LOAD BALANCER

PNEC

1 IPR

BOLTS PVT LTD

PAKISTAN NAVY ENGINEERING COLLEGE



3PLB device is a power electronic device which optimises power consumption through uniform distribution of current in all three phases, hence eliminating the neutral current flow. The technology reduces electricity bills by up to 20%.

RESHAPING ONLINE CONSUMER EXPERIENCE WITH DATA DRIVEN PERSONALISED CHATBOTS

SEECs

5 IPRs

AARZ MEDIA PVT LTD

SCHOOL OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE



This is the first project secured by NUST from HEC's Technology Development Fund (TDF). The Chatbot not only remembers the context of a conversation, but also recommends the right products to the user within the chat session.

REAL-TIME HEALTH MONITORING OF PMTs

PNEC

3 IPRs

BOLTS PVT LTD

PAKISTAN NAVY ENGINEERING COLLEGE



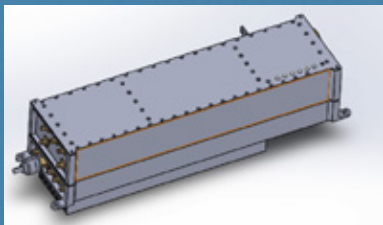
This system is able to reflect the health of transformers during its operation in real time as a component of smart grid, using intrusive and non-intrusive parameters, so that engineers can take proper preventive measures before minor issues become major faults.

S-BAND TRR MODULE FOR PHASED-ARRAY RADARS

RIMMS → **1 IPR**

ARRAYTECH

RESEARCH INSTITUTE FOR MICROWAVE & MILLIMETER-WAVE STUDIES



A Transmit-Receive-Receive (TRR) module has been developed for phased array mono-pulse radar for ground based systems. This radar technique enables target detection with a single pulse, as opposed to conventional techniques of emitting multiple pulses in different directions and looking for maximum return. The project was a successful indigenisation effort for

potential use in air-traffic control and surveillance applications through academia-industry partnership between NUST-RIMMS and RWR (Pvt.) Ltd.

PROJECT FOR AUTISTIC CHILDREN

SEECs → **3 IPRs**

AWAAZ AI TECH

SCHOOL OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE



This is an AI-based application which will provide interactive learning modules for Autistic Children ultimately creating an impact.

SINGLE DIAGNOSTIC KIT TO DETECT MULTIPLE VIRUSES

ASAB → **3 IPRs**

VIROSCAN

ATTA-UR-RAHMAN SCHOOL OF APPLIED BIOSCIENCES



This kit detects viruses like HIV, HCV and HBV simultaneously. Simple, non-invasive, low cost paper strip would help in early diagnosis at home. The lateral flow assay used for the development of this diagnostic kit is based on six specialized parts of paper based strip: sample pad, conjugate pad, nitrocellulose, test line, control line and adsorbent pad. Of these regions the conjugate pad, test line and control line are of importance with respect to specificity of diagnosis. Once saliva is applied to the sample pad, capillary action leads it to conjugate pad, where it specifically binds and is detected via colour change.

RESEARCH OUTPUT & FACILITIES

330+ labs

35 key laboratories

- Electromagnetic Compatibility & Interference
- Anechoic Chamber
- Neuro-informatics
- Robotics & Artificial Intelligence
- GPU-based Super Computing
- Supersonic Wind Tunnel

Technology Innovation Support Centre of the World Intellectual Property Office (WIPO) is being established at NUST

15,000+ Journal & Conference publications

Research Funding in excess of
USD 31.15M

Well established **Technology Transfer Office**, diffusing the university's innovation to local industry for societal impact

US Pakistan Center for Advanced Studies in Energy (USPCAS-E)

International academic linkages with **170 Institutions** in **35 countries**

Pakistan's 1st Patent Wall to recognise contributions of NUST inventors

666 IPRs filed and **117 IPRs**

NUST Manufacturing Resource Centre
Design, prototyping & small-scale manufacturing of parts

Pakistan's first national centres of excellence in **Artificial Intelligence** and **Robotics & Automation** established at NUST

China Pakistan Technology Transfer Centre (CPTTC)
Pakistan's first international technology transfer avenue in collaboration with China International Technology Transfer Centre (CITTC)

National Science & Technology Park (NSTP)
Pakistan's first Science & Technology Park and the country's largest innovation ecosystem

NATIONAL SCIENCE & TECHNOLOGY PARK - NSTP

CONVERGENCE OF NUST KNOWLEDGE ECOSYSTEM



NUST has proudly launched the country's first Science & Technology Park at its Islamabad campus. Inaugurated by Prime Minister of Pakistan, H.E Imran Khan, on December 9, 2019, NSTP brings together industry and academia to create a national research and innovation ecosystem. NSTP houses tech-based startups, hi-tech SMEs, innovation centres of large multinationals and corporations, and industrial and business innovation centres. It facilitates hi-tech R&D in 8 thematic sectors in the first phase, with more sectors to be added with time; the 8 sectors include Agri Tech, Auto Tech, Def Tech, Ed Tech, Energy Tech, Fin Tech, Health Tech and Smart Tech.

NSTP provides the perfect launching pad for new ideas, products and businesses; adding value to the technological index of Pakistan, creating numerous job opportunities, and contributing to the knowledge economy.

As of now, 50+ national and international companies, including Turkish Aerospace Industries, Hytera Communications from China, ABB from Switzerland, APIMatic from New Zealand, Rapidev from UAE, to name a few, have already joined the innovation ecosystem as tenants, while others are aspiring to.

H.E Imran Khan, Prime Minister Islamic Republic of Pakistan, inaugurating the National Science & Technology Park (NSTP)



DEFINING INNOVATION



TECH ONE Incubator

(Formerly known as Technology Incubation Centre - TIC NUST)

Established in 2005 as Pakistan's first university based technology incubation centre, TechOne provides a nurturing environment for technology-based startups to help them become commercially viable enterprises. Tech One also provides a platform for NUST faculty and students to establish their own technology-based business ventures.



OUTPUT

- » 59 high-tech companies graduated till date, contributing more than USD 7.7 Million to national economy
- » 20 startups currently incubated

SUCCESS STORIES

- » **Poulta:** Agri Tech startup focusing on poultry sector; raised seed funding from notable Silicon Valley venture capitalist Tim Draper
- » **Turnotech:** Global telecommunication technical consulting, services and outsourcing company that operates in 4 countries (Pakistan, USA, Australia and UAE)
- » **Tunacode:** Accelerated computing startup that was acquired by a Saudi Arabian business group
- » **eMumba:** A cutting-edge software technology firm led by Silicon Valley veterans that is now home to 150 world class engineers and designers, with more than 40 customers world-wide
- » **Cowlar:** Accepted into Y Combinator, the world's no.1 accelerator based in Silicon Valley and raised \$1.4 million funding from celebrity investor Ashton Kutcher
- » **Wonderful Engineering:** One of the world's top e-magazines for Engineering news, with 6 million Monthly Active Users
- » **LearnOBots:** Pioneers of STEAM education in Pakistan and creators of the world's first DIY software to solve scalability & teacher training problem in STEAM
- » **Orbit:** Augmented reality based educational application that was selected in international accelerator programme Startupbootcamp in Amsterdam, Netherlands, and LearnLaunch in Boston, USA
- » **APIMatic:** One of the world's leading SaaS platforms aimed at the API economy with enterprise customers, such as Tripadvisor, Telstra, Expedia and others
- » **PackageX:** Innovative package management solution with real estate giant WeWork as one of their global enterprise customers
- » **InventHub:** Hardware design and collaboration platform that recently raised investment from a billionaire investor of Silicon Valley who was an early investor in Tesla, Baidu, Hotmail, Robinhood and many more

Since its inception, Tech One has generated employment for over 850 knowledge workers and provided trainings to universities as well as organisations under the umbrella of Ministry of Science & Technology (MoST).

Tech One NUST recently concluded a global acceleration programme, under which 12 incubatees were immersed in Silicon Valley for 3 months and successfully raised \$750,000 in seed funding. In addition, a UK-funded programme, IIm Ideas, recently completed its 2nd phase for 10 Ed Tech based startups at Tech One.

IP OFFICE

IPRs FILED: 666 AWARDED: 117
the highest numbers by any
Pakistani university

With an increase in the knowledge-driven economy, Intellectual Property (IP) is a key consideration in day-to-day business decisions. New products, brands and creative designs appear almost daily on the market and are the result of continuous human innovation and creativity. IP system enables researchers/companies/entrepreneurs to profit from their innovation capacity and creativity, which encourages and helps fund further innovation. Keeping in view the importance of Intellectual Property, NUST established NUST Intellectual Property Office – the first IP office in Pakistani academia – at its Centre of Innovation & Entrepreneurship (CIE) in 2009.

Mission Statement

To protect the research that is being carried out at NUST by filing IPs with relevant intellectual property offices around the globe in order to encourage the researchers towards innovation, and foster their entrepreneurial spirit leading to new products and services for the competitive local and global market.

Objectives

- » Promote Intellectual Property at the university by organising IP awareness seminars/workshops/lectures
- » Evaluate new technologies for patentability
- » To extend Intellectual Property Rights related services nationwide
- » Maintain close liaison with WIPO and IPO Pakistan as well as other related agencies

Services Offered

- » Facilitate researchers/scientists/companies of NUST, NSTP and other universities in drafting and filing of IP applications with local and foreign patent office(s), as applicable
- » Pursue approval of IPs filed with IPO Pakistan and other filing offices
- » Manage all the stages of IP lifecycle
- » Provide legal advice and services to researches/inventors
- » Update policies concerning intellectual property
- » Provide services related to evaluation of products/innovations
- » Availability of extensive patent search platform and associated publications
- » Providing basic information on IP laws and IP filing etc

PROFESSIONAL DEVELOPMENT CENTRE - PDC

The competitive edge you need!

Since its establishment in 2007, NUST Professional Development Centre (PDC) has become a benchmark in providing continued education and professional development. The Centre offers workshops, trainings, diplomas, executive education and short courses to career-oriented individuals from a wide spectrum of industries. PDC has a rich pool of highly qualified trainers and industry experts, who design short courses and management development programmes for industries. The Centre works to enable working professionals to remain abreast with the latest developments in their respective disciplines, thus enhancing their knowledge, employability and managerial skills. PDC also develops customised courses to meet specific needs of valuable clients. The Centre has trained 13,700+ professionals from 1,000+ organisations in 750+ workshops since 2008. Amongst its clients are blue chip companies like Nestle, P&G, Jazz, Zong, Fauji Group of companies, Hashoo Group, Bahria Town, CIMMYT, EU, Mitsubishi, Huawei, Mari Petroleum, etc.

The core areas of trainings and diplomas offered by PDC include:

- » Management & Leadership Development
- » Accounting & Finance
- » Human Resource Management
- » Marketing and Sales
- » Corporate Governance
- » Information Technology
- » Data Analytics
- » Project Management
- » Engineering
- » Renewable Energy
- » Healthcare Management
- » Artificial Intelligence
- » Corporate Governance

NUST PLACEMENT OFFICE - NPO

Ensuring graduate employment

The office builds and maintains linkages with local industry in order to promote NUST graduates as the premium choice for employers. We ensure 100% summer internships of UG students in the first three years of their respective degree programmes, so as to enable them to link the theoretical knowledge gained at the university with the practical world. In addition, students get these internships in accordance with their demographic distribution, field of study and area of interest. This is one of the reasons that almost 70% of our graduates get hired within six months of their graduation. NUST has been ranked No 1 in 'Partnerships with Employers' in Pakistan by QS World University Rankings 2020.

NUST Placement Office facilitates largest number of on-campus recruitment drives for our industry partners, and arranges a number of industry sessions and alumni talk series to ensure maximum placement opportunities for our students and graduates. Apart from instilling core academic competencies amongst students, NUST pays special attention to grooming their soft skills, which is why Nustians tend to be the first choice of top-notch firms.

CORPORATE ADVISORY COUNCIL - CAC

Bringing industry on board

- » Established in 2010, NUST CAC engages industry and business leaders from a wide range of sectors of the economy, which have been carefully selected and mapped on the basis of academic and research expertise of NUST.
- » Each Sector Committee, headed by an Industry Co-Chair and a NUST Co-Chair, consists of 10-15 members representing large national organisations, multinationals, SMEs and startups. The Committee members combine their leadership and experience, and work towards corporate-university liaison for research, resource generation, international collaborations and entrepreneurship.

Domains of industry collaboration at CAC include:

- » Industry outreach; establishing relationships and building trust
- » Collaborative projects/programmes/events, including Finding Innovative & Creative Solutions for Society (FICS)
- » Industry-relevant improvements and additions in NUST curriculum
- » Industry-sponsored faculty and student projects
- » Policy input & advocacy for socio-economic growth
- » Student industry visits and industry innovation talks
- » Faculty placement in the industry
- » Representation of industry at academic forums



CAC SECTORS



Green Energy



Pakistani Society, Business & Economy



Health & Well-being, Food & Agriculture



Digital Futures



Transformative Technology, Innovation & Shared Value Creation



Smart Cities

UNIVERSITY SOCIAL RESPONSIBILITY - USR



NUST prides itself in being a socially responsible institution with an aim to give back to the community. The university has undertaken the following USR steps:

COMMUNITY SERVICE LEARNING COURSE: A 2 credit-hour course is conducted at NUST, which is mandatory for undergraduate students from all disciplines. Around 600 students are enrolled in the course each semester, and are required to gain field experience as part of the curriculum.

INTERNSHIPS IN COMMUNITY BASED ORGANISATIONS: A 4-week internship is facilitated for all 1st year undergraduate students in various organisations involved in community service. During this internship, students remain actively engaged in offering their valuable services towards social well being, education for underprivileged and disaster & relief efforts.

NUST COMMUNITY SERVICES CLUB (NCSC): A student association comprising voluntary participation by over 5,000 students from all NUST constituent Schools at the Islamabad campus, NCSC actively works in 4 focus areas – Social Well-Being, Disaster Relief & Response, Education for Empowerment and Leadership & Social Skills. A number of initiatives within these 4 domains have students working alongside NGOs, development organisations, funding organisations, donors, private sector organisations, Government establishments and the communities.



Going Green

In recognition of its civic responsibilities, NUST has been taking measures to preserve and improve greenery at all its campuses. On-campus plantation drives are conducted regularly - close to **100,000** trees have been planted at our Islamabad campus till date.

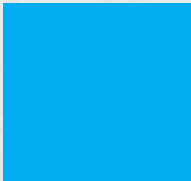
FINDING INNOVATIVE & CREATIVE SOLUTIONS FOR SOCIETY - FICS: An intra-NUST programme aimed at promoting social entrepreneurship, FICS aligns the university's R&D to societal needs, and encourages NUST students to develop technology-based solutions for the most pressing problems of the Pakistani society. FICS is closely aligned with the United Nations Sustainable Development Goals (SDGs), and every year over 300 projects from different SDG domains; Energy, Environment, Education, Citizen Safety, Sustainable Cities, Clean Water & Sanitation, Agriculture, etc., are registered.

Industry partnership is at the heart of this programme, as FICS involves industry from the very beginning, and keeps them engaged as mentors, judges and sponsors throughout the competition and beyond.

UNIVERSITY ADVANCEMENT & NEED-BASED SCHOLARSHIPS: The NUST University Advancement Office (UAO) develops and executes strategies to support the university through fundraising, endowment building and strengthening relations with donor organisations, philanthropists and alumni. Through its NUST Endowment for Educational Development (NEED) initiative, the office offers the following sustainable avenues for collaboration:

» **Support the Scholars Programme:** In order to realise its vision of becoming a need-blind institution, NUST Endowment for Educational Development (NEED) initiative has introduced Support the Scholars Programme. The programme invites the community to partner with NUST to develop scholarship options for the deserving students on a sustainable basis, and encourages the University's partners to contribute to the endowment, annual, and Shariah compliant zakat-based models.

» **Support the Programme:** Through this programme, the Initiative offers our valued partners to join hands with us in developing the infrastructure of the university, and establishing collaborations that can help the institution enhance its ecosystem of transformative higher education.



Students developing energy-efficient solutions at NUST



NUST Institute of Policy Studies (NIPS)

Nation-building policy advocacy

NUST is a key player in nation-building through human resource development, advancement of science & technology, promotion of entrepreneurship and innovation, and national policy formulation, to facilitate the creation of Knowledge Economy. The university plays an instrumental role in the country's positive image building and perception management through active interaction within and outside of Pakistan.

Launched on April 3, 2019, the NUST Institute of Policy Studies (NIPS) has been established to utilise the high policy formulation and advisory potential of the university, in line with the best practices of the top university-affiliated think tanks in the world.



RESEARCH AREAS

ECONOMY, GOVERNANCE
& SOCIOECONOMIC
DEVELOPMENT

IR, GEOPOLITICS
& SECURITY

CPEC AND BELT &
ROAD INITIATIVE

WATER ENERGY &
ENVIRONMENT

POLICY FORMULATION FOR KNOWLEDGE
ECONOMY & SCIENCE PARKS

Objectives

NIPS functions under the following core objectives: -

- » High-quality research and analysis in key domains of national, regional, and global significance
- » Policy intervention/advocacy in key domains of national development
- » Bridging the gap between knowledge production and policy formulation
- » Identification of projects for socioeconomic development having national impact
- » Promotion of academia-industry linkages

INTERNATIONAL COLLABORATIONS

Over the years, NUST has forged meaningful ties with some of the most prestigious universities and organisations around the globe. These partnerships draw upon corresponding strengths for the two-way flow of knowledge. The partnership avenues are inclusive of, but not limited to, the following areas:

- » Establishment of joint study & research centres in a plethora of fields (e.g. CPTTC & USPCAS-E)
- » Applied research in emerging fields in conformance with current and impending needs
- » Student & faculty exchange
- » Internships for international students under IAESTE and NIPIS
- » Joint conferences/workshops/seminars in cutting-edge fields



COLLABORATION WITH **170 UNIVERSITIES/ ORGANISATIONS** FROM **35 COUNTRIES**

NUST has valid MoUs with 56 international universities across the world



Arizona State University (ASU)

Under NUST-ASU partnership, NUST students & faculty spend a semester each at ASU to carry out energy-related research at state-of-the-art laboratories under USPCAS-E project. So far, as many as 75 MS & PhD scholars and 10 faculty members have undertaken exchange at ASU and Oregon State University under the collaboration.

NUST and ASU have also undertaken a number of joint applied research projects. In addition, NUST has conducted 12 joint workshops in alliance with ASU to discuss the ongoing energy trends in Pakistan and proposed developments.

North Dakota State University (NDSU)

NUST has produced numerous joint research publications in collaboration with NDSU. Furthermore, 4 NUST scholars obtained their higher degrees at NDSU under the NUST Faculty Development Programme.

University of Missouri-Kansas City (UMKC)

UMKC faculty members are on the panel of NUST School of Electrical Engineering & Computer Science's International Advisory Board. The UKMC faculty have also offered their expertise to be co-evaluators of NUST scholars' PhD Theses. So far, 8 NUST UG, MS & PhD students have availed semester exchange at UMKC, 4 NUST faculty members have taught a semester each at University of Missouri-Kansas City as exchange faculty. In addition, 7 NUST students availed scholarships for MS at University of Missouri-Kansas City.

George Mason University (GMU)

Under the partnership with GMU, NUST scholar Syed Mustafa Hassan proceeded to GMU, USA, for PhD in Innovative Technologies in Education, Design & Gamification of Pakistan Science Curriculum for Rural Schools.

Cornell University

NUST currently is in talks with Cornell University to establish collaboration in a wide range of academic domains, i.e., students, scholars & faculty exchange, joint projects and joint publications.

United States Education Foundation of Pakistan (USEFP)

NUST students and scholars secured following opportunities under the USEFP Programmes for 2017 and 2018:

	Programme Name	Grantees 2017			Grantees 2018		
		Male	Female	Total	Male	Female	Total
1	Fulbright Master's	5	9	14	15	6	21
2	Fulbright PhD	6	5	11	2	4	6
3	Fulbright Scholar	0	1	1	0	0	0
4	Global Undergraduate Exchange	7	2	9	14	14	28
	Total	18	17	35	31	24	55

Collaboration with Chinese institutions

NUST also has active collaborations with a number of Chinese Universities, including Tsinghua University, Peking University, Xian Jiao Tong University, North China Electric Power University, Shenyang Aerospace University and Communication University of China, to name a few. Each year, a good number of students avail fully funded scholarships at different Chinese universities for MS & PhD programmes through the Chinese Government scholarships. NUST has become part of a number of university alliances/ networks of the region to consolidate efforts of regional HEIs by leveraging each other's strengths.

- » In January 2016, NUST established CPEC cell in its Chinese Studies Centre (CSC)
- » Beijing Forum-Islamabad was held at NUST in May 2016. The event was the first to be held outside of China and was jointly organised by NUST and the Peking University
- » The first conference of the CPEC Consortium of Business Schools was hosted by NUST in August 2017
- » NUST & Beihang University have joined hands to establish BeiDou Belt & Road School at NUST
- » NUST & Chang'an University, China, are in discussion for initiating joint Civil Engineering degree programme
- » NUST is partnering with China International Technology Transfer Centre (CITTC) to establish China Pakistan Technology Transfer Centre at NUST



Student & Faculty Exchange with Turkish Universities

The highest number of NUST Student & faculty exchange agreements are with Turkish universities under the Turkish Governments Mevlana Exchange Programme. Every year, a number of NUST's students join Turkish universities as exchange students. Tuition fee for NUST students is waived off by the host university in addition to provision of a stipend to cover living expenses. NUST's partnerships with Middle East Technical University, Akdeniz University, Inonu University, Yildiz University, etc., have yielded more than 50 student & faculty exchanges over the last 4-5 years.

NUST INTERNSHIP PROGRAMME FOR INTERNATIONAL STUDENTS (NIPIS)

Programme launched in 2018

NIPIS 2019

51 foreign interns from 26 countries attended the internship at NUST in 2019, including those from NIPIS, International Association for the Exchange of Students for Technical Experience (IAESTE), and Association for the International Exchange of Students in Economics & Commerce (AIESEC).

INTERNSHIP FIELDS

- » Physics
- » Transportation
- » Marketing
- » Computer Science
- » Chemistry
- » Engineering (all fields)
- » Economics
- » Architecture
- » Psychology
- » Business Administration
- » Accounting
- » Geographical Information Systems
- » Mathematics
- » Environment & Sustainability
- » Biotechnology
- » Human Resource Management

Internship fields in National Science & Technology Park (NSTP) under 8 thematic areas:

- » Agri Tech
- » Auto Tech
- » Def Tech
- » Ed Tech
- » Energy Tech
- » Fin Tech
- » Health Tech
- » Smart Tech



NIPIS 2019

- » 4 weeks duration
- » Supervision by subject matter experts
- » Hands-on experience in labs and research facilities
- » Visits to local industries and tourist spots

Facilities

- ✓ On-campus accommodation in secure environment
- ✓ Meals & transportation facilities
- ✓ Support for visa processing

Eligibility: International students

APPLY NOW: <https://tinyurl.com/ybw2smq2>

CONTACT US

Innovation & Commercialisation Directorate – I&C
info@ric.nust.edu.pk

National Science & Technology Park – NSTP
info@nstp.pk

Tech One
info@techone.nust.edu.pk

Professional Development Centre – PDC
bdm@pdc.nust.edu.pk

NUST Placement Office – NPO
info@npo.nust.edu.pk

Corporate Advisory Council - CAC
cac@nust.edu.pk

Finding Innovative & Creative Solutions for Society – FICS
cac@nust.edu.pk

University Advancement Office – UAO
advancement@nust.edu.pk



National University of Sciences & Technology
Islamabad | Rawalpindi | Risalpur | Karachi | Quetta

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