



Saptarshi Das
Assistant Scientist

Division Management Administration
Phone: 630-252-4604
Fax: 630-252-5739
Email: das@anl.gov

Argonne National Laboratory
Center for Nanoscale Materials
9700 S. Cass Ave., Bldg 440
Argonne, IL 60439

Ph.D., Purdue University (2013)

Research Summary:

My research primarily focuses on the experimental investigation of low dimensional systems with unique material properties and their implementation into innovative device ideas. I have explored 2D layered semiconductors like, graphene, phosphorene, MoS₂, WSe₂, MoSe₂ and others in the context of low power nano electronics and flexible display technologies. I have also developed expertise on Si nanowires and inorganic and organic ferroelectric materials. I have more than 7 years of experience in the fields of nano-fabrication, nano-characterization and analytical modeling of materials and devices.

Selected Recent Publications:

- 1. Saptarshi Das**, Marcellinus Demarteau, and Andreas Roelofs, “Ambipolar Phosphorene Field Effect Transistor”, ACS Nano 8(11), 11730-38, 2014.
- 2. Saptarshi Das**, Zhang Wei, Marcellinus Demarteau, Madan Dubey, Axel Hoffman and Andreas Roelofs, “Tunable Transport Gap in Phosphorene”, Nano Letters 14(10), 5733-39, 2014.
- 3. Saptarshi Das**, Richard Gulotty, Anirudha Sumant and Andreas Roelofs, “All 2D, High Mobility, Flexible, Transparent, Thinnest Field Effect Transistor”, Nano Letters 14(5), 2861-66, 2014.
- 4. Saptarshi Das**, Abhijith Prakash, Ramon Salazar and Joerg Appenzeller, “Towards Low Power Electronics: Tunneling Phenomena in Di-chalcogenides”, ACS Nano 8(2), 1681-89, 2014.
- 5. Saptarshi Das** and Joerg Appenzeller, “Where does the Current Flow in the Two Dimensional Layered Systems”, Nano Letters 13(7), 3396-3402, 2013.
- 6. Saptarshi Das**, Hong-Yan Chen, Ashish Verma Penumacha and Joerg Appenzeller, “High Performance Multi-Layer MoS₂ Transistor with Scandium Contacts”, Nano Letters 13(1), 100-105, 2013.
- 7. Saptarshi Das** and Joerg Appenzeller, “On the Anomalous Scaling Behavior of Organic Ferroelectric Copolymer PVDF-TrFE”, Organic Electronics 13, 3326-32, 2012.