Sajid Ali

Applied Physics,
Northwestern University

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Education

2016–Present **Northwestern University**, *Evanston, IL*,
Ph.D., Applied Physics,
Computational x-ray optics, New Techniques X-ray Microscopy.

2011–2016 **IIT Madras**, *Chennai, India*,
Masters of Tech. in Microelectronics and VLSI Design Electrical Engg.,
Master's Thesis : Impurity induced magnetism in Graphene.

2011–2016 **IIT Madras**, *Chennai, India*,
Bachelors of Technology, Electrical Engg.,
Minor: Physics.

Research Experience

2016–Present **Zone Plate Testing**, *X-Ray Microscopy Group*, Northwestern University, PI: Prof Chris Jacobsen.

- Tested high aspect ratio zone plates for efficiency and tilt tolerance at APS and NSLS.
- Developing parallelized computer codes for high resolution x-ray optics simulation to model tilt misalignment effects.

2015–2016 **Magnetism in Graphene**, *Computational Condensed Matter Group*, IIT Madras, PI: Prof Ranjit Nanda.

- Investigating the magnetic properties of functionalized monolayer and intercalated bilayer graphene using Density Functional Theory.
- Studied a range of candidates for intercalation and performed stability analysis for those which exhibited a non-trivial magnetic moment.

Summer 2015 **A preliminary DFT Study on the stability of xLi2MnO3.(1-x)LiMO2 cathode materials**, *Center for Automotive Energy Materials*, ARCI IITM Research Park, PI: Dr Sahana MB.

- Studied the relative stability of three structural phases of Li1:15(Mn:54Ni:23Co:08)O2,a novel cathode material for Li-ion batteries.
- Created complex heterostructures and studied their electronic structure using Density Functional Theory.

Teaching Experience

2018 **Department of Physics, Northwestern University**, *Evanston, IL*, Graduate Teaching Assistant.

- Undergraduate Lab methods course for calculus based EM
- Led laboratory sections to demonstrate and facilitate experiments.
- Held discussion hours to facilitate learning by one-on-one discussion of homework problems.

2015 **Department of Electrical Engineering, IIT Madras**, *Chennai, India*, Graduate Teaching Assistant.

- The course has a C-language and Python-language component and serves as an introduction to the basics of scientific computing.
- Facilitated lab sessions, held office hours and graded assignments.

Publications

2018 **Zone Plate Performance as a Function of Tilt Analyzed via Multislice Simulations** Syed Sajid Ali, Kenan Li, Michael Wojcik and Chris Jacobsen *Volume 24, Suppl. S2 (Proc. of the 14th Intl. Conf. on X-ray Microscopy) pp. 298-299*

2016 **Magnetism in intercalated graphene** Sajid Ali, BRK Nanda *AIP Conference Proceedings 1731, 130040*

Outreach, Volunteer and Leadership Experience

2018 Taught a class on Emergence for Splash at NU

2013 Graphic Designer for Saarang, IIT Madras

2013 Coordinator for Shaastra Symposium, IIT Madras

2012–2013 Coordinator for Colloquium, IIT Madras

Computer Skills

Languages Python, C, Matlab

Software PETSc, Scientific Python, QuantumEspresso

Platforms Linux (CentOS, RHEL, Fedora, Ubuntu), Windows