Prof. Sushanta Dattagupta

Indian Institute of Science Education and Research, Kolkata

Email : sushantad@gmail.com; director@iiserkol.ac.in

Summery of Achievements :-

Since joining IISER-Kolkata in July, 2006, I have established group activities in the basic science areas of:

i) Magnetism

ii) Quantum Dissipative Systems

iii) Disordered Systems

iv) Quantum Materials and

v) Quantum Computing

Started two new research areas in Aharonov-Bohm effect in quantum computation and synchrotron-based Mossbauer effect. Some publications have ensued from these projects.

Major Contributions :

Have established a new institute called Indian Institute of Science Education and Research, Kolkata (IISER-K) in its Mohanpur, (Nadia, West Bengal) campus. It is in existence for five (5) years.

Publications during the period in peer reviewed journals :

1) Retrieving qubit information despite decoherence; Amnon Aharony, Shmuel Gurvitz, Ora Entin-Wohlman, and Sushanta Dattagupta, Phys. Rev. B 82, 245417 (2010). {IF 3.475}

2) Modeling of ferroelectric domain imaging by atomic force microscopy; Manas K. Roy, Jaita Paul, and Sushanta Dattagupta, J. Appl. Phys. 108, 064102 (2010). {IF 2.072}

3) Domain dynamics and fractal growth analysis in thin ferroelectric films; Manas K. Roy, Jaita Paul, and Sushanta Dattagupta, J. Appl. Phys. 108, 014108 (2010). {IF 2.072}

4) Glucose induced fractal colony pattern of Bacillus thuringiensis; Manas K. Roy, Paromita Banerjee, Tapas K. Sengupta, and Sushanta Dattagupta, J. Theoretical Biology 265, 389 (2010). {IF 2.574}

5) Role of quantum heat bath and confinement in the low-temperature thermodynamics of cyclotron motion; M. Bandopadhyay and S. Dattagupta, Phy. Rev. E 81, 042102 (2010). {IF 2.4}

6) Dissipative quantum systems and the heat capacity; Sushanta Dattagupta, Jishad Kumar, S. Sinha, and P.A. Sreeram, Phy. Rev. E 81, 031136 (2010). {IF 2.4}

7) Evolution of 180°, 90°, and vortex domains in ferroelectric films; Manas Kumar Roy, Shamik Sarkar, and Sushanta Dattagupta, Appl. Phys. Lett. 95, 192905 (2009). {IF 3.554}

8) Low-temperature thermodynamics in the context of dissipative diamagnetism; Jishad Kumar, P.A. Sreeram, and Sushanta Dattagupta, Phy. Rev. E 79, 021130 (2009). {IF 2.4}

9) Magnetism in the ordered metallic perovskite compound $GdPd_3B_xC_{1-x}$; Abhishek Pandey, Chandan Mazumdar, R. Ranganathan and S. Dattagupta, J. Magnetism and Magnetic Materials 321, 2311 (2009). {IF 1.204}

10) Transverse vibrations driven negative thermal expansion in a metallic compound $GdPd_3B_{0.25}C_{0.75}$; Abhishek Pandey, Chandan Mazumdar, R. Ranganathan, S. Tripathi, D. Pandey, and S. Dattagupta, Appl. Phys. Lett. 92, 261913 (2008). {IF 3.554}

11) Probing Single Jumps of Surface Atoms; G. Vogl, M. Sladecek and S. Dattagupta, Phys. Rev. Lett. 99, 155902 (2007). {IF 7.328}

12) Memory in nanomagnetic systems: Superparamagnetism versus spin-glass behavior; M. Bandopadhyay and S. Dattagupta, Phys. Rev. B 74, 214410 (2006). {IF 3.475}

13) Diffusion Enhancement in a Periodic Potential under High-Frequency Space-Dependent Forcing; M.Bandopadhyay, S. Dattagupta and M. Sanyal, Phys. Rev. E 73, 051108 (2006). {IF 2.4}

14) Dissipative Diamagnetism - A Case Study for Equilibrium and Nonequilibrium Statistical Mechanics; M. Bandyopadhyay and S. Dattagupta, J. Stat. Phys. 123, 1273 (2006). {IF 1.39}

15) Landau-Drude Diamagnetism: Fluctuation, Dissipation and Decoherence; M. Bandopadhyay and S. Dattagupta, J. Phys.: Condensed Matter 18, 10029 (2006). {IF 1.964}