Zeeshan Haider

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D.O.B: November 4th-1990, Nationality: Pakistan, Gender: Male
Phone: (+923186735628)

Research Interests

Piezoelectric polymers, Ferroelectric materials, Charged Surfaces, Biomedical sensors, Triboelectric nanogenerator, Wearable sensors, Surface acoustic waves application in biomedical applications (SAW BASED), Cryobiology, Image Processing, Control systems, Artificial Intelligence.

Experience (Years)

Assistant Professor (Riphah International University) [Biomedical Engineering] **(May 2025 to Uptill now)**

Postdoctrol Fellow (Shenzhen Institute of Advanced Technology Chinese Academy of Sciences) (Jan 2024 to March 2025)

Assistant Professor (NFC-IET Multan Pakistan) **(Feb 2023 to Dec 2023)**

Head of Department (HOD)[Biomedical Engineering] **(Jan 2022 to Jan 2023)**

University of Lahore

Head of Department (HOD) [Biomedical Engineering]

Quaid-e-Azam College of Engineering and Technology Sahiwal , Pakistan. **(July 2-2021 to Dec 2021)**

Visiting Assistant Professor (Air University) Pakistan **Jan 2021 to June 2021**

Visiting Assistant Professor (NFC University Multan) Pakistan **Sept 2020 to Jan 2020**

Qualifications

PHD [Biomedical Engineering] **September-2016 to July-2020**

Under Supervising, Professor Gang Zhao (G. Zhao), Ph.D. CryoBME & Medical Microsystem Laboratory, **University of Science and Technology (Ranked 130 in world)**, Hefei, Anhui, China.

Research Assistant **February 2016 to Sept 2016**
(CISTER Porto Portugal)

Research Assistant **September-2015 to January 2016**

Shanghai Jiaotong University (Ranked 60 in world)

M.S. [Control and automation systems] (CGPA: 3.89/4.00) **September-2013 to July-2015**

Xian Jiaotong University (Ranked 307 in world)

B.E. [Electronics Engineering] **2008 to 2012**

National University of Science and Technology. (**Ranked No.1 in Pakistan**)

HSC-II [Pre-Engineering] **Dec' 2008**

SSC-II [Science] **Dec'2006**

Publications

1) Qadir, A., **Haider, Z**., Farooq, U., Shafique, S., Xu, H., & Ahmed, S. (2025). Advancements in acidic OER and HER electrocatalysts: Iridium, MOF-based, and ruthenium systems for sustainable hydrogen production. *International Journal of Hydrogen Energy*, *152*, 150188.
2) **Zeeshan Haider,** S.M Chapal Hossain, Umar Farooq, Gang Zhao **"**On-chip microfluidic tensiometer device based on droplet deformation driven by surface acoustic waves**" (In Colloidal and Interfacial Science (Under Review) IF (9.9))**
3) Khan, I., Ahmed, S., **Haider, Z**., Memon, K., & Fareed, A. (2025). Enhancing triboelectric nanogenerator performance using chitosan-modified multiwalled carbon nanotubes. *Journal of Materials Chemistry C*, *13*(14), 7245-7256.
4) **Haider Zeeshan**, Abdul Haleem, Umar Farooq, Lin Shi, Uzabakiriho Pierre Claver, Kashan Memon, Azam Fareed et al. "Highly porous polymer cryogel based tribopositive material for high performance triboelectric nanogenerators." *Nano Energy* (2019): 104294. **(IF 15.56)**
5) Farooq, Umar, **Zeeshan Haider**, Xin M. Liang, Kashan Memon, SM Chapal Hossain, Yuan Zheng, Hongsheng Xu et al. "Surface-Acoustic-Wave-Based Lab-on-Chip for Rapid Transport of Cryoprotectants across Cell Membrane for Cryopreservation with Significantly Improved Cell Viability." *Small* 15, no. 14 (2019): 1805361.**(IF 10.56)**
6) Rashid Syed Aftab[*], **Zeeshan Haider***, SM Chapal Hossain, Kashan Memon, Fazil Panhwar, Momoh Karmah Mbogba, Peng Hu, and Gang Zhao. "Retrofitting low-cost heating ventilation and air-conditioning systems for energy management in buildings." *Applied energy* 236 (2019): 648-661.**([*]Equal Contribution IF=8.426)**
7) Mbogba Momoh Karmah, **Zeeshan Haider**, SM Chapal Hossain, Daobin Huang, Kashan Memon, Fazil Panhwar, Zeling Lei, and Gang Zhao. "The application of convolution neural network based cell segmentation during cryopreservation." *Cryobiology* 85 (2018): 95-104**.(IF 2.141)**
8) Mehmood, Faisal, **Zeeshan Haider**, Umar Farooq, and Yin Baoqun. "Droplet movement control using fuzzy logic controller and image processing along with pin valves inside microfluidic device." *Measurement and Control* 52, no. 9-10 (2019): 1517-1531. (**IF=1.229**)
9) Panhwar, Fazil, Zhongrong Chen, SM Chapal Hossain, Meng Wang, **Zeeshan Haider**, Kashan Memon, Pengpeng Chen, and Gang Zhao. "Near-infrared laser mediated modulation of ice crystallization by two-dimensional nanosheets enables high-survival recovery of biological cells from cryogenic temperatures." *Nanoscale* 10, no. 25 (2018): 11760-11774. **(IF=6.970)**
10) Cao, Yuan, Muhammad Hassan, Yue Cheng, Zhongrong Chen, Meng Wang, Xiaozhang Zhang, **Zeeshan Haider**, and Gang Zhao. "Multifunctional Photo-and Magnetoresponsive Graphene Oxide–Fe3O4 Nanocomposite–Alginate Hydrogel Platform for Ice Recrystallization Inhibition." *ACS applied materials & interfaces* 11, no. 13 (2019): 12379-12388.**(IF=8.456)**
11) Zhang, Xiaozhang, Gang Zhao, Yuan Cao, **Zeeshan Haider**, Meng Wang, and Jianping Fu. "Magnetothermal heating facilitates the cryogenic recovery of stem cell–laden alginate–Fe 3 O 4 nanocomposite hydrogels." *Biomaterials science* 6, no. 12 (2018): 3139-3151.(**IF= 5.21)**
12) Hossain, SM Chapal, Xin Zhang, Zhifeng Liu, **Zeeshan Haider**, Kashan Memon, Fazil Panhwar, Momoh karmah Mbogba, Peng Hu, and Gang Zhao. "Evaluation effect of magnetic field on nanofluid flow through a deformable bifurcated arterial network." *International Communications in Heat and Mass Transfer* 98 (2018): 239-247.(**IF=4.127)**
13) Hossain, SM Chapal, Xin Zhang, **Zeeshan Haider**, Peng Hu, and Gang Zhao. "Optimization of prostatic cryosurgery with multi-cryoprobe based on refrigerant flow." *Journal of thermal biology* 76 (2018): 58-67. (**IF=1.902**)
14) Memon, Kashan, Yue Cheng, Fazil Panhwar, Zhongrong Chen, **Zeeshan Haider**, Salman Afridi, Peng Hu, and Gang Zhao. "A Low-Cost Easy-to-Fabricate Sandwich-Structured Microdevice for Controllable Removal of Extracellular Cryoprotective Agents with High Efficiency." *CryoLetters* 39, no. 1 (2018): 7-13.(**IF=0.694)**

15) Zhu, Kaixuan, S. M. Hossain, Fazil Panhwar, **Zeeshan Haider**, Peng Hu, and Gang Zhao. "Water-Transport and Intracellular Ice Formation Of Porcine Adipose-Derived Stem Cells During Freezing." *Cryoletters* 39, no. 4 (2018): 263-268. (**IF=0.694)**

16) **Haider Zeeshan**, Faisal Mehmood, Xiaohong Guan, Jiang Wu, Yang Liu, and Pervez Bhan. "Scheduling of air conditioner based on real time price and real-time temperature." In *The 27th Chinese Control and Decision Conference (2015 CCDC)*, pp. 5134-5138. IEEE, 2015.

17) **Haider Zeeshan**, Cheng Yin, Weidong Zhang, Lizong Zhang, Mohammad Yousaf, and Nasir Ali. "Enhanced feature selection method based on ANN and GA for coal boiler plants using real time Plant data." In *2016 35th Chinese Control Conference (CCC)*, pp. 7115-7119. IEEE, 2016.

18) Mehmood, Faisal, **Zeeshan Haider**, and Baoqun Yin. "A Pump Based Microfluidic Image Processing System for Droplet Detection and Counting." In *IOP Conference Series: Materials Science and Engineering*, vol. 381, no. 1, p. 012191. IOP Publishing, 2018

19) Uzabakiriho Pierre Claver, **Zeeshan Haider**, Umar Farooq, Gang Zhao "High-performance, mechanically and thermally compliant silica-based solid polymer electrolyte for triboelectric nanogenerators Application" (**Advanced Materials Technologies IF (5.39)**)

20) Rafi u Shan*, **Zeeshan Haider*,** Kashan Memon, Gang Zhao "Realizing the Capability of Negatively Charged Graphene Oxide in the Presence of Conducting Polyaniline for Performance Enhancement of Tribopositive Material of Triboelectric Nanogenerator" (*** Equal Contribution In Advanced Electronics Materials IF (6.3)**)

21) Abdul Haleem*, **Zeeshan Haider***, Rafi us shan "Highly Porous and thermally stable tribopositive hybrid bimetallic Cryogel to boost up the performance of triboelectric nanogenerators" **(Equal Contribution in Inernational Journal of energy research (IF=3.39)**

Allocated Responsibilities

As Head of Biomedical Engineering Department

1) Led the academic and administrative operations of the Biomedical Engineering Department.
2) Prepared and managed semester-wise teaching plans, course allocations, timetables, and faculty workload distribution.
3) Supervised faculty members in teaching, assessment, laboratory work, student mentoring, and departmental activities.
4) Coordinated curriculum implementation in accordance with university policies, PEC/HEC guidelines, and program learning outcomes.
5) Monitored the quality of teaching, examinations, result preparation, and academic record management.
6) Managed departmental laboratories, equipment usage, lab manuals, practical sessions, and safety practices.
7) Organized departmental meetings, maintained documentation, and ensured timely submission of reports to the university administration.
8) Guided students regarding academic progress, semester registration, projects, internships, and career development.
9) Supervised final-year projects and encouraged research, innovation, and industry-relevant problem solving.
10) Coordinated with internal and external stakeholders for academic audits, accreditation-related documentation, and quality assurance activities.
11) Supported faculty development, research activities, workshops, seminars, and departmental events.
12) Assisted in admissions, student counseling, program promotion, and departmental planning.
13) Ensured discipline, smooth communication, and effective coordination among faculty, students, administration, and examination departments.

Research effort and Lab Assistants. **Sept'2016- June2020**

Department of Biomedical Engineering,
CryoBME & Medical Microsystem Laboratory of Electronics,
University of Science and Technology, Hefei, Anhui, China.

Responsibilities

- Act as the Team Leader and Lab Manager Responsible for directions and helping colleagues for their research topics, their results and publishing papers.
- Review the interconnected research works of other researchers for publication in various journals.
- Attendant new and visiting researchers of the lab, and inform them about our ongoing research directions: and assist them concerning experimental and simulation difficulties.

Achievements

1. Won the ORIC grant of Riphah International University and also NSFC award for Postdoctrol funding.
2. Got fully funded CAS-TWAS fellowship for the PHD studies in University of Science and Technology.
3. Got Research Assistantship fully Paid in University of Porto and participated in various European Projects like SafeCop ,EMC2 ,Arrow Head, Enable S3 and is responsible for doing research and implementation.
4. Got Research Assistantship fully paid in Shanghai Jiaotong University one of the prestigious University in China.
5. Got hundred percent Scholarship For Maters in Xian Jiaotong University.
6. Got hundred percent Scholarship For undergraduate degree in National university of science and technology
7. Achieved outstanding student award in the Matriculation in school
8. Achieved the best student award during college.
9. Won the travel grant for Cryo-conference in Spain Madrid.
10. Teaching Assistant For Digital Logic Design and Embedded Systems

Professional Membership

1) Pakistan Engineering Council Islamabad
2) Society of Cryobiology, University of Bedfordshire, United Kingdom
3) IEEE, Institute of Electrical & Electronics Engineers, Pakistan.
4) IAENG, International Association of Engineers

Language Skills

1. English: IELTS (7.0/9.0)
★★★★★ Reading
★★★★★ Writing
★★★★★ listening

Courses Taught

- Biomedical Instrumentation 1 and 2
- Microcontrollers
- Electrical Engineering
- Circuit Analysis
- Biomedical Imaging Technology
- Control Theory
- Digital System Design
- Digital Logic Design
- Embedded System

- Biomedical Signal Processing
- Biomedical Sensors
- Machine Learning
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Projects Supervised

- Portable Dialysis Machine
- Portable ECG Monitoring System
- Infrared Thermometer for Non-Contact Temperature Measurement
- Wearable Blood Pressure Monitoring System
- Non-Invasive Glucose Monitoring System