ABDUL SABOOR

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Summary: Detail-oriented Ph.D. Physicist with a strong background in semiconductor physics and computational modeling. Expertise in developing Python-based tools for data acquisition and analysis, designing complex test schemes, and troubleshooting hardware-software interactions. A resourceful problem-solver with proven ability to interpret technical specifications, document results thoroughly, and collaborate effectively with cross-functional teams.

Education

2025 (Expected)	Ph.D. in Physics, University of Delaware, Newark, DE
2025	M.S. in Physics, University of Delaware, Newark, DE
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

Relevant Experience

- **Computational Research & Development** (2018-Present)
  - Designed and implemented comprehensive simulation schemes to test and validate the performance of novel semiconductor materials, interpreting complex physical specifications to define test parameters.
  - Analyzed large datasets from simulations to assess material performance, identify performance trends, and flag deviations from theoretical models.
  - Authored detailed technical documentation and reports on simulation setups, procedures, and results, supporting peer-reviewed publications.
  - Collaborated with experimental teams to troubleshoot discrepancies between simulated and real-world performance, contributing to hardware-level solutions.

- **Technical Instruction & Training** (2018-2025)
  - Trained and mentored undergraduate engineering students in laboratory settings, including the use of test instruments and data acquisition software such as **LabView** for the Fundamentals of Physics Laboratory II (PHYS 228).
  - Developed and delivered technical content for a variety of physics courses, effectively communicating complex topics to diverse audiences.
  - Managed multiple lab sections and projects simultaneously, ensuring all objectives were met on schedule.

Technical Skills

- **Programming Languages:** Python (Expert), MATLAB, Mathematica
- **Test & Lab Software:** LabView (Familiar), VASP, Quantum ESPRESSO, ASE
- **Developer Tools:** Git, VS Code, Jupyter, pytest, pip, Conda, Linux

- **Core Competencies:** Test Development, Data Analysis, Technical Documentation, Resourceful Problem-Solving, Project Management, Technical Training

Authored Open Source Software

- ipyvasp: A Python package for automating and analyzing VASP simulations, demonstrating skills in creating robust test and analysis frameworks.
- ipyslides: A tool for creating interactive presentations within Jupyter Notebooks, showcasing the ability to develop clear and effective communication tools.
- einteract: A library for building interactive dashboards in Jupyter, highlighting skills in user interface design for data analysis.

Selected Publications & Presentations

- S. Nair, **A. Saboor**, et al., "Engineering metal oxidation using epitaxial strain," *Nat. Nanotechnol.*, (2023)
- **A. Saboor**, "ipyvasp: A Python Package for Interactive Analysis and Visualization of VASP Data," Zenodo, *doi:* 10.5281/zenodo.15482349 (2025)
- American Physical Society (APS) March Meeting, Las Vegas, (2023)
  Presented: "Electronic structure and band alignment of dilute III-$V_{1-x}Bi_x$ alloys"

References

Available upon request.