

Abhijit Mookerjee

Professor Emeritus

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Prof. Abhijit Mookerjee is the seniormost faculty member at the Centre. His work has led to more than 215 publications. H-index is 26 and 10! index – 75. So far he has guided 35 students for their PhD and 3 are still working with him.

- ▶ We have developed the augmented space recursion program for the study of systems with long-ranged and topological disorder. Application has been made to electronic, optical and magnetic effects of disorder on graphene and BN

Apart from the new developed Augmented Space Recursion package, we have studied details of “spatial ergodicity” and the effects of both chemical and topological disorder on different systems. We have also studied effect of

disorder on magnetic relaxation in different systems like FeCo, FeAl, and doped graphene and BN.

| Future Plan

We plan to introduce and publicize the new ASF-Recursion Package.

| Publications in Journals

1. Prashant Singh, Manoj K. Harbola, M. Hemanadhan, **Abhijit Mookerjee**, and D. D. Johnson, *Better band gaps with asymptotically corrected local exchange potentials*, Phys. Rev. B, **93**, 085204, 2016.
2. Suman Chowdhury, Debnarayan Jana, **Abhijit Mookerjee**, *Conductance of disordered graphene sheets: A real space approach*, Physica E: Low-dimensional Systems and Nanostructures, **74**, 347, 2015.
3. Priyadarshini Parida, Biplab Ganguli, **Abhijit Mookerjee**, *Magnetism on rough surfaces of Fe, Co and Ni: An augmented space approach*, Superlattices and Microstructures, **86**, 173, 2015.
4. Soumendu Datta, Gopi Chandra Kaphle, Sayan Baral and **Abhijit Mookerjee**, *Study of morphology effects on magnetic interactions and band gap variations for 3d late transition metal bi-doped ZnO nanostructures by hybrid DFT calculations*, J. Chem. Phys., **143**, 084309, 2015.
5. Suman Chowdhury, D Jana, B Sadhukhan, D Nafday, S Baidya, Tanusri Saha-Dasgupta, **Abhijit Mookerjee**, *Configuration and self-averaging in disordered systems*, Indian Journal of Physics, **90**, 649 (2016).

| Supervision of Students

Ph.D. Students: A.K. Jena: received his PhD from Calcutta University; Suman Chaudhury: submitted his PhD to Calcutta University; Banashri Sadhu Khan: working in Presidency University in collaboration with me; Sujoy Datta: working in Lady Brabourne College in collaboration with me.