



ORIC



APRIL 2023

*COURAGE TO INNOVATE (C2I)*

# ORIC NTU NEWSLETTER

**"SUCCESS IS NOT FINAL; FAILURE IS NOT FATAL: IT  
IS THE COURAGE TO CONTINUE THAT COUNTS"**  
**WINSTON CHURCHILL**

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# EDITOR'S NOTE

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalamulaikum

Respected Readers,

It is my pleasure to present the latest ORIC NTU newsletter to you in this blessed month of Ramadan. Universities across the world are considered as vital agents of change. Pakistan being a responsible nation of the World has done well to establish Universities. Now it's time to turn these Universities into Innovation hubs by promoting applied research, bridging academia-industry gap, commercializing technologies and developing research products. Keeping in view the modern demands of education, Higher Education Commission of Pakistan established Office of Research, Innovation and Commercialization(ORIC) at different Universities of the Country. Establishing ORICs is a revolutionary initiative of HEC. The purpose of ORIC is to assist, support and facilitate Research, Innovation and Commercialization at National Textile University.

National Textile University, Faisalabad is a research intensive, multidisciplinary University. It has the privilege of serving the largest industry of the country i.e. Textile Industry of Pakistan. The vibrant research community of NTU has been contributing to the research output in form of research publications, carrying out projects, winning research grants, and developing research products. This newsletter provides a birds' eye view of the ORIC relevant activities at NTU Faisalabad. We Hope that you will find it useful, and you will provide your valuable feedback. The ORIC NTU is looking forward to research & commercialization collaborations with the established ORICs at the Higher Education Institutions of Pakistan.

*Wishing you a blessed and peaceful Ramadan, May Allah be with you and put barakah in all what you do*



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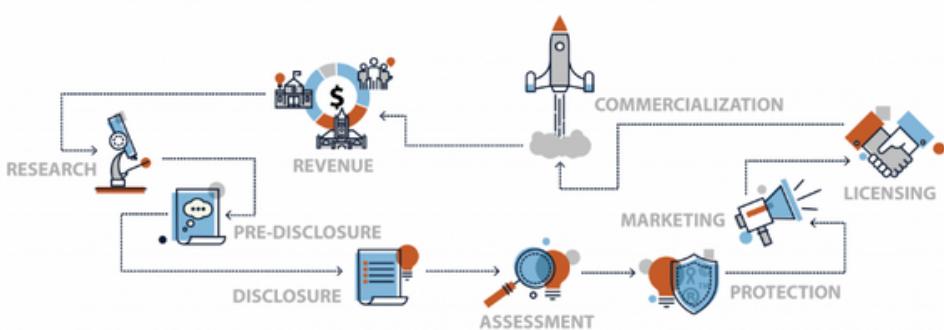
# SERVICES PROVIDED BY ORIC

- **Short Research Support Program:** ORIC facilitated the 3 Phases of the Short Research Support Program where research grants were provided to fresh Ph.D. faculty to acclimatize them to the research process.
- **Research Grants:** ORIC facilitates the application submission of faculty for different research grants.
- **Research Publications:** ORIC maintains the Publications record of NTU Faculty.
- **Lectures/ Seminars of Subjects Expert:** ORIC facilitates arranging Workshops, Seminars, and Symposiums. The faculty members are facilitated by ORIC in Organizing the workshops.
- **Capacity Building Initiatives for Faculty:** ORIC arranges and facilitates Capacity Building initiatives for Faculty in areas related to Research, Technology, Innovation, and Academics.
- **Fresh Faculty Mentoring:** ORIC NTU is initiating a Fresh faculty mentoring program aimed to provide mentoring facility to the Junior faculty.

# SERVICES PROVIDED BY ORIC

- **International Travel Grants:** Facilitates International Travel Grant applications to HEC by faculty & Ph.D. Scholars.
- **Research Expos:** ORIC will arrange and facilitate research display events, to encourage industry and market linkages.
- **Intellectual Property Management:** ORIC Provides facilitation for filing Intellectual Property applications of Inventions and Innovations to IPO Pakistan as well as for International Patent Rights including Trademarks, copyright, and Industrial Designs.

## Commercialization Process



*Credits:UNHinnovation*

For guidance, facilitation, and information on any of ORIC's services, reach out to the ORIC via [oric@ntu.edu.pk](mailto:oric@ntu.edu.pk)

# NTU PERFORMANCE AT A GLANCE

Rs. 89.6  
Million

Approved  
Funding

14

Industrial  
Consultancies

7

Internationals  
MoUs

11

National  
MoUs

# KNOWTEX AT VC'S FORUM

The KNOWTEX Project led by Dr. Yasir Nawab (Dean SET, NTU & PI GCF-63) was one of the 5 Projects shortlisted by HEC for Technology Showcase at 5th Vice Chancellors Forum 2023 held at Marriott Hotels, Islamabad on March 19-20.



# RESEARCH SUCCESS STORIES

The Higher Education Commission of Pakistan initiated a Project called as Technology Development Fund (TDF). The purpose of the Project was to create academia-industry joint multi-disciplinary and multi-institutional leading to products or services which solve a current problem of industry/society or identify a new opportunity of business that leads to positive cash-flows.

National Technology University won 10 TDF Projects and successfully completed it. Following are the highlighted projects.

**Project Title: Indigenous development of Smart, Safe & Comfortable (S2C) Helmets for civil and combat applications**



PI Name: Dr. Yasir Nawab

## Project Brief:

Combat Helmets are used by Soldiers to protect their heads from strikes while civilians use the motorcycle helmets for protections against head injuries in case of accidents. Both civil and military helmets are imported and those are not designed as per the local environment of Pakistan (motorcyclists don't use it due to suffocated design). Indigenously developed helmets will not only be cheap but at the same time more eco-friendly. It will reduce dependence of Pakistan on imported helmets (civil and military). It will also create new business opportunities in the country.

# INDIGENOUS DEVELOPMENT OF SMART, SAFE & COMFORTABLE (S2C) HELMETS FOR CIVIL AND COMBAT APPLICATIONS

## Products Developed

Design and development of 3D printed motorcyclist helmet shell  
Combat and Civilian Helmets were indigenously developed by the NTU researchers which were light weight, cost effective and according to the environmental conditions of Pakistan



*Design and development of 3D printed motorcyclist helmet shell*



*Combat Helmet Prototypes*



*Finished indigenously developed motorcyclist helmet*

# RESEARCH SUCCESS STORIES

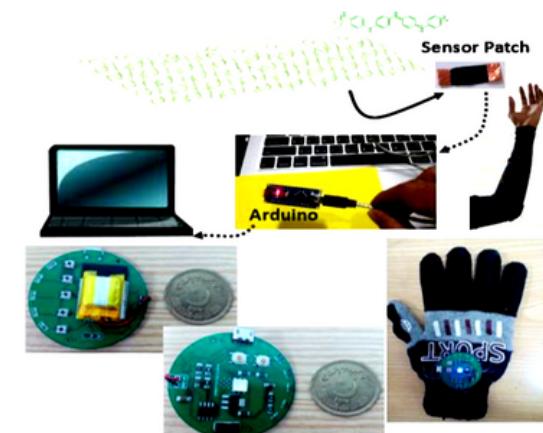
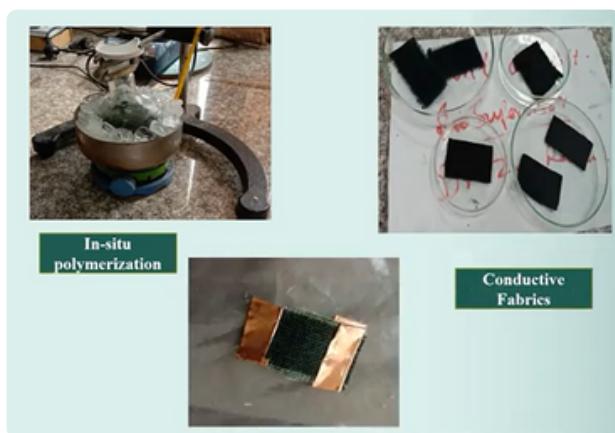
**Project Title: Development of Textile based smart sensor for human health monitoring**



PI Name: Dr. Zulfiqar Ali Rehan

## Project Brief:

The purpose of the project was to develop a smart flexible textile-based sensor that are lightweight and easily processable, used for monitoring the human body physiological parameters such as pulse and heart beat rate and motion of players. A large population is unaware about the sudden problems associated with their health due to casual in the health checkup. The health monitoring sensors can provide in time changes in different health parameters including heartbeat, blood pressure etc. Wearable textile based sensors are flexible, lightweight and easily acquire body shape and are best suitable for monitoring of health related activities.



# RESEARCH SUCCESS STORIES

***Project Title: Development of Comfortable Compression Socks for Treatment of Varicose Veins or Chronic Venous Disease in Legs***



PI Name: Dr. Hafsa Jamshed

## Project Brief:

Chronic venous disease (CVD) comprises morphological and functional abnormalities of the venous system of long duration. If the valves within the veins of the lower body limbs, such as legs, fail to work properly, blood can flow backwards in the veins towards the feet, resulting in pooled blood, which in turn can lead to swelling of the legs and associated symptoms. CVD can negatively affect patients' quality of life as it is a painful and disabling disease that can restrict physical functioning and mobility and, is associated with depression and social isolation. Varicose veins are often the first sign of CVD. CVD is a progressive disease that can lead to disease related complications like venous ulceration. The key to limiting the social and economic impact of the disease in a population that is living longer is prevention, and correct treatment of the condition. CVD is extremely common in the world, affecting up to 40% of general population, especially women. Knitted medical stockings designed for the treatment of venous diseases are highly recommended for compression therapy. Compression stockings create negative pressure which reduces venous reflux and blood pooling in the legs. They are very effective against symptoms and prevent blood clots from forming in the superficial veins. They are also the maintenance therapy of choice once venous ulcers have healed. These compression socks must have both comfort and appropriate level of compression.

# DEVELOPMENT OF COMFORTABLE COMPRESSION SOCKS FOR TREATMENT OF VARICOSE VEINS OR CHRONIC VENOUS DISEASE IN LEGS

## Developed Product



# KNOWTEX INTERNATIONAL CONFERENCE AT NTU

The 2nd International Conference on Knowledge-Based Textile took place at the National Textile University, Faisalabad on 14th-15th February 2023. The conference was organized by the School of Engineering and Technology under the Grand Challenge Fund Project (KnowTex) and co-organized by seven institutes and universities, including three national and four international co-organizers: Donghua University, China, University Technology Malaysia, Malaysia, Northumbria University, UK, and Taxonomy, UK, and at national level NED University, Karachi, BUITEMS Quetta, and Pakistan Circular Fashion Council.



# ORIC ACTIVITIES

## Workshops, Exhibitions, Seminars

### ONE DAY HANDS-ON WORKSHOP ON PATENT CLAIMS DRAFTING

**Date & Time:**  
Friday, 10th March 2023  
9:30 am - 4:00 pm

**Location:**  
BIC Training Hall, 2nd Floor, NTRC Building, NTU Faisalabad

**Resource Person:**  
Ms. Shakira Khurshid  
Senior Examiner of Patents  
Intellectual Property Office Pakistan

**Last Date of Registration:**  
6th March 2023

**REGISTRATION FEE:**  
RS. 2500  
Limited Seats Available

**REGISTER NOW**

**FOR DETAILS CONTACT:**  
Amar Ali Khan  
Deputy Director, ORIC, NTU Faisalabad  
0345-9305219 oric@ntu.edu.pk

**Topics to be discussed:**

- What are Patent Claims
- Format of Patent
- Removing Patent Draft Objections
- Patent Claim Drafting Techniques
- Exercise on Patent Claim Drafting



## Patent Claims Drafting Workshop

Recognizing the importance of Innovation and the role of Intellectual Property Rights, the ORIC NTU Organized a One day Hand on Workshop on Patent Claims Drafting. Miss. Shakira Khurshid (Senior Examiner of Patents, IPO Pakistan) conducted the Workshop. 22 Faculty Members from different schools of NTU participated in the Workshop. The faculty members actively took part in the Claim Drafting Exercises.

The participants appreciated the ORIC initiative and wished that similar workshops are arranged in the future as well. Mr. Amar Ali Khan Deputy Director ORIC gave the Certificate of Appreciation to the resource person Miss. Shakira Khurshid.



# ORIC ACTIVITIES

## Workshops, Exhibitions, Seminars



**Paid Industrial Training Workshop “Development of staff Training on Designing, Application of compression stockings.” Organized by ORIC**



**Workshop reviews Pakistan’s organic policy plans for more sustainable food and cotton production**

Mr. Muhammad Waqas from ORIC participated in the workshop. The review workshop was an important platform to discuss the country’s plans for policies and regulations toward greater organic agriculture including the production of food and cotton (Credit: CABI).



**NTU-ORIC participated in 13th International Garment & Textile Machinery Exhibition and Conference at Expo Center, Lahore as Knowledge partner.**

# ORIC ACTIVITIES

## INDUSTRIAL VISITS



Mr. M. Waqas, Deputy Director Industrial Liaison visited Kamal Textiles



Rafhan Maize Products officials visited NTU Labs



PULCRA Chemicals officials visited NTU Labs



USB Certification officials visited NTU Labs



Mr. M. Waqas, Deputy Director Industrial Liaison visited LAHORE FASHIONS



Mr. M. Waqas, Deputy Director Industrial Liaison visited AZ Apparel

# ORIC ACTIVITIES

## INDUSTRIAL VISITS



MoU signing with CERTICO Islamabad at Director ORIC office



GULFTIC-EIPL team visited NTRC-ORIC



Mr. Saif-ul-Islam from Ahmad Jamal Fabrics visited NTU Labs



A team from Supreme Sourcing, Faisalabad Visited NTU Labs and ORIC.



CEO, Sapphire finishing Mills visited NTU



MR. Rasheed Anwar, Technical Director from ARC, visited NTU LABs and ORIC.

# ORIC ACTIVITIES

## INDUSTRIAL VISITS



A foreigner Nesrin SERİN from Turkiye with industrial officials visited NTRC Labs for Certification



## INTERNATIONAL & NATIONAL MOU'S / COLLABORATIONS



MoUs Signing Ceremony Between National Textile University and Amir Kabir University of Technology, Iran on the side line of conference.

MoUs Signing Ceremony Between National Textile University and University of Minho ,Portugal at NTU.



MoUs Signing Ceremony Between National Textile University and Amir Kabir University of Technology, Iran on the side line of conference.

MoUs Signing Ceremony Between National Textile University and SDGs Academy (PVT) Ltd. Islamabad



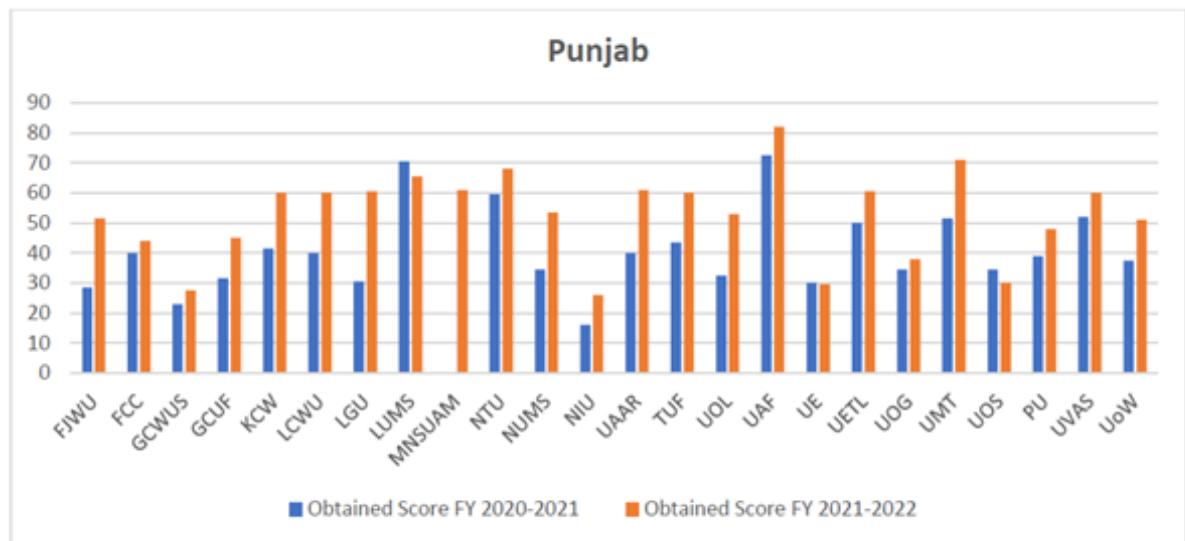
National Textile University 's School of Engineering and Technology signed an MOU with Govt. Institute of Textile Technology, Faisalabad to extend support in producing quality Engineering Technicians.

# HEC ORICS EVALUATION 2022

HEC published the ORIC Evaluation report for the year 2022. Overall ORIC NTU stood at 10th position amongst 73 Recognized ORICs, whereas it ranked as 5th out of 20 ORICs in X Category.

39	National Textile University, Faisalabad	Category	X
		Score Obtained	68
A.	Human Resource and Operations	10	100%
B.	Research Excellence	27.5	61%
C.	Innovation and Commercialization	18.5	62%
D.	Sustainability and Capacity Building	12	80%

No. of ORICs in Category	FY-2018-19	FY-2019-20	FY-2020-21	FY-2021-21
W	10	10	0	5
X	14	13	6	20
Y	31	29	27	32
Z	12	17	38	15



# RESEARCH PROJECTS APPROVED FOR FUNDING BY HEC

Details of Research Proposals approved for funding by HEC (NRPU & TTSF)

SN	NAME OF PI WITH DESIGNATION AND DEPARTMENT	TITLE OF RESEARCH PROPOSAL	TOTAL FUNDING APPROVED (RS.) MILLIONS	COLLABORATING PARTNER(S) DETAILS (IF ANY)
1	Shagufta Riaz, Assistant Professor, SET	Recycling of cellulosic waste to synthesize carbon / graphene quantum dots and their application to develop highly durable multifunctional cotton textiles	9.042	WWF Lahore, Pakistan, & Crescent Bahuman LIMITED
2	Dr. M. Ayyoob, Assistant Professor, Karachi Campus	Development of sustainable and recyclable bioplastics from the renewable resources for packaging applications (BioPak)	9.62	Sungkyunkwan University, South Korea. IJ Plastics Pakistan
3	Dr. Nadeem Nasir, Associate Professor, SOS	Development of Textile-Based Sensors for Smart Textile Applications	13.152	I. TEXTILES Pvt. Ltd. Karachi
4	Dr. Muhammad Irfan, Assistant Professor, SET	Ecofriendly and economical antimicrobial/antiviral functionalization of nonwovens for personal protective equipment and filtration media	10.368	Chawla Enterprises. Faisalabad. CHT Pakistan Private Limited Lahore
5	Dr. Syed Hassan Gilliani, Assistant Professor, FBS	Employment Injury Protection Scheme for Workers in the Textile Sector of Pakistan and Compliance of COVID-19 SOPs	10.24	Noor Fatima Fabrics Pvt Ltd. Faisalabad
6	Dr. Muhammad Kashif Bangash, Assistant Professor, SET	Indigenous Fabrication of Low-Cost Advance SiCf/SiC and Cf/SiC Ceramic Composites with Improved Properties for Automotive, Aerospace and Defense Applications	10.092	Heavy Industries Taxila (HIT). Taxila
7	Dr. Muhammad Hashim Assistant Professor, FBS	Improving Sustainability Performance of the Textile and Apparel Industries through Sustainable Manufacturing Practices and Circular Economy	3.744	MASOOD TEXTILE MILLS LIMITED (MTM), Faisalabad
8	Dr. Aqsa Imran Assistant Professor SET	Development of smart and functional sports bra	5.04	Interloop / Combined fabrics
9	Muhammad Anwaar Nazeer Assistant Professor SET	Textile materials-based active wound dressing	13.024	Cotton Craft Pvt. Ltd.

# NATIONAL RESEARCH PROJECT FROM OTHER GOVT. FUNDING AGENCIES

Details of Research project Approved for funding.

SN	NAME OF RESEARCH GRANT	NAME OF PI WITH DESIGNATION AND DEPARTMENT	TITLE OF RESEARCH PROPOSAL	TOTAL FUNDING PKR (MILLIONS)	COLLABORATING PARTNER(S) DETAILS (IF ANY)
1	NESCOM/(068/RAC-IX)	Dr. Yasir Nawab Associate Professor, SET	Evaluation of NCF Carbon Fibers: Fabric Formation through modern weaving machine and mechanical testing of composites with Epoxy Resin	0.40	NESCOM
2	NESCOM/Proj/RAC/NTU(68)	Dr. Habib Awais Assistant Professor	Fabrication of wet spinning line and development of PAN Precursor Fiber	5.20	NESCOM

# COMPLETED PROJECTS FUNDED BY HEC

Details of Research projects completed within stipulated time (NRPU & TDF)

SN	NAME OF PI WITH DESIGNATION AND DEPARTMENT	PROJECT NO.	TITLE OF RESEARCH PROPOSAL	COLLABORATING PARTNER(S) DETAILS (IF ANY)
1	Dr. Abher Rasheed Assistant Professor	TDF03-045	Development of a Textile-Based Vest For Vital Signs Monitoring	Mr. Aziz Ahmad Haizum Hitech Textiles, Lahore
2	Dr. Zulifqar Ahmad Rehan Assistant Professor	TDF03-103	Development Of Textile Based Smart Sensor For Human Health Monitoring	Mr. Hasham Khan Hansa Leater Garments
3	Dr. Ahsan Nazir Assistant Professor	TDF03-111	Development Of Low Cost And Sustainable Nonwoven Fabric Filters To Improve The Quality Of Intake Air By Humans And Machines	Mr. Abid Omar Syntech Fibers (pvt) Ltd
4	Dr. Abdul Jabbar Assistant Professor	8684//Punjab/NRPU/R&D/ HEC/2017	Novel Textile Reinforced Composites with improved mechanical properties for sports and automotive applications.	-

# INDUSTRIAL CONSULTANCY AGREEMENTS

SN	DATED	NAME AND ADDRESS OF THE FIRM	TITLE OF PROJECT	PI OF PROJECT	COST OF RS.
1	24-08-22	Interloop Limited Faisalabad	Consultancy for the Development of non-Executive Staff of Interloop	Dr. Sajjad Ahmad Baig	750,000
2	2-11-22	Ayesha Spinning Mills Ltd Lahore	Development of staff Training on Designing, Application of compression stockings	Dr. Hafsa Jamshid	125,000
3	16-12-22	Sapphire Finishing Mills Ltd Lahore	Development of four IFR yarns using different blends of manmade fibers	Dr. Zulfiqar Ali	275,000
4	08-12-22	Power chemical Industries, Faisalabad	Optimization of cost and process of existing setup and research and development for new products	Dr. Zulfiqar Ali Rehan	120,000
5	01-11-22	Beacon Impex PVT Ltd Faisalabad	Process optimization of CPBD and continuous bleaching	Dr Amjad Javed Usman Zubair	175,000

# INDUSTRIAL FUNDED SHORT PROJECTS

Details of Joint Research projects approved for funding to Industrial Funding Agencies.

SN	NAME OF PI	TITLE OF RESEARCH PROPOSAL	TOTAL FUNDING (RS.)	COLLABORATING PARTNER
1	Mr. Irfan Shafiq Dr. Ahsan Nazir	Assessment of Formaldehyde, Azo, pH, LED	745,500	COSY International (PVT) Limited, Faisalabad
2	Dr. Sharjeel Abid	Bio Scouring and Enzymatic Desizing enzyme BBT RF838-A-11 for the Woven Fabric Dyeing Pre-Treatment	300,000	Baico Biotech Zhuhai Co Ltd. China
3	Dr. Faheem Ahmad	Development of Non-Woven Fabric 130 GSM, 140 GSM	60,000	Escorts Advanced Textiles Private Limited
4	Dr. Anwaar Nazir	Assessment of Antimicrobial (Qualitative & Quantitative)	370,055	BEACON IMPEX (PVT) Limited, Faisalabad
5	Dr. Anwaar Nazir	Tent Fabric Development	374,100	H. Nizam Din & Sons (Private) Limited, Karachi
6	Dr. Ahsan Nazir	Development of Fleece Fabrics and Physical and chemical Testing	342,760	Lahore Fashions (PVT) Limited, Faisalabad
7	Dr. Ahsan Nazir	Development of Garment Distortion	28,500	Monark Clothing, Lahore
8	Dr. Ahsan Nazir	Development of Non-Woven Fabric	30,000	Interloop Limited, Faisalabad
9	Dr. Ahsan Nazir	Collaboration with PSQCA regarding quality enhancement	20,000	Pakistan Standards & Quality Control Authority

# NATIONAL PATENTS FILLED AT IPO PAKISTAN

Details of Research project Approved for funding.

SN	PATENT APPLICATION NO.	TITLE OF INVENTION	NAME OF INVENTOR	SCHOOL
1	902/2022	Highly efficient, antimicrobial and textile-based electrode for human physiological monitoring	Dr. Nadeem Nasir Dr. Abher Rashid	SoS
2	168/2023	Simultaneous dyeing and eco-friendly fixation of turquoise blue on cotton: A sustainable approach	Dr. Kashif Iqbal Mudaser Ali	SET

# LIST OF INTERNATIONAL MOU'S/COLLABORATIONS

SN	DATE	ORGANIZATION NAME	FOCAL DEPARTMENT/SCHOOL
1	01-07-2022	Donghua University, Changning, China	SET-ORIC
2	22-07-2022	The University of Leeds, Leeds, UK	SET-ORIC
3	15-08-2022	Shandong Foreign Trade Vocational College, China	SET-ORIC
4	25-08-2022	UIN Maulana Malik Ibrahim Malang, Indonesia	SOAD-ORIC
5	31-12-2022	Alliance of International Textile Science & Technology, CTES	SET-ORIC
6	15-02-2023	Fibrenamics- Institute of Innovation in Fiber-based Materials and Composites, Portugal	SET-ORIC
7	15-02-2023	Yazd University, Yazd, Iran	SET-ORIC

# LIST OF NATIONAL MOU'S/COLLABORATIONS

SN	DATE	ORGANIZATION NAME	FOCAL DEPARTMENT/SCHOOL
1	24-10-2022	Certico International (PVT) Ltd. Islamabad	SET / TE
2	07-11-2022	Hadi Textiles, Faisalabad	SOS / CS
3	10-12-2022	Netixsol Blockchain Development company, Faisalabad	SET / TE
4	12-12-2022	Softwood Textiles, Lahore	SOS / CS
5	19-12-2022	Kamal Mills (PVT) Limited Faisalabad	SOS / CS
6	19-12-2022	Brickclay, Faisalabad	NTU-ORIC
7	13-01-2023	Pakistan Textile Testing Foundation, Faisalabad	SET/ NCCM
08	18-01-2023	SDGs Academy (PVT) Ltd. Islamabad	NTU-ORIC
9	24-01-2023	Kalam4Solutions (PVT) Ltd. Rawalpindi	SOS / CS
10	08-02-2023	Ascend BPO Services, Lahore	SET/TE
11	22-02-2023	Naveena Denim, Lahore	SET / TE

# UPCOMING INITIATIVES

- 1** Workshop on Writing Winning Proposals
- 2** Fresh Faculty Mentoring Program
- 3** Staff Training for Managing Research documents
- 4** ORIC Steering Committee Meeting
- 5** Effective Technology Transfer: Licensing and Partnering Strategies



*Credits: Innovation Institute (University of Pittsburgh)*

# PARTING WORDS ...

Thank you for going through the newsletter, parting off with some inspiration from the Great Allama Muhammad Iqbal.

کی محمد ﷺ سے وفات م نے تو ہم تیرے ہیں  
یہ جہاں چیز ہے کیا لوح و قلم تیرے ہیں



ستاروں سے آگے جہاں اور بھی ہیں  
ا بھی عشق کے امتحان اور بھی ہیں  
اسی روز و شب میں الجھ کرنہ رہ جا  
کہ تیرے زمان و مکان اور بھی ہیں

اقبال

**YOUR DESIRE TO CHANGE  
MUST BE GREATER THAN  
YOUR DESIRE TO STAY  
THE SAME.**

# ACKNOWLEDGMENTS

The ORICs of other Universities generally and the following specifically have been an inspiration for us.



**ORIC NUST**



**ORIC UMT**



**ORIC UAF**



**SUPERIOR  
UNIVERSITY**

**ORIC Superior University**



**ORIC Forman Christian College**

# EDITORIAL TEAM



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Assistant Editor Industrial News



**WASI UR REHMAN QAMAR**

Designer ORIC Newsletter

# OFFICE OF RESEARCH, INNOVATION AND COMMERCIALIZATION



**NATIONAL TEXTILE UNIVERSITY,  
FAISALABAD**

*ALLAH HAFIZ*