ABDUL SABOOR

Department of Physics and Astronomy, University of Delaware, Newark, DE 19716

asaboor-gh
asaboor-in
(302) 722-7047
asaboor@udel.edu

Data-focused researcher skilled in solving cutting-edge research problems in computational material science using Python (6+ years). Author of open-source tools for post-processing, analysis, and presentation in Jupyter. Experienced in managing projects end to end and collaborating with cross-functional partners. Basic hands-on experience with SQL and MongoDB.

Education

2026 (expected)	Ph.D. Candidate in Physics, University of Delaware
2025	M.S. in Physics, University of Delaware
2017	M.Phil. in Physics, Quaid-i-Azam University, Islamabad
2015	M.Sc. in Physics, Quaid-i-Azam University, Islamabad
2012	B.Sc. in Mathematics & Physics, University of Azad Jammu & Kashmir

Programming & Research Experience

- Built ipyvasp to parse and post-process large VASP simulation outputs for electronic and structural properties of materials.
- Created ipyslides to present live analyses and results inside Jupyter for talks and teaching.
- Building dashlab to create interactive dashboards in Jupyter for data exploration and visualization.
- Led end-to-end analysis alone and with collaborators: clarified questions, and solved research problems using Python.
- Collaborated with experimental and computational researchers to work on cutting-edge materials research including Bi incorporation in III-V alloys for mid-infrared applications and strain effects on electronic properties of 2D & 3D materials.

Technical & Computational Skills

- **Programming:** Python (6+ years), MATLAB, Mathematica, Powershell
- **Data:** SQL and MongoDB (basic hands-on experience)
- **Visualization:** matplotlib, seaborn, plotly
- **Tools:** Git, Linux, Bash, Conda, Jupyter, VS Code, LaTeX

Teaching, Mentoring & Communication

- Trained undergraduate students in coding for data analysis, experiment design, and instrumentation. Wrote step-by-step labs and rubrics. Ran multiple sections and office hours.
- Presented results to audiences with different backgrounds and produced clear documentation and procedures.

Publications

- S. Nair, **A. Saboor**, et al., "Engineering metal oxidation using epitaxial strain," *Nat. Nanotechnol.* (2023)
- **A. Saboor**, S. Khalid, A. Janotti, "Band-gap reduction and band alignments of dilute bismide III-V alloys," *arXiv:2411.19257* (2024)

Conference Participations

- The 67^{th} Electronic Materials Conference, Duke University NC, 2025
- PyCon US, Pittsburgh, 2025
- The Franklin Institute Awards Symposium, Temple University, 2025
- American Physical Society March Meetings, Las Vegas 2023 and Minneapolis 2024
- Workshop for density functional theory, Temple University, 2019

Honors & Awards

- University-funded presentation at the APS March Meeting on III-V semiconductor alloys (2023)
- World Federation of Scientists scholarship, Switzerland (2016)
- Scholarship offer for doctoral studies at *Universidad Nacional Autónoma de México* (2015)

References

Prof. Anderson Janotti
Department of Materials Science and Engineering, University of Delaware
Email: janotti@udel.edu

Prof. Edward R. Lyman
Department of Physics and Astronomy, University of Delaware
Email: elyman@udel.edu