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Subjects Theoretical and computational chemistry, Soft matter theory and simulation

Education and experience

- Post Doctoral Research Fellow, **Technical University Darmstadt, Germany**
- Ph.D. in Theoretical Chemistry, **University of Saarland, Germany**
- M.Sc and B.Sc in Chemistry, **Visva Bharati Central University, Santiniketan, India**

Research Subject

- Physical Chemistry
- Theoretical and Computational Chemistry

Research Area

- Atomistic and coarse grained molecular dynamics simulations of polymers and biological systems
- Dissipative particle dynamics (mesoscale) simulations of polymer morphology
- Multiscale particle based simulation methodology development and application to soft matters

Recent publications

- **S. Roy***, T. M. Ataol and F. Müller-Plathe: Molecular dynamics simulations of heptyl phosphonic acid: a potential polymer component for fuel cell polymer membrane, *J. Phys. Chem. B*, 112 (2008), 7403-7409
- **S. Roy** and M. Springborg: Structural and Electronic Properties of Indium Phosphide Nanotubes, *J. Phys. Chem C*; 113(2009), 81-86
- **S. Roy***, D. Markova, A. Kumar, M. Klapper and F. Müller-Plathe, Morphology of phosphonic-acid-functionalized block copolymers studied by dissipative particle dynamics, *Macromolecules*, 42 (2009), 841–848
- Prithvi Raj Pandey and **S. Roy***, Early Stages of Unwinding of Zwitterionic -Helical Homopolymeric Peptides, *Chem. Phys.* 514(2011), 330-335
- P.R.Pandey, **S. Roy***, Head group mediated water insertion in DPPC bilayer, *J. Phys. Chem. B*, 115(2011), 3155–3163
- Souvik Chakraborty, **S. Roy***, Structural, Dynamical, and Thermodynamical Properties of Carbon Nanotube Polycarbonate Composites: A Molecular Dynamics Study, *J. Phys. Chem. B*, 116 (2012), pp 3083–3091