

Muhammad Arslan



Contact Information:

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Address: Chak No. 471/E.B, Burewala, District Vehari, Punjab, Pakistan.

Date of Birth: 26 July 1997

Profiles:

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Research Statement

MPhil-qualified chemist specializing in density functional theory (DFT) and green catalysis, with hands-on expertise in synthesis, characterization, and computational modeling of organometallic and selenium-based compounds. My research focuses on integrating experimental and computational chemistry to develop sustainable catalytic systems for environmental applications, including dye degradation and pollutant removal. I aim to advance innovative, eco-friendly chemical processes while contributing to interdisciplinary solutions in energy, materials, and environmental protection.

Current Employment

Research Assistant

Synthetic Organometallic and Coordination Chemistry Laboratory, University of Agriculture, Faisalabad, Pakistan.

Academic Qualifications

M.Phil. Chemistry

University of Agriculture, Faisalabad, Pakistan.

CGPA: 3.09/4.00

B.S Chemistry

Government College University, Faisalabad, Pakistan.

CGPA: 3.29/4.00

Certificates

Forensic science and fingerprints: The Open University.

Digital forensics: The Open University.

PUBLICATIONS

Submitted Articles

- **Green Photooxidative Degradation of Reactive Blue Dye via Ascorbic Acid and Its Metal Complexes: Kinetics, RSM Optimization, and DFT Validation.** Manuscript ID: MOLCAA-D-

- **Visible-Light-Induced Green Organocatalytic Degradation of Reactive Black 5: A Mechanistic and Kinetic Study with RSM Optimization.** Manuscript ID: slct.202504638 – *ChemistrySelect*. **IF=2.0**
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Conferences and seminars

- International Conference on Functional Materials and Emerging Technologies (ICFMET)
 - “6th Multi-Disciplinary Student Research International Conference (MDSRIC)”
 - “Two-Days Conference on "Data Analysis Techniques Using Minitab Software”
 - Two days Seminar on “Writing Science and Leveraging Scientific Research (WSLSR)”
 - “Two Day Workshop on Effective Use of Software in academic Writing”
 - “International Conference on Interdisciplinary Research Innovations”
 - “One Day Workshop on Computational Chemistry”
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Research and Laboratory Experience

Synthetic Organometallic and Coordination Chemistry Laboratory

- **Institution:** University of Agriculture, Faisalabad
- **Duration:** From Sep-2021 to present.
- Synthesized various compounds, including benzimidazole-based NHCs, organometallic selenium and silver complexes, and Schiff bases.
- Characterized compounds using NMR, FT-IR, LC/MS and Raman Spectroscopy.
- Single crystal growth
- Conducted DFT studies using Gaussian and GaussView software.

Research and Development Laboratory (Internship)

- **Organization:** Nishat Dyeing and Finishing Industry, Lahore, Pakistan.
 - **Duration:** Feb-2022 to July-2022
 - Developed and optimized textile dyeing/finishing processes, conducted quality testing, and improved dye formulations for enhanced fabric performance.
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Teaching Experience

Lecturer Chemistry

- **Institution:** Chenab College, Faisalabad.
- **Duration:** 2023 – 2024
- Teaching Chemistry to Higher Secondary School (College) Students.

Academy Teaching

- Evening coach at academies in Faisalabad during B.S and MPhil studies.
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Skills

Laboratory Skills

- Experienced in laboratory techniques:
 - **Raman Spectroscopy**
 - Synthesis
 - Salt analysis
 - UV-Vis Spectrophotometry

- Rotatory Evaporator
- Gallenkamp Melting Point Apparatus
- Column Chromatography
- Titrations

Computational Skills

- Proficient in **Gaussian** and **GaussView** for **DFT calculations**
- Minitab (data analysis), ChemDraw (molecular design), Origin (data visualization), Avogadro (molecular modeling)
- Basic proficiency in Python for data processing (under learning stages)

Teaching Skills

- Expertise in teaching Chemistry up to graduation level.
- Ability to create an engaging and productive learning environment.

Communication and Organizational Skills

- Excellent communication and leadership abilities.
- Team-oriented and capable of managing research projects effectively.

Scientific Writing Skills

- Have submitted research articles and review articles.

Scholarships and Awards

- MTB College Sadiqabad Fullyfunded Scholarship for F.Sc Pre-Medical Degree (2014-2016)
- Higher Education Commission of Pakistan Laptop for undergraduate students.

References

1. Dr. Muhammad Adnan Iqbal

- Associate Professor, University of Agriculture, Faisalabad
- **Email:** adnan.iqbal@uaf.edu.pk
- **Phone:** +92 334 4594372

2. Dr. Haq Nawaz

- Associate Professor, University of Agriculture, Faisalabad
- **Email:** haq.nawaz@uaf.edu.pk
- **Phone:** +92 306 4735084

3. Dr. Irfan Majeed

- Associate Professor, University of Agriculture, Faisalabad
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