

## Publication of faculty members:

### Publication per faculty (2009 to 2016)

Name of the faculty: Dr. Sabyasachi Sen

1. S. Koley, **S. Sen**, S. Saha and S. Chakrabarti, "Fe(100)-(Borazine)<sub>n=1 to 4</sub>-Fe(100): A multifunctional spin diode with spin valve action", **Physical Chemistry Chemical Physics** (Accepted on 24.04.2016).
2. Snehasish Saha, **Sabyasachi Sen**, "Tuning of molecular spin diode action in (B<sub>3</sub>N<sub>3</sub>H<sub>6</sub>)<sub>n=3</sub> self assembled between various combinations of magnetic and nonmagnetic electrodes", published in the proceeding of **International Conference on Nanoscience, Nanotechnology & Advanced Materials** (NANOS-2015)
3. S. Sen and S. Chakrabarti ' In silico design of a tunable molecular spin filter using chromium-carbon-chromium chains' **Chem. Phys.** 428, 34-42 (2014).  
ISSN: 0301-0104  
**Journal Impact factor: 1.957.**
4. M.Chattopadhyaya, **S. Sen**, M.. M. Alam, and S. Chakrabarti ' On site Coulomb repulsion dominates over the non-local Hartree-Fock exchange in determining the band gap of polymers' **J. Phys. Chem. Solids.** 75, 212–223 (2014). ISSN: 0022-3697  
**Journal Impact factor: 1.632**
5. S. Sen and S. Chakrabarti ' Graphitic silicon nitride: a metal free ferromagnet with charge and spin current rectification' **Chem Phys Chem.**  
ISSN 1079-7114 (online) 0031-9007 (print). Submitted in December 2013.  
**Journal Impact factor: 3.349.**
6. M.Chattopadhyaya, M.. M. Alam, **S. Sen**, and S. Chakrabarti ' Electrostatic Spin Crossover and Concomitant Electrically Operated Spin Switch Action in a Ti-Based Endohedral Metallofullerene Polymer' **Phys. Rev. Lett.** 109, 257204 (2012).  
ISSN 1079-7114 (online) 0031-9007 (print).  
**Journal Impact factor: 7.943.**
7. M.Chattopadhyaya, **S. Sen**, M.. M. Alam, and S. Chakrabarti ' The role of relativity and non-local exchange on the band gap of thiophene, selenophene and tellurophene oligomers' **J. Chem. Phys.** 136, 094904 (2012).  
ISSN: 0021-9606 E-ISSN: 1089-7690  
**Journal Impact factor: 3.164.**

8. **S. Sen** and S. Chakrabarti, Ferromagnetically Coupled Cobalt-Benzene-Cobalt: The Smallest Molecular Spin Filter with Unprecedented Spin Injection Coefficient, **J. Am. Chem. Soc.** 132 (2010)15334.  
Print Edition ISSN: 0002-7863 Web Edition ISSN: 1520-5126  
**Journal Impact factor: 10.677**  
Published as a Research Highlight in Nature India, entitled ' Electron spin memory' doi:10.1038/nindia.2010.170; Published online 30 November 2010.
9. **S. Sen**, P. Seal and S. Chakrabarti ' A comparative study of the nonlinear optical properties of CdnXn (X: S, Se and Te) clusters' Journal of Cluster Science, 21 (2010) 591.  
ISSN: 1040-7278 (Print) 1572-8862 (Online).  
**Journal Impact factor: 1.111**
10. **P. Seal, S. Sen and S. Chakrabarti** ' Ab initio Investigation on the Nonlinear Optical Properties of CdnTen (n=1-6) Clusters'**Chem. Phys.** 367 (2010) 152.  
ISSN: 0301-0104  
**Journal Impact factor:1.896**
11. **S. Sen and S. Chakrabarti** 'Negative differential resistance in fused thiophene trimer' **Computational Materials Science**, 45 (2009) 889.  
ISSN: 0927-0256  
**Journal Impact factor:1.878**

**Name of the faculty: Dr. Subhamay Singha Roy**

List of publications:

1. S.Singha Roy, "[A Simple Theoretical Approach to the Fermi Energy Under Size Quantization with Quantum Mathematical Modelling in Nanostructured Materials](#)", published in [Springer Proceedings in Mathematics & Statistics](#), ISBN: 978-81-322-2546-1, 2015.
2. **S.Singha Roy** and P.bandyopadhyaya , "Torsion and entropy driven denaturation of DNA" Phs. Lett A.,377,2884-2889, 2013
3. **Singha Roy, Subhamoy**, " A Simple theoretical analysis of the Einstein relation for the DMR in Nano compounds on the basis of k.p formalism", SPIE Vol. 8093, pp.809329-809329-22(2011) NASA ADS Physics.
4. **S.Singha Roy** "On a simplified analysis of the external photoelectric effect from quantum wells, wires and dots of non-linear optical and optoelectronic nanostructure materials" , ISRN Material Research, 343548(2011).
5. **Singharoy.Subhamoy R.** "Simple theoretical analysis of the thermoelectric power under strong magnetic quantization in superlattices of non-parabolic semiconductors". NASA ADS Physics, , 7646E.45S (2010), USA

6. **S.Singha roy.**“Simple theoretical Analysis of Quantum Confinement on the Carrier Contribution to the Elastic Constants in Nonlinear Optical and Optoelectronic Materials“ . Journal of Naoscience and Nanotechnology, USA, SPIS ,16, (2010).
7. **Subhamoy Singha Roy** “Simple theoretical analysis of the EMC in Degenerate Semiconductor” .Journal of Naoscience and Nanotechnology, USA, (2010).
8. **Roy.Subhamoy Singha,** “Quantum confinement on the carrier contribution to the elastic constants in nonlinear optical and optoelectronic materials” NASA ADS Physics, , 7838E.38R. (2010), USA.
9. **S.Singha Roy** “Nucleic Acid as a Spin system using The Einstein relation in Nanostructured materials”. Journal of Nanoscience and Nanotechnology Lat. DSS, NASA, 2010 USA.
10. **S.Singha Roy.** “The Einstein relation for the diffusivity-mobility ratio in nonlinear optical, optoelectronic and related material”. Physica B, NETHERLANDS, (2009).
11. **S.Singha Roy** “A simple theoretical analysis of the Interband Optical Absorption Co-efficient in Wide –Gap semiconductor in the presence of an external electric field and its dependence on a longitudinal magnetic field” Physica B, NETHERLANDS, (2009).
12. **S.Singha Roy,** “Simple theory of the optical absorption coefficient in non-parabolic semiconductors” J. aPPL PHYSICS, USA (2009).

**1. Name of the faculty: Dr. Swagata Bhattacharjee**

List of publications:

1. **Swagata Bhattacharjee and** Abhijit Biswas, “ Noise Analysis of III-V Anion Based MOSFETs”, accepted in MICRO 2016 for oral presentation.
2. **Swagata Bhattacharjee and** Abhijit Biswas, “ Study of low frequency noise in InAsSb channel MOSFETs” published in the Proceeding of CODEC 15, ISBN: 978-1-4673-9513-7/15.
3. **Swagata Bhattacharjee and** Subhasri Dutta, ‘A simulation Study of Nanoscale Ultrathin-body InAsSb-on-Insulator MOSFETs”, ICAME 2015, ISBN: 978-81-322-2255-2.
4. **Swagata Bhattacharjee and** Abhijit Biswas, “Analog circuit performance of high ultrathin-body InAsSb-on-insulator MOSFETs”, TechSymp 2014, ISBN : 978-4799-2608-4/14/2014 IEEE.
5. Abhijit Biswas and **Swagata Bhattacharjee** "Temperature dependency of threshold voltage and subthreshold slope of strained -Si channel MOSFET's with polysilicon gates", Microelectronic reliability vol. 54No. 8 page 1527-1533 , 2014.

6. Abhijit Biswas and **Swagata Bhattacharjee**, "Accurate modeling of the influence of back gate bias and interface roughness on the threshold voltage of nanoscale DG MOSFETs" *Microelectronic Reliability* vol. 53 page 363-370, 2013.
7. **Swagata Bhattacharjee** and Abhijit Biswas, "Effects of hot carriers on threshold voltage and subthreshold slope of MOS devices with different gate architectures", *Int. J. BITM Trans. EECC*, vol. 2 No 1, page 70 – 82, 2011.
8. **Swagata Bhattacharjee** and Abhijit Biswas, "A continuous drain current model for long Ge channel double gate (DG) p MOSFETs with high-k gate dielectrics and estimation of analog circuit parameters", *Microelectronic Reliability* vol- 51, page 1105-1112, 2011.