

MUKESH KUMAR

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Hyderabad, Sindh Pakistan.

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Education

M.Phil., Metallurgy and Materials Engineering (CGPA = 3.88/4.00)

Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan

Project: "Synthesis and Electrochemical study ceria based nanocomposite materials for low temperature solid oxide fuel cell"

B.E., Metallurgy and Materials Engineering (CGPA = 3.86/4.00, **Second Position**)

Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan

Project: "Effect of heat treatment cycles on mechanical properties of 6061 aluminum alloy"

Professional Experience

Lecturer

(December, 2016 – till date)

Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan

Teaching various undergraduate and postgraduate courses:

- Corrosion and Protection
- Computer Applications in Materials Engineering
- Iron and Steel Making
- Engineering Drawing and Graphics

Member of departmental course designing committee

Member of departmental Outcome Based Education implementing committee

Supervising undergraduate and master students (research projects)

Class coordinator of 1st year undergraduate students

Visiting Teacher

(January 2016 - December, 2016)

Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan

Teaching various undergraduate courses.

NDT Technician

(April, 2015 – August, 2015)

Applied Engineering, Pakistan

Worked at KPD-TAY Project of OGDCL

- Coordination with Chinese contractor
- Inspection of welded joints and Interpretation of results

Internee

(July, 2014 – July, 2014)

Hi-Tech Pipes and Engineering, Kotri Pakistan

Visited and experienced different departments

- Spiral Pipe Manufacturing
- PE pipe Manufacturing
- Hydraulic Testing Section
- X-rays testing department

Internee

(June, 2013 – July, 2013)

Pakistan Steel Mills, Karachi Pakistan

Visited and experienced different departments

- Iron Making Department
- Steel Making Department
- Advance Research Lab
- Foundry Section

- Cold and Hot rolling

Teacher

(August, 2013 – January, 2015)

The Scientist Academy, Tando Jam Pakistan

Taught Science subjects

- Physics
- Chemistry

Publications

Journal Papers

- J1. Umair Aftab, Aneela Tahira, Abdul Hanan Samo, Muhammad Ishaq Abro, Muhammad Moazam Baloch, **Mukesh Kumar**, Sirajuddin, Zafar Hussain Ibupoto, (2020) “Mixed $\text{Co}_2\text{O}_3/\text{Co}_3\text{O}_4$ composite material: an efficient nonprecious electrocatalyst for hydrogen evolution reaction, *International Journal of Hydrogen Energy*. (IF=4.084) <https://doi.org/10.1016/j.ijhydene.2020.03.131>
- J2. Vinod Kumar , Muhammad Ishaque Abro , Muhammad Aqeel Bhutto, Umair Aftab, **Mukesh Kumar** and Muzafar Ahmed, (2019) “Fabrication and characterization of graphene oxide nanoparticles incorporated in poly (vinyl alcohol) electro-spun nanofibers and its vaporphase crosslinking”, *Pakistan Journal of Pharmaceutical Science*. (IF= 0.596) [Accepted] <https://www.pjps.pk/future-issue/>
- J3. Abro M. I., Lagari A. J, Aftab U., Channa S. A., and **Mukesh Kumar**, (2019) “Selective flocculation study of hematite in hematite-quartz-kaolinite system in presence of Ca^{2+} , Mg^{2+} and Fe^{3+} ions: Part 1. Optimization of ligand”, *Mehran University Research Journal of Engineering and Technology*. [Accepted]
- J4. **Mukesh Kumar**, Muhammad Moazam Baloch, Muhammad Ishaque Abro, Sikandar Ali Memon and Ali Dad Chandio, (2019) “Effect of artificial aging temperature on mechanical properties of 6061 aluminum alloy”, *Mehran University Research Journal of Engineering and Technology*, v. 38, n. 1, p. 31-36. <http://dx.doi.org/10.22581/muet1982.1901.03>.

Conference Papers

- C1. **Mukesh Kumar**, Rehan Laghari, M. M Baloch, M. I Abro, Ghazanfar Abbas, “Synthesis and characterization of barium doped ceria (BDC) nano composite materials”, *1st International Conference on Advanced Materials and Processing-2017, Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan. (Feb 28-March 2, 2017)*.
- C2. Vinod Kumar, **Mukesh Kumar**, Umair Aftab, Muzafar Ahmed, Abdul Hanan, “Synthesis and characterization of graphene nano-sheets”, *1st International Conference on Advanced Materials and Processing-2017, Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan (Feb 28-March 2, 2017)*.
- C3. I. A Soomro, M. I. Abro, M. M Baloch, A. R Jamali, **Mukesh Kumar**, “Effect of organic solvent on physico-chemical properties of silica aerogel synthesized via ambient pressure drying process”, *1st International Conference on Advanced Materials and Processing-2017, Mehran University of Engineering and Technology Jamshoro, Sindh Pakistan*.
- C4. Rohit Sharma, Muhammad Ishaque Abro, Peerji Rajput, **Mukesh Kumar** and Umair Aftab, “EEE-waste recycling management: A review”, *1st International Conference on Advanced Materials and Processing (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan. (Feb 28-March 2, 2017)*
- C5. Santosh Kumar, **Mukesh Kumar**, Umair Aftab, Imtiaz Soomro and Rehan Laghari “Environment Friendly Inhibitor for Corrosion Protection of Metals and Alloys: An

Overview”, *1st International Conference on Advanced Materials and Processing (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan. (Feb 28-March 2, 2017)*

- C6. Shafique Ahmed Lashari and **Mukesh Kumar**, “Optimization of Thermo-Mechanical Properties of High Alumina and Low Alumina Monolithic Refractory Castables for Industrial Application”, *1st International Conference on Advanced Materials and Processing (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan. (Feb 28-March 2, 2017)*
- C7. Sarfaraz Ali Shah, **Mukesh Kumar**, Raja Shahbaz, “Evaluation of neem leaves extract as a corrosion inhibitor for mild steel”, *2nd National Conference on Metallurgy and Materials-2016, Mehran University of Engineering and Technology Jamshoro.*

Project under Supervision and Co-supervision

- Preparation of zinc based nanocomposite coating on mild steel for corrosion protection in marine environments **(Cont.)**
- Development of electrocatalysts for water splitting application. **(cont.)**
- Synthesis of $Zn_5(CO_3)_2(OH)_6$ anodic materials for Lithium Ion Batteries **(Cont.)**
- Utilization of Onion extract as corrosion inhibitor for MS in different environment **(Cont.)**
- Synthesis of graphene and graphene loaded nano-fibers.
- Selective flocculation of hematite in the presence of various cations.
- Synthesis And Characterization of Graphene, CaBDC, Ni/Graphene & Ni/Graphene/CaBDC Nano-Composites For Fuel Cell Applications **(2017)**
- Designing and fabrication of grinding mill and sieve shaker on laboratory scale **(2016)**

Research Interest

My academic and research interests are aligned with the field of materials science and engineering and, highly motivated to conduct world class research in novel materials development for different applications.

Society’s Membership

- Registered Engineer - Pakistan Engineering Council (PEC)
- Faculty Mentor - Mehranian Materials Advantage Chapter (MMAC)
- General Secretary - Peace United Boxing Club (PUBC)
- Social Secretary - Mehran University Teachers’ Association (MUTA).
- Founder - Let’s Walk for Change
- Coordinator – Mehran University Debating and Dramatic Society (MUDDS)
- Teacher Coordinator - The Big Event
- Teacher Coordinator - MUET Model United Nations
- Former General Secretary of Mehranian Materials Advantage Chapter (MMAC)- 2014

Awards

Financial Awards

- Prime Minister Fee Reimbursement of Master of Philosophy **(2015-2017)**
- Merit Scholarship throughout four year of Bachelors of Engineering **(2011-2014)**
- USAID Merit Scholarship **(2007)**

Professional Certifications**ASNT-NDT/Level II certified by Appus Velosi and Integrity [Not renewed]**

- NDT inspector (level-II) of Magnetic Particle Inspection
- NDT inspector (level-II) of Dye Penetration Testing

Activities (Co-curricular/ extracurricular)

- Attended Online webinar on “Waste Water Treatment” (0.5 CPD credit Points).
- Delivered Online Technical Presentation on “Smart Corrosion Coatings” organized by NACE Islamabad Pakistan Section.
- Attended Seminar on “Revival of Pakistan Steel Mills, Technical Due Diligence” at DUET, Karachi Pakistan.
- Conducted one day training on Fundamentals of Cathodic Protection in marine environment at Fauji Oil Terminal and Distribution Company, Port Qasim Karachi.
- Participated in three days’ workshop on “Advanced Characterization Techniques for Professionals (GC-MS, HPLC, FTIR, TGA/DTA, Elemental Analyzer, UV-VIS, VOD, XRD, SEM, AFM) at SCME, NUST Islamabad.
- Attended two week training program on “Curriculum & Academic Design” by Higher Education Commission in collaboration with RELO-US Embassy, Islamabad, Pakistan.
- Organized “All Sindh Plantation Drive”.
- Conducted one day short course on “Corrosion and Protection Techniques” at ORIC, MUET, Jamshoro.
- Conducted one day awareness seminar on “Outcome Based Education” for undergraduate students at USPCAS-W auditorium, MUET, Jamshoro.
- Attended workshop on “Hands on Training on Scanning Electron Microscope” at Institute of Space Technology, Islamabad Pakistan.
- Attended “Capacity Building Workshop on Developing SAR as per PEC Accreditation Manual 2014 for OBE&A Implementation” at MUET, Jamshoro.
- Attended one day short course on “Framework for Damage Mechanics-Based Simulation of Material Failure Processes” at MUET, Jamshoro.
- Teacher coordinator in social event “The Big Event Pakistan” at MUET, Jamshoro.
- Attended International workshop on “Rational Design of Materials for Energy Needs: Computation and Experimentation organized by COMSTECH at Islamabad Pakistan.
- Attended short course on Principles of Corrosion Control and Cathodic Protection Technology at University of Punjab, Lahore Pakistan.
- Attended “Four Days Indigenous Faculty Development Training” at MUET, Jamshoro
- Organized “1st International Conference on Advanced Materials and Processing (ICAMP’17), MUET Jamshoro.
- Attended workshop on “Sheltered Instruction Observation Protocol (SIOP)” organized by IREX and Department of State, USA.
- Participated in International Paint and Coating Expo’16 at Karachi.
- Participated in 2nd National Conference on Metallurgy and Materials Engineering at MUET, Jamshoro.
- Participated as a teacher coordinator in “Thermocon’16” at GIKI, Topi, Pakistan.
- Participated as a departmental coordinator in “Sports Week’16” at MUET, Jamshoro.
- Participated in 1st National Conference on Metallurgy and Materials Engineering at MUET,

Jamshoro.

- Participated in One-Day Seminar on Scope of Metallurgy & Materials Engineering in Various Industries at MUET, Jamshoro.
- Participated in Mega National Youth Conference at Hyderabad.
- Attended seminar on Explore Yourself at MUET, Jamshoro.
- Attended Youth Symposium organized by Sindh Youth Network at Hyderabad.
- Attended one day Seminar regarding Modern Era of Metallurgical Industries at MUET, Jamshoro.
- Attended one day workshop on “How to become a peace leader?” at Hyderabad.
- Participated in Mehran Techno-Wizard Convention 2013 “MTC’13” at MUET, Jamshoro
- Participated in DICE in Collaboration with CONNECT & PCST at University of Gujrat.
- Participated in Inter Collegiate Debate Competition at Govt. Degree College Kali Mori.
- Metallurgist in Foundries & understanding KAIZEN & 5S at MUET, Jamshoro
- Participated in “All Sindh Mehran Dosti Cup Boxing Tournament at Peoples Sports Complex Karachi Pakistan.

Software Skills

MATLAB, Origin 8, Crystal Maker, C++ and Microsoft office, Z-View, High Score, Autocad

Technical Skills

Hands on practice on following equipment

- SEM/EDS
- XRD
- Potentiostat
- Zeta Sizer
- FTIR
- TGA

Strengths

- Leadership skills
- Research oriented
- Strong Analytical Abilities
- Event Management
- Motivational Training skills

Personal Information

Nationality : Pakistani
Date of Birth : 18-12-1992
CNIC : 41303-0287985-9
Passport Number : DF4229851