

Dr. Junaid Ali

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Professional Profile

Technical Project Manager & Materials Scientist specializing in graphene/2D materials and printed electronics. 15+ years bridging lab research and pilot-scale development, with hands-on experience in ink formulation, device fabrication, process integration, cleanroom operations, and H&S; (HAZOP). Track record across university labs and EU-funded programs, leading multidisciplinary teams and delivering scale-up milestones aligned with safety, quality, and budget.

Core Strengths (Role-Aligned)

- Project management for process technology & commissioning (scope, schedule, budget, risk).
- Graphene/2D materials: LPE/ECE, inks, memristors, photodetectors; device testing (Keithley 4200-SCS).
- Printed electronics: inkjet (Dimatix DMP2800), EHD, gravure, roll to roll; glovebox & cleanroom workflows.
- Risk & safety: HAZOP, laser safety, radiation awareness; class 1000 cleanroom operations.
- Instrumentation: SEM, AFM, Raman/PL, FTIR, XRD, ellipsometry, profilometry; PVD/CVD deposition.
- Team leadership: supervising PhD students; supervised 10+ MS students; stakeholder communication.

Relevant Experience

Founding Director, Quantum Materials & Technologies (QuantuMaTech), Islamabad — 10/2023–Present

Commercialization of graphene-based technologies (laser induced graphene, electrochemical exfoliation); R&D; leadership, planning, budgets, and timelines.

Assistant Professor (Physics), COMSATS University Islamabad — 02/2016–Present

Lead Optoelectronics Research Lab; advanced materials synthesis & device fabrication; cleanroom oversight; grant writing and execution; supervising PhD students; supervised 10+ MS students.

Postdoctoral Researcher, National Graphene Institute, University of Manchester — 12/2018–03/2020

Graphene Flagship Core project: printed graphene electronics; HAZOP studies; ink lifecycle optimization; device fabrication/characterization (Dimatix DMP 2800, Keithley 4200 SCS).

Teaching Assistant, Jeju National University — 02/2015–06/2015

Graduate instruction and course logistics in nanoenergy systems.

Research Student, Jeju National University — 02/2013–02/2016

Graphene nanostructures & nanocomposites for resistive switching; printed electronics toolchain; H&S; leadership.

Lecturer (Physics), COMSATS University Islamabad — 02/2006–02/2016

Undergraduate/graduate teaching; lab & timetable management; microelectronics and materials courses.

Selected Funding & Projects

- PI — Low Cost High Performance Photodetectors (RAC NESCOM, 2024, PKR 0.5M).
- PI — 2D Materials Based Resistive Switching Devices (CUI RGP, 2018, PKR 0.3M).
- PI — Femtosecond Laser Annealing/Structuring (HEC SRGP, 2016–17, PKR 0.42M).

Training & Safety

- Emergency First Aider at Work (RQF Level 3), UK (2019–22); Laser Safety; Radiation Awareness; Cleanroom induction.
- Battery coin cell fabrication & testing (PINSTECH, 2023); IBM Qubit x Qubit Quantum Computing (2020–21).

Selected Publications

- ACS Appl. Mater. Interfaces (2024): Tailoring Bi₂Se₃ Topological Insulator for Visible-NIR Photodetectors with Schottky Contacts Using Liquid Phase Exfoliation.
- Chem Engg Journal (2024): Turning Trash into Treasure: Extracting Precious Metals from e-Waste with Electrochemically Exfoliated Graphene Derivatives
- 2D Materials (2020): Printed Graphene/WS₂ Battery-Free Wireless Photosensor on Papers.

References

• Prof. Sir Kostya S. Novoselov,

Nobel Laureate, FRS, Royal Society Research Professor, Director, Institute for Functional Intelligent Materials, National University of Singapore, Singapore 117544, kostya@nus.edu.sg Phone: 66011396

• Prof. Cinzia Casiraghi

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• Prof. Kyung-Hyun Choi (PhD Thesis Supervisor)

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