

Muhammad Arslan



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

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Research Statement

Computational chemist (MPhil) specializing in *DFT modeling* of organometallic and selenium compounds for sustainable catalysis and environmental remediation

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

PUBLICATIONS

Submitted Articles

- **Green Photooxidative Degradation of Reactive Blue Dye via Ascorbic Acid and Its Metal Complexes: Kinetics, RSM Optimization, and DFT Validation.** Anam Shahzadi, Adnan Majeed, Rizwan Ashraf, Faisal Jamil, Mohammad Tauseef Haider, Sabha Khalid, Iqra Yasmeen, Um E Amara, Rida Fatima, **Muhammad Arslan**. Manuscript ID: MOLCAA-D-25-01258 – *Molecular Catalysis*.
- **Visible-Light-Induced Green Organocatalytic Degradation of Reactive Black 5: A Mechanistic and Kinetic Study with RSM Optimization.** Muhammad Arbaz, Sabha Khalid, Anam Shahzadi, Sawsan H. Al-Rawi, Muhammad Adnan Iqbal, Muhammad Kashif, Adnan Majeed, Zain Ul Abidin, Muhammad Yousif, Syed Arslan Hussain, Muhammad Nadeem, **Muhammad Arslan**. Manuscript ID: skt.202504638 – *ChemistrySelect*

Current Employment

Research Assistant

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

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 Use of Essential Software in academic Writing”
- “International Conference on Chemistry, Material and Technology”
- “One Day Workshop on Computational Chemistry”

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.

Teaching Experience

Lecturer Chemistry

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

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.

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.
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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

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