

Dr. Ing. Abdul Rauf Jamali

Assistant Professor (HEC Approved Supervisor),
Materials Engineering, NED University Karachi
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Academic Qualifications

2022-2024: Ph.D. in Materials Science (Research), TUM (top 28th QS ranking), Munich, Germany
2019-2022: Ph.D. in Materials Engineering (Course) from NED University Karachi
2012-2015: MS in Materials Science & Engineering, TF, University of Kiel Germany
2007-2010: B.E. in Metallurgy and Materials Engineering from Mehran University Jamshoro

Academic Experience

03.2018-Present: Assistant Professor/ Lab Incharge, (Materials Engineering), NED University Karachi
12.2022-01.2024: Visiting Scientific Researcher at Fraunhofer EMFT Munich Germany
02.2016-03.2018: Lecturer/Lab Incharge, (Materials Engineering), NED University Karachi
08.2013-09.2015: Research Assistant, (Nanochemistry & Nanoengineering), Germany
10.2011-02.2016: Lecturer/Lab Incharge, (Metallurgy & Materials), Dawood University Karachi
06.2010-10.2011: Production Engineer (Steel Melt Shop). Amreli Steels Karachi

Major Grants

- 2.7 Million from MoST funding, NEDUET Karachi (completed)
- 1 Million from AS&RB funding, NEDUET, Karachi (completed)
- 4 Million from IRSIP-HEC funding, Islamabad (completed)
- 5 Million from SDGF Grant USA (completed)
- 5 Million from Sindh Research Support Programme (Applied)

Scholarships/Honors

- Best Researcher Award 2023 from NED University Karachi
- HEC-Pakistan Best Young Researcher Award 2024 (Applied)
- PhD research funds from ASRB NED University Karachi
- Prize award from HEC for PhD international exchange program
- Prize award for Best Master Thesis from International Center University of Kiel, Germany
- Prize award for top student in 2nd and 3rd year, metallurgy and materials engineering MUET

Academic Responsibilities

- Lectures to Undergraduate and Master student
- Student class advisor and counselor
- Undergraduate/ Master thesis projects supervisor
- Laboratory demonstrations to Undergraduate and Master student
- Member of the departmental asset management committee
- Member of self-assessment team
- Workshops organizer/conductor for laboratories
- Actively involved in industry-academia linkage

Research Publications

As a first author:

1. **AR Jamali**, AA Shaikh, AD Chandio, "Influence of Ultrasonication Treatment on Mechanical, Optical, and Physicochemical Properties of Polyvinyl-alcohol/cornstarch Biocomposite Thin Films" *ECS Journal of Solid State Science and Technology*, **2024**. <https://doi.org/10.1149/2162-8777/ad458e>.

2. **AR Jamali**, AA Shaikh, AD Chandio, "Preparation and characterization of polyvinyl alcohol/glycerol blend thin films for sustainable flexibility" *Materials Research Express*, **2024**. <https://doi.org/10.1088/2053-1591/ad4100>.
3. **AR Jamali**, AA Shaikh, AD Chandio, "Nano-based biodegradable food packaging of Vitis-vinifera synthesized by PVA/ZnO nanocomposites" *Physical Chemistry Research*, **2023**. <https://doi.org/10.22036/PCR.2022.341930.2104>.
4. **AR Jamali**, W Khan, S Khan, A Ibrahim, K Alam, "Ecofriendly Synthesis of Silver Nanoparticles Using Metallic Solution-Based Extract for their Antibacterial Properties" *AIP Advances*, **2025**. <https://doi.org/10.1063/5.0237276>.
5. **AR Jamali**, AD Chandio, W Khan, Z Anwer, IA Soomro, "Plasmonic Effect of Gold Nanoparticles Surrounded by Multidielectric Matrices" *Mehran University Research Journal of Engineering and Technology*, **2017**. <https://doi.org/10.22581/muet1982.1703.28>.
6. **AR Jamali**, AA Jamali, K Kanwar, M Hussain, B Das, "Manipulation of Surface Plasmon Resonances for Novel Nanocomposites Matrices" *Technical Journal UET Taxila*, **2020**. <https://tj.uettaxila.edu.pk/index.php/technicaljournal/article/view/907>.
7. **AR Jamali**, AD Chandio, W Khan, Z Anwer, MH Jokhio Soomro, "Effect of Cryogenic Treatment on Mechanical Properties of AISI 4340 and AISI 4140 Steel" *Mehran University Research Journal of Engineering and Technology*, **2019**. <https://doi.org/10.22581/muet1982.1903.18>.
8. **AR Jamali**, J Bhatti, W Khan, F Akther, M Batool, R Batool, WM Daoush, "Synthesis and Characterization of Silver Nanoparticle-Polydimethylsiloxane (Ag-NP-PDMS) Stretchable Conductive Nanocomposites" *Crystals*, **2022**. <https://doi.org/10.3390/cryst12081098>.
9. **AR Jamali**, M Batool, SA Asghar, F Akther, "Synthesis of Green Metaloxide Nanoparticles using Aloe-Barbadensis Leaf Extract (Acid Red 28) for Dye Removal Applications" *Jurnal Kejuruteraan*, **2022**. [https://doi.org/10.17576/jkukm-2022-34\(5\)-05](https://doi.org/10.17576/jkukm-2022-34(5)-05).
10. **AR Jamali**, W Khan, A Alajmi, M Zaidi, A Sadeq, M Sohail, "Starch-based Al₂O₃ reinforced NPs packaging for improved shelf-life" *Nano Select*, **2025**.
11. **AR Jamali**, SA Asghar, W Khan, A Sadeq, A Alajmi, M Ovais, "Green Synthesis of Corrosion Resistant Hydrophobic Zn/CaO Nanocomposite Coatings on SAE 1020 Steels" *Arabian Journal for Science and Engineering*, **2025**.

As a co-author:

12. F Akhter, **AR Jamali**, J Ahmed, HJ Arain, MJ Ahsan, MN Akhtar, "Influence of Oxyranilmethanol as a Catalytic Cross-linking Agent over Physiochemical Properties and Pb (II) Adsorption Performance of Resorcinol Formaldehyde Aerogels" *Water, Air, & Soil Pollution*, **2023**. <https://doi.org/10.1007/s11270-023-06777-9>.
13. F Akhter, **AR Jamali**, MA Pinjaro, AS Shaikh, SM Ibrahim, "An Extensive Comparative Study of Highly Enhanced Pb²⁺ Adsorption from Synthetic Wastewater by Organically Tailored Silica Aerogels" *Water, Air, & Soil Pollution*, **2023**. <https://doi.org/10.1007/s11270-023-06378-6>.
14. F Akhter, HL Soni, **AR Jamali**, FM Zoppas, SM Ibrahim, "Efficient adsorption of lead (II) ions from artificial wastewater by organically tailored vs TEOS-doped silica aerogels: synthesis, characterization and isotherm studies" *Water, Air, & Soil Pollution*, **2023**. <https://doi.org/10.1007/s11270-023-06204-z>.
15. F Akhter, DSA Soomro, **AR Jamali**, VJ Inglezakis, "Structural, morphological and physiochemical analysis of Si₈H₂₀O₄/C₂H₅O/C₇H₁₆ modified mesoporous silica aerogels" *Physical Chemistry Research*, **2023**. <https://doi.org/10.22036/pcr.2022.332609.2044>.
16. R Tak, W Khan, **AR Jamali**, A Asim, M Hassan, "Preparation of solid lipid nanoparticles (SLN) and nanostructured lipid carriers (NLC)" *Journal of Population Therapeutics & Clinical Pharmacology*, **2024**. <https://doi.org/10.53555/af1m3d61>.
17. F Akhter, **AR Jamali**, W Khan, "TEOS-doped vs non-TEOS silica aerogels: a comparative study of synthesis, characterisation, isotherm studies and performance evaluation for Pb (II) removal from synthetic" *Water, Air, & Soil Pollution*, **2023**. <https://doi.org/10.1007/s11270-022-06051-4>.
18. Z Anwer, **AR Jamali**, W Khan, J Bhatti, F Akhter, M Batool, "Green synthesis of active Fe₂O₃ nanoparticles using Aloe barbadensis and Camellia sinensis for efficient degradation of malachite green and Congo red dye" *Biomass Conversion and Biorefinery*, **2022**. <https://doi.org/10.1007/s13399-022-03626-3>.
19. F Akhter, H Soni, **AR Jamali**, M Ibrahim, "Correction to: Efficient Adsorption of Lead (II) Ions from Artificial Wastewater by Organically Tailored vs TEOS-Doped Silica Aerogels: Synthesis, Characterization and Isotherm Studies" *Water Air Soil Pollut*, **2023**. <https://doi.org/10.1007/s1127002306204-z>.

20. SH Abro, A Chandio, **AR Jamali**, SA Shah, "Influence of austenite phase transformation on existing Microstructure of low C-Mn steel" *Engineering, Technology & Applied Science Research*, **2018**. <https://doi.org/10.48084/etasr.2324>.

Review Articles:

21. MK Hedayati, M Abdelaziz, **AR Jamali**, M Elbahri, "Tailored metamaterial perfect absorber" *MetaMaterials*, **2015**. <https://doi.org/10.1109/MetaMaterials.2015.7342551>.
22. F Akhter, **AR Jamali**, MN Abbasi, MA Mallah, AA Rao, SA Wahocho, "A comprehensive review of hydrophobic silica and composite aerogels: synthesis, properties and recent progress towards environmental remediation and biomedical applications" *Environmental Science and Pollution Research*, **2023**. <https://doi.org/10.1007/s11356022-24689-9>.
23. F Akhter, SA Soomro, **AR Jamali**, "Rice husk ash as green and sustainable biomass waste for construction and renewable energy applications: a review" *Biomass Convers Biorefinery*, **2021**. <https://doi.org/10.1007/s13399-02101527-5>.

Conference Proceedings:

24. **AR Jamali**, AD Chandio, IA Channa, J Bhatti, "Effect of Inhibitors on Corrosion Rate of UEP Pipelines in Different Oil and Brine Mediums" *1st International Industrial Chemistry Conference*, **2021**.
25. **AR Jamali**, AD Chandio, W Khan, Z Anwer, MH Jokhio Soomro, "Effect of Cryogenic Treatment on Mechanical Properties of AISI 4340 and AISI 4140 Steel" *1st National Conference on Metallurgy and Materials*, **2016**.
26. **AR Jamali**, AD Chandio, W Khan, Z Anwer, IA Soomro, "Plasmonic Effect of Gold Nanoparticles Surrounded by Multidielectric Matrices" *1st National Conference on Metallurgy and Materials*, **2016**.

Software Skills

MultiCal, LabView, Origin, Latex, EndNote, Zotero, SPSS, and MS Office.

Material Science Laboratory Skills

- Synthesis and Characterization of organic polymers
- Clean Room (Photolithography, MEMS and NEMS)
- UHV Physical Vapor Deposition (PVD) Techniques
- Analytical Methods for material characterization (SEM, AFM, XRD, FTIR, UV-Vis, OES, DSC, TGA, Raman)

Language Skills

- English (Professional)
- German (Intermediate)

Internship Training

- Pakistan Steel Mill, Karachi, Pakistan
- Peoples Steel Mills (PSM) Limited, Karachi, Pakistan
- Pakistan Machine Tool Factory (PMTF), Karachi, Pakistan
- Pakistan International Airlines (PIA), Karachi, Pakistan
- Hussein Engineering Works Private Limited, Pakistan
- Metropolitan Steel Corporation (MSC) Limited, Pakistan

Country Visited

Germany, France, Italy, Poland, Denmark, Portugal, Turkey, UAE, and Sri Lanka.

Referee Details

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Prof. Dr. Fayaz Hussain (Chairman/Professor, Materials, NEDUET) Contact: +922199261201 Ext. 2388

Prof. Dr. Yogendra Kumar Mishra (Professor, Smart Materials, Mads Clausen, Denmark) Contact: +4565507623