



Present position : Professor

E-mail : jsphy@caluniv.ac.in

Tel : +91-33-2350 8386 ext 406

Education : Ph.D. (Physics), 1996, Calcutta University.

Appointments :

- ❖ Senior Research Fellow [1994-1996], Research Associate [1996-1999], S.N.Bose National Centre for Basic Sciences, Kolkata, India.
- ❖ Post-Doctoral Fellow [1999-2001], University of Notre Dame, Indiana, USA.
- ❖ Lecturer [2001-2006], Department of Physics, Visva-Bharati, Santiniketan, West-Bengal, India.
- ❖ Lecturer [2006-2010], Reader [2010-2013], Associate Professor [2013-2016], Professor [2016-onwards], Department of Physics, University of Calcutta, Kolkata, India.

Selected Publications :

- ❖ *Minimal Coarse-Grained Modeling toward Implicit Solvent Simulation of Generic Bolaamphiphiles* : Somajit Dey and Jayashree Saha, 24(14), 2938 (2020).
- ❖ *Origin and structure of liquid crystalline Blue Phase III* : Tanay Paul and Jayashree Saha, *Scientific Reports*, 10, Article number:16016 (2020) .
- ❖ *Computer simulation study of novel chiral liquid crystal phases* : Tanay Paul and Jayashree Saha, *Phys. Rev. Research (Rapid Comm.)*, 1, 032012(R) (2019).
- ❖ *Effect of head group orientation on phospho- lipid assembly* : Tanay Paul and Jayashree Saha, *Phys. Rev. E*, 95, 062703 (2017).
- ❖ *Solvent- free, molecular- level modeling of self- assembling amphiphiles in water* : Somajit Dey and Jayashree Saha, *Phys. Rev. E*, 95, 023315 (2017).
- ❖ *Soft ellipsoid potential for biaxial molecules* : Jayashree Saha, *Mol. Sim.*, 42, 1437 (2016).

- ☒ *Ferroelectric domain formation in discotic liquid crystals : Monte Carlo study on the influence of boundary conditions* : Tushar Kanti Bose and Jayashree Saha, Phys. Rev. E, 92, 042503 (2015).
- ☒ *Ferroelectric order in liquid crystal phases of polar disk shaped ellipsoids* : Tushar Kanti Bose and Jayashree Saha, Phys. Rev. E, 89, 052509, (2014).
- ☒ *Monte carlo simulations of spontaneous ferroelectric order in discotic liquid crystals* : Tushar Kanti Bose and Jayashree Saha, Phys. Rev. Letts., 110, 26, 265701, (2013).
- ☒ *Origin of tilted-phase generation in systems of ellipsoidal molecules with dipolar interactions* : Tushar Kanti Bose and Jayashree Saha, Phys. Rev. E (Rapid Comm.), 86, 050701, (2012).
- ☒ *Study of liquid crystal phases with a model soft ellipsoid contact potential* : Jayashree Saha, Phys.Lett. A, 375, 18, 1893, (2011).
- ☒ *A simulation study on multicomponent lipid bilayer* : Srilekha Banerjee and Jayashree Saha, Physica A, 362, 2, 423, (2006).
- ☒ *Formation of tilted smectic- C liquid crystal phase in polar Gay- Berne molecules* : J. Saha, T.R.Bose, D. Ghosh, M.Saha, Phys. Lett. A, 336, 396, (2005).

Research Area :

■ Statistical Physics and Soft Condensed Matter Physics :

- # Transport through biomembrane
- # Transfection of DNA complexes and gene-therapy
- # Quantum Entanglement in DNA
- # Phase transition and dynamics of complex fluids

Research guidance :

1. Tushar Kanti Bose, Ph.D. in 2016, currently Assistant Professor, Sri Krishna College, W.B., India.
2. Tanay Paul, Thesis submitted, currently Post Doctoral Fellow at JNCASR, Bengaluru, India.
3. Somajit Dey, Senior Research Fellow (CSIR).
4. Biplab Bawali, Junior Research Fellow (CSIR).
5. Soumalya Bhowmick, Junior Research Fellow (UGC).

Research Advisers :

- ✦ Professor Manoranjan Saha, University of Calcutta , Kolkata, India.
- ✦ Professor Chanchal Kumar Majumdar, S.N.Bose National Centre for Basic Sciences, Kolkata, India.
- ✦ [Professor J.Daniel Gezelter, University of Notre Dame, USA.](#)