Nano Science and Technology Faculty Profile

Faculty	Area of Specialization
 **Prof. Anindaya Datta**	Nanoscience and Nanotechnology: Two dimensional systems, Self-Assembly Engineering, Multiferroics and magnetodielectrics, transport properties, Focus: Water, Energy, Sensing
 **Prof. Vaishali Singh** (Coordinator, M.Tech. (Nano Science & Technology)	Nanomaterials, Mesoporous materials
 **Dr. Tapan K Jain**	Nanotechnology for Drug delivery and Imaging (Theranostic agents)
 **Dr. Shipra Mital Gupta**	Soft methods of nanoparticle synthesis, Characterization of nanomaterials, Catalysis / Photocatalysis using nanoparticles, Nanofluids for Heat transfer applications
 **Dr. Satyabrata Mohapatra**	Nanoscience and Nanotechnology: Plasmonics, Ion beam engineering, Development of Multifunctional hybrid plasmonic nanostructures and nanocomposites for applications in photocatalysis, water purification, SERS, sensing and solar cells.

RESEARCH PUBLICATIONS (2005-2018)

Publications in International Journals:

Prof. AnindyaDatta (h index = 17)

1. Multifunctionality in graphene decorated with cobalt nanorods, O. Mondal, S.Mitra, A.Datta, D. Chakravorty,M.Pal, *Mater. Design* 101 (2016) 204-209.
2. Monte Carlo simulation of radiation damage produced in iron and vanadium by primary knock on atom 'PKA', A. Tundwal, V. Kumar, N. S. Raghaw,A. Datta, *Rad. Effects Defects Solids* 171 (2016) 658–667.
3. Reduced graphene oxide synthesis by high energy ball milling, O. Mondal, S. Mitra, M. Pal, A. Datta, S. Dhara, D. Chakravorty, *Mater. Chem. Phys.* 161 (2015) 123-129.
4. Nanoindentation measurements on nanostructured silver grown within a gel derived silica glass by electrodeposition; D. R. Saha, M. R. Mada, A. Datta, S. Bandyopadhyay and D. Chakravorty, *J. Appl. Phys.*115 (2014) 214308.
5. Ultrafine narrow dispersed copper nanoparticles synthesized by a facile chemical reduction method, O. Mondal, A. Datta, D. Chakravorty, M. Pal, *MRS Commun.* (2013) 1 – 5.
6. Enhanced magnetic anisotropy of nickel nanosheet prepared in Na-4 mica, S. Mitra, A. Mandal, A. Datta, S. Banerjee, D. Chakravorty, *J. Magnetism Magnetic Mater.* 324 (2012) 2452.
7. Magnetodielectric effect in CdSnanosheets grown within Na-4 mica; A. Mandal, S. Mitra, A. Datta, S. Banerjee, and D. Chakravorty, *J. Appl. Phys.*111 (2012) 074303.
8. Multiphonon scattering and photoluminescence of two dimensional ZnSnanosheets grown within Na-4 mica; A. Mandal, S. Mitra, A. Datta, S. Banerjee, S. Dhara, and D. Chakravorty, *J. Appl. Phys.*112 (2012) 074321.
9. Multiferroic properties of NiSnanoplates grown within Na-4 mica; A. Mandal, A. Bose, S. Mitra, A. Datta, S, Banerjee, D. Chakravorty,*J. Magnetism Magnetic Mater.* 324 (2012) 2861–2865.
10. Surface optical Raman in few monolayer GaNnanoribbons embedded in Na-4 mica nanochannels, S. Bhattacharya, A. Datta, S. Dhara and D. Chakravorty*J. Raman Spectrosc.* 42 (2011) 429.
11. Multiferroic Behavior in Composites of Nickel-Exchanged Glass Containing Nanoparticles of Barium Titanate, R. V. R. Naidu, P. Hajra, A. Datta, S. Bhattacharya and D. Chakravorty, *J. Am. Ceram. Soc.* 94 (2011) 3006.
12. Nanoglass in lithia–silica system grown within pores of pellets comprising CuO nanoparticles, D. R. Saha, A. Datta, S. Mandal, M. Mukherjee, A. K. Nandi, and D. Chakravorty, *Solid State Ionics* 186 (2011) 14.
13. Magnetodielectric Effect in Graphene-PVA Nanocomposites; S. Mitra, O. Mondal, D. R. Saha, A. Datta, S. Banerjee, and D. Chakravorty, *J. Phys. Chem. C* 115 (2011) 14285.
14. Ferromagnetic Behavior of Ultrathin Manganese Nanosheets, S. Mitra, A. Mandal, A. Datta, S, Banerjee and D. Chakravorty, *J. Phys. Chem. C* 115 (2011) 14673.
15. Multiferroic behaviour of nanoporous $BaTiO_3$; S. Banerjee, A. Datta, A. Bhaumik and D. Chakravorty;*J. Appl. Phys.*110 (2011) 064316.
16. MultiferroicGaNNanofilms Grown Within Na-4 Mica Channels, S. Bhattacharya, A. Datta and D. Chakravorty, *Appl. PhysLett.*96 (2010) 093109.
17. Magnetodielectric properties of nanodisc bismuth ferrite grown within Na-4 mica nanochannels; P. Hajra, M. Pal, A. Datta, D. Chakravorty, V. Meriakri, M. Parkhomenko, *J. Appl. Phys.* 108 (2010) 114306.
18. Magnetodielectric effect in nickel nanosheet-Na-4 mica composites, S. Mitra, A. Mandal, A. Datta, S. Banerjee and D. Chakravorty, *EPL* 92 (2010) 26003.
19. Synthesis of two-dimensional metallic silver using sodium beta alumina crystal channels, A. Bose, B. N. Pal, A. Datta, D. Chakravorty, *J. Non-Cryst. Solids* 355 (2009) 1448.
20. Growth of two-dimensional GaN in Na-4 Mica nanochannels, S. Bhattacharya, A. Datta, S. Dhara and D. Chakravorty, *J. Phys. D* 42 (2009) 235504.
21. Enhanced growth of anodic alumina nanochannels on Ga-ion pre-irradiated aluminium, C. Y. Liu , A. Datta, N. W. Liu, Y. R. Wu, H. H. Wang, T. H. Chuang, Y. L. Wang,*J. Vac. Sci. Technol. B* 26 2, (2008) 651
22. Order–disorder transition in nanocrystalline Ni_3Al prepared by a chemical route, M. Pal, S.K. Pradhan, P. Bose, A. Datta, D. Chakravorty, *Physica E* 31 (2006) 224–227

23. Mechanism of nanoblister formation in Ga+ self-ion implanted GaN nanowires, S. Dhara, A. Datta, C. T. Wu, K. H. Chen, Y. L. Wang, and S. Muto and T. Tanabe, *Appl. Phys. Lett.*86 (2005) 203119.
24. Ideally ordered 10 nm channel arrays grown by anodization of focused-ion-beam patterned aluminum, C. Y. Peng, C. Y. Liu, N. W. Liu, H. H. Wang, A. Datta, and Y. L. Wang,*J. Vac. Sci. Technol. B* 23 (2005) 559.
25. Formation and *in situ* dynamics of metallic nanoblisters in Ga^+ implanted GaN nanowires, A. Datta, S. Dhara, S. Muto, C. W. Hsu, C. T. Wu, C. H. Shen, T. Tanabe, T. Maruyama, K. H. Chen, L. C. Chen, and Y. L. Wang, *Nanotechnology* 16(2005) 2764.
26. Fabrication of Anodic Alumina Nanochannels with Custom-Designed arrays of Nanochannels, Nai-Wei Liu, AnindyaDatta, Chih-Yi Liu, Huai-Hsien Wang and Yuh-Lin Wang, *Advanced Materials* 17 (2005) 222.

Prof. Vaishali Singh (h index = 9)

1. Wide range humidity sensing of LiCl incorporated in mesoporous silica circular discs,SuhasiniKunchakara, Jyoti Shah, Vaishali Singh and R. K. Kotnala, *Phase Transitions* 90 (2017) 1241-125. (Impact factor-1.06)
2. Synthesis, characterization and magnetic properties of monodisperse Ni, Zn-ferrite nanocrystals, S. Kumar, P. Kumar, Vaishali Singh, U. K. Mandal, and R.K. Kotnala, J *Magnetism Magnetic Mater.* 379 (2015) 50-57. (Impact factor: 1.892)
3. Nanocrystalline $Co_{0.5}Zn_{0.5}Fe_2O_4$ ferrite: Synthesis, characterization and study of their magnetic behavior at different temperatures, S. Kumar, Vaishali Singh, U. K. Mandal and R. K. Kotnala, *InorganicaChimicaActa* 428 (2015) 21-26. (Impact factor: 2.041)
4. Monodisperse Co, Zn-Ferrite nanocrystals: Controlled synthesis, characterization and magnetic properties, S. Kumar, Vaishali Singh, SarojAggarwal, U. K. Mandal and R. K. Kotnala, *J. Magnetism Magnetic Mater.* 324 (2012) 3683-3689. (Impact factor 1.892)
5. Synthesis of nanocrystalline $Ni_{0.5}Zn_{0.5}Fe_2O_4$ ferrite and study of their magnetic behavior at different temperatures, S. Kumar, Vaishali Singh, SaroAggarwal, U. K. Mandal and R. K. Kotnala, *Mater. Sci. Eng. B* 166 (2010) 76-82. (Impact Factor: 1.862)
6. Influence of processing methodology on magnetic behavior of multicomponent ferrite nanocrystals, S. Kumar, Vaishali Singh, SarojAggarwal, U. K. Mandal and R. K. Kotnala, J. Phys. Chem. C 114 (2010) 6272-6280. (Impact Factor: 4.835)
7. Bimodal $Co_{0.5}Zn_{0.5}Fe_2O_4$/PANI nanocomposites: synthesis, formation mechanism and magnetic properties, S. Kumar, Vaishali Singh, SarojAggarwal, U. K. Mandal and R. K. Kotnala, Composites Sci. Technol. 70 (2010) 249-254. (Impact Factor: 4.48)
8. Polyacrylamide and poly(acrylamide-co-2-acrylamido-2-methyl-1-propanesulfonic acid)-silica composite nanogels through in-situ microemulsion polymerization, P. Bhardwaj, Vaishali Singh, U. K.Mandal, SarojAggarwal, *J. Mater. Sci.*45 (2010) 1008-1016. (Impact Factor: 2.305)
9. Synthesis of brushite nanoparticles at different temperatures, S. Singh, Vaishali Singh, SarojAggarwal, U. K. Mandal, *Chemical Papers* 64 (2010) 491-498. (Impact Factor: 1.193)
10. Poly(acrylamide-co-2-acrylamido-2-methyl-1-propanesulfonic acid) nanogels made by inverse microemulsion polymerization, P. Bhardwaj, Vaishali Singh, SarojAggarwal and U. K. Mandal, *J. Macromolecular Science Part A: Pure and Appl. Chem.* 46 (2009) 1083-1094. (Impact factor 0.85)
11. Synthesis of 1-dimensional polyanilinenanofibers by reverse microemulsion, S. Kumar, Vaishali Singh, SarojAggarwal, U. K. Mandal, *Colloid Poly. Sci*, 287 (2009) 1107-1110. (Impact Factor: 2.41)
12. Synthesis of polyaniline nanostructures via reverse micromeulsion technique, S. Kumar, Vaishali Singh, SarojAggarwal and U. K. Mandal, *Soft Mater.* 7 (2009) 150–163. (Impact Factor:1.74)
13. Synthesis of Nanocrystalline Calcium Phosphate in Microemulsion – Effect of Nature of Surfactants, P. Bhardwaj, S. Singh, Vaishali Singh, SarojAggarwal and U.K. Mandal, *J. Colloid Interface Sci.* 319 (2008) 322-329. (Impact Factor: 3.583)
14. Nanosizepolycrylamide/SiO_2 composites in inverse microemulsion polymerization, S. Singh, P. Bhardwaj, Vaishali Singh, SarojAggarwal and U.K. Mandal, *International J. Polymeric Mater.* S7:4 (2008) 404-416. (Impact Factor: 1.87)

Dr. Tapan K. Jain (h index = 11)

1. Synthesis and characterization of pectin-6-aminohexanoic acid-magnetite nanoparticles for drug delivery, V. Arora, A. Sood, J. Shah, R.K. Kotnala, T.K. Jain, *Mater. Sci. Eng. C.* 80 (2017) 243–251.

2. Multifunctional gold coated iron oxide core-shell nanoparticles stabilized using thiolated sodium alginate for biomedical applications, A. Sood, V. Arora, J. Shah, R.K. Kotnala, T.K. Jain, *Mater. Sci. Eng. C.* 80 (2017) 274–281.
3. Synthesis and characterization of thiolated pectin stabilized gold coated magnetic nanoparticles, V. Arora, A. Sood, J. Shah, R.K. Kotnala, T.K. Jain, *Mater. Chem. Phys.* 173 (2016) 161–167.
4. Ascorbic acid-mediated synthesis and characterisation of iron oxide/gold core–shell nanoparticles., A. Sood, V. Arora, J. Shah, R.K. Kotnala, T.K. Jain, *J. Exp. Nanosci.* 11 (2016) 370–382
5. PEG-functionalized Magnetic Nanoparticles for Drug Delivery and Magnetic Resonance Imaging Applications, M. M. Yallapu, S. P. Foy, Tapan K. Jain, V. Labhasetwar, *Pharmaceutical Research*27 (2010) 2283-2295.
6. Magnetic Resonance Imaging of Multifunctional Pluronic Stabilized Iron-Oxide Nanoparticles in Tumor-bearing Mice, Tapan K. Jain, S. Westerfield, B. Erokwu, S. Dimitrijevic, C. A. Flask and V. Labhasetwar, *Biomaterials* 30 (2009) 6748-6756.
7. Inhibition of apoptosis via localized delivery of rapamycin-loaded nanoparticles prevents neointimal hyperplasia and re-endothelialize injured artery, M. K. Reddy, J. K. Vasir, S. K. Sahoo, Tapan K. Jain, M. M. Yallapu, V. Labhasetwar, *Circulation: Cardiovascular Interventions 1* (2008) 209-216.
8. 3-D Tumor Model for In Vitro Evaluation of Anti-cancer Drugs, J. L. Horning, S. K. Sahoo, S. Vijayaraghavalu, S. Dimitrijevic, J. K. Vasir, Tapan K. Jain, A. K. Panda and V. Labhasetwar,*Molecular Pharmaceutics 5* (2008) 849.
9. Magnetic Nanoparticles with Dual Functional Properties: Drug Delivery and Magnetic Resonance Imaging, Tapan K. Jain, J. Richey, M. Strand, D. L. Leslie-Pelecky, C. Flask and V. Labhasetwar, *Biomaterials29* (2008) 4012-4021.
10. Biodistribution, Clearance and Biocompatibility of Iron-Oxide Magnetic Nanoparticles in Rats, Tapan K. Jain, M. K. Reddy, M. A. Morales, D. L. Leslie-Pelecky and VinodLabhasetwar, *Molecular pharmaceutics 5* (2008) 316-327.
11. Synthesis, Characterization and Antiproliferative Activity of Rapamycin-Loaded Poly(N-Isopropylacrylamide)-Based Nanogels in Vascular Smooth Muscle Cells, M. M. Yallapu, J. K. Vasir, Tapan K. Jain, S. Vijayaraghavalu, V. Labhasetwar*J. Biomedical Nanotechnology* 4 (2008) 16–24.
12. Magnetic nanoparticle composition and methods for using the same Inventors, V. Labhasetwar, Tapan K. Jain, D. L. Leslie-Pelecky, (*US patent* application no. 20070264199)
13. Iron-oxide Nanoparticles for Sustained Delivery of Anticancer Agents, Tapan K. Jain, M. A. Morales, S. K. Sahoo, D. L. Leslie-Pelecky, V. Labhasetwar, *Molecular pharmaceutics,2*(3) (2005) 194-205 (impact factor 5.408)
14. Magnetic Studies of Iron Oxide Nanoparticles Coated with Oleic Acid and Pluronic® Block Copolymer, M. A. Morales, Tapan K. Jain, V. Labhasetwar, D. L. Leslie-Pelecky, *J. Appl. Phys.,* 97(10) (2005) 10Q905/1-10Q905/3. (impact factor 2.072)

Dr. Shipra Mital Gupta (h index = 8)

1. Low-temperature CO oxidation: Effect of the second metal on activated carbon supported Pd catalysts, Amit Singhania and Shipra Mital Gupta, *Catalysis Letters* 148(3), (2018) 946-952**.** DOI: https://doi.org/10.1007/s 10562-018-2298-3**.** (Impact factor 2.799)
2. Effect of surfactant on CNT dispersion in polar media and thermal conductivity of prepared CNT nanofluids, Babita, S.K. Sharma, Shipra Mital Gupta, Arinjay Kumar Jain, *ARPN Journal of Engineering and Applied Sciences* 13(4) (2018) 1202-1211. ISSN 1819-6608
3. Effect of Surfactant/CNTs Ratio on the Stability of CNT Nanofluids, Babita, S.K. Sharma, Shipra Mital Gupta, Arinjay Kumar Jain *Advanced Science Letters* 24(2) (2018) 812-816. DOI: https://doi.org/10.1166/asl/2018.10849. (Impact factor 1.253)
4. Nickel nanocatalyst ex-solution from ceria-nickel oxide solid solution for low temperature CO oxidation, Amit Singhania and Shipra Mital Gupta, *Journal of Nanoscience and Nanotechnology* 18(7) (2018) 4614-4620. DOI: https;//doi.org/10.1166/jnn.2018.15342. (Impact factor 1.483)
5. Hydrodynamic studies of CNT nanofluids in helical coil heat eschanger, Babita, S.K. Sharma, Shipra Mital Gupta, Arinjay Kumar Jain, *Materials Research Express* 4 (2017) 124002. DOI: 10.1088/2053-1591/aa9bd2. (Impact factor 1.068)
6. Low temperature CO oxidation over Cu and Pt co-doped ZrO_2 nanoparticles synthesized by solution combustion techniques, Amit Singhania and Shipra Mital Gupta, *Beilstein Journal of Nanotechnology* 8 (2017) 1546-1552. DOI: 10.3762/bjnano.8.156. (Impact factor 3.13)
7. Nanocrystalline ZrO_2 and Pt-doped ZrO_2 catalysts for low temperature CO oxidation, Amit Singhania and Shipra Mital Gupta, *Beilstein Journal of Nanotechnology* 8 (2017) 264–271. DOI:10.3762/bjnano.8.29. (Impact factor 3.13)

8. Preparation and evaluation of stable nanofluids for heat transfer application: A review, Babita, S.K. Sharma and Shipra Mital Gupta, *Experimental Thermal and Fluid Science* 79 (2016) 202–212. DOI: 10.1016/j.expthermflusci.2016.06.029. (Impact factor 2.83)
9. Applications of some common oxide nanoparticles, Shipra Mital Gupta, *International Journal of Nanotechnology and Application* (IJNA) 5(3) (2015) 13-20. ISSN(P): 2277-4777; ISSN(E): 2278-9391.
10. Photocatalysis, Shipra Mital Gupta, *International Journal of Innovative Research and Studies* 3(5) (2014) 511-518. ISSN: 2319-9725.
11. Synthesis and Photophysics of Leadsulphide Nanocrystallites, Shipra Mital Gupta, *ХИМИЯ ВЫСОКИХ ЭНЕРГИЙ (High Energy Chemistry)* 47(3) (2013) 130-134. DOI: 10.1134/S0018143913030053. (Impact factor 0.721)
12. A review on the synthesis of TiO_2 nanoparticles by solution route, Shipra Mital Gupta and M. Tripathi, *Central European Journal of Chemistry* 10(2) (2012) 279-294. DOI: 10.2478/s11532-011-0155-y. (Impact factor 1.027)
13. An overview of commonly used semiconductor nanoparticles in photocatalysis, Shipra Mital Gupta and M. Tripathi, *ХИМИЯ ВЫСОКИХ ЭНЕРГИЙ (High Energy Chemistry)* 46(1) (2012) 1-9. DOI: 10.1134/S0018143912010134. (Impact factor 0.721)
14. A review of TiO_2 nanoparticles, Shipra Mital Gupta and M. Tripathi, *Chinese Sci. Bull.* 56(16) (2011) 1639–1657. DOI: 10.1007/s11434-011-4476-1. (Impact factor 4.092)
15. Silicon Nanoblock, Y. Iwata, Y. Takahashi, Shipra Mital, M. Muto, *Kogyo Zairyo (Engineering Materials - Japanese)* 54(1) (2006) 22-23.

Dr. SatyabrataMohapatra (h index = 23)

1. Atom beam sputtered Ag-TiO_2 nanocomposite thin films for photocatalytic applications, Jaspal Singh, KavitaSahu, A. Pandey, Mohit Kumar, Tapas Ghosh, B. Satpati, T. Som, S. Varma, D. K. Avasthi and SatyabrataMohapatra, *Applied Surface Science* 411(2017) 347-354.(Impact Factor: 3.387)
2. Nanostructured TiO_2 thin films prepared by RF magnetron sputtering for photocatalytic applications, Jaspal Singh, Saif A. Khan, J. Shah, R. K. Kotnala and SatyabrataMohapatra, *Applied Surface Science* 422 (2017)953-961.(Impact Factor: 3.387)
3. Au-ZnOplasmonicnanohybrids for highly efficient photocatalytic degradation of organic dyes,SiniKuriakose, KavitaSahu, Saif A. Khan, A. Tripathi, D. K. Avasthi andSatyabrataMohapatra, *Optical Materials* 64(2017)47-52.(Impact Factor: 2.238)
4. Synthesis of nanostructured TiO_2 thin films with highly enhanced photocatalytic activity by atom beam sputtering,Jaspal Singh, KavitaSahu, SiniKuriakose, NishantTripathi, D. K. Avasthiand SatyabrataMohapatra,*Advanced Materials Letters* 8(2017)107-113.(Impact Factor: 1.46)
5. Structural, optical and plasmonic properties of Ag-TiO_2 hybrid plasmonic nanostructures with enhanced photocatalytic activity, Jaspal Singh, Biswarup Satpati and Satyabrata Mohapatra, *Plasmonics*12 (2017)877-888.(Impact Factor: 2.139)
6. SatyabrataMohapatra, Enhanced gettering of gold at end-of-range defects in high energy ion implanted silicon, *Advanced Materials Letters 8, 999-1003 (2017).* (Impact Factor: 1.46)
7. Plasmonic properties of Ag nanoparticles embedded in GeO_2-SiO_2 matrix by atom beam sputtering, SatyabrataMohapatra, *Physical Chemistry Chemical Physics* 18 (2016)3878-3883.(Impact Factor: 4.449)
8. Enhanced CO gas sensing properties of Cu doped SnO_2 nanostructures prepared by a facile wet chemical method, NehaBhardwaj, AkhileshPandey, BiswarupSatpati, Monika Tomar, Vinay Gupta and SatyabrataMohapatra,*Physical Chemistry Chemical Physics* 18 (2016)18846-18854.(Impact Factor: 4.449)
9. Ion beam engineering of morphological, structural and optical properties of Au/SnO_2 hybrid nanostructured thin films,NehaBhardwaj, AkhileshPandey, D. K. Avasthi and SatyabrataMohapatra, *Journal of Alloys and Compounds* 680 (2016)155-162. (Impact Factor: 3.133)
10. Effects of MeV heavy ion irradiation on structural, morphological and optical properties of nanostructured SnO_2 thin films prepared by thermal evaporation, NehaBhardwaj, AkhileshPandey and SatyabrataMohapatra, *Journal of Alloys and Compounds* 656(2016)647-653.(Impact Factor: 3.133)
11. Radiation stability of $Gd_2Zr_2O_7$: effect of stoichiometry and structure, RenuKumari, P. K. Kulriya, V. Grover, R. Shukla, K. Saravanan, S. Mohapatra, A. K. Tyagi, D. K. Avasthi, *Ceramics International* 42 (2016)103-109.(Impact Factor: 2.986)
12. Structural, optical and gas sensing properties of Ag-SnO_2plasmonic nanocomposite thin films, NehaBhardwaj and SatyabrataMohapatra,*Ceramics International*42 (2016)17237-17242.(Impact Factor: 2.986)

13. Swift heavy ion irradiation of metal containing tetrahedral amorphous carbon films,P. A. Karaseov, V. S. Protopopova,K. V. Karabeshkin, E. N. Shubina, M. V. Mishin, J. Koskinen, S. Mohapatra, A. Tripathi, D. K. Avasthi,A. I. Titov,*Nucl. Instr. and Meth. B* 379 (2016)162-166.(Impact Factor: 1.124)
14. Highly efficient photocatalytic degradation of organic dyes by Cu doped ZnO nanostructures, S.Kuriakose, B.Satpati and SatyabrataMohapatra, *Physical Chemistry Chemical Physics 17 (2015) 25172-25181.* (Impact Factor: 4.493)
15. Effects of solvent on structural, optical and photocatalytic properties of ZnO nanostructures, S.Kuriakose, B.Satpati and SatyabrataMohapatra, *Advanced Materials Letters 6(2015) 1104-1110.* (Impact Factor: 1.9)
16. Thermal evolution of structural, optical and photocatalytic properties of TiO_2 nanostructures, J.Singh and SatyabrataMohapatra, *Advanced Materials Letters 6 (2015) 924-929.* (Impact Factor: 1.9)
17. MeV ion irradiation induced evolution of morphological, structural and optical properties of nanostructured SnO_2 thin films, SatyabrataMohapatra, N.Bhardwaj, A.Pandey, *Materials Research Express2 (2015) 045013.*
18. Effects of swift heavy ion irradiation on the structural, optical and photocatalytic properties of ZnO-CuO nanocomposites prepared by carbothermal evaporation method, S.Kuriakose, D. K. Avasthi, SatyabrataMohapatra, *Beilstein Journal of Nanotechnology 6 (2015) 928-937.* (Impact Factor: 2.67)
19. Ion beam induced evolution of surface morphology and optical properties of SnO_2-ZnO nanocomposite thin films, N.Bhardwaj and SatyabrataMohapatra, *Ceramics International 41 (2015) 8614-8622.* (Impact Factor: 2.605)
20. Rapid green synthesis of silver nanoparticles and nanorods using *Piper nigrum* extract, B. Mohapatra, S.Kuriakose and SatyabrataMohapatra, *Journal of Alloys and Compounds 637 (2015) 119-126.*(Impact Factor: 2.999)
21. Fabrication of SnO_2 three dimensional complex microcrystal chains by carbothermal reduction method, NehaBhardwaj and SatyabrataMohapatra, *Advanced Materials Letters 6 (2015)148-152.* (Impact Factor: 1.9)
22. Facile synthesis of Co doped ZnOnanodisks for highly efficient photocatalytic degradation of methyl orange, S.Kuriakose, B.Satpati and SatyabrataMohapatra, *Advanced Materials Letters 6 (2015) 217-223.* (Impact Factor: 1.9)
23. Biosynthesis of high concentration, stable aqueous dispersions of silver nanoparticles using *Citrus limon* extract, B.Mohapatra, R.Kaintura, J. Singh, S.Kuriakose, and SatyabrataMohapatra, *Advanced Materials Letters 6(2015) 228-234.* (Impact Factor: 1.9)
24. Shape elongation of Zn nanoparticles in silica irradiated with swift heavy ions of different species and energies: Scaling law and some insights on the elongation mechanism, H. Amekura, S. Mohapatra, U. B. Singh, S. A. Khan, P. Kulriya, N. Ishikawa, N. Okubo,and D. K. Avasthi, *Nanotechnology 25 (2014) 435301.*(Impact Factor: 3.821)
25. Effects of MeV ion irradiation on structural and optical properties of SnO_2-ZnO nanocomposites prepared by carbothermal evaporation, N.Bhardwaj, S.Kuriakose, A. Pandey, R. C. Sharma, D. K. Avasthi and SatyabrataMohapatra, *Journal of Alloys and Compounds 617 (2014) 734-739.* (Impact Factor: 2.999)
26. Facile synthesis of Ag-ZnO hybrid nanospindles for highly efficient photocatalytic degradation of methyl orange, S.Kuriakose, V.Choudhary, B.Satpati,SatyabrataMohapatra, *Physical Chemistry Chemical Physics 16 (2014) 17560-17568.* (Impact Factor: 4.493)
27. Enhanced photocatalytic activity of Co doped ZnOnanodisks and nanorods prepared by a facile wet chemical method, S.Kuriakose, B.Satpati,SatyabrataMohapatra,*Physical Chemistry Chemical Physics 16(2014) 12741-12749.* (Impact Factor: 4.493)
28. Tunable surface plasmon resonance of silver nanoclusters in ion exchanged soda lime glass, S. Mohapatra, *Journal of Alloys and Compounds598(2014) 11-15.* (Impact Factor: 2.999)
29. Enhanced photocatalytic activity of Ag-ZnO hybrid plasmonic nanostructures prepared by a facile wet chemical method, S.Kuriakose, Vandana, B. Satpati and S. Mohapatra, *Beilstein Journal ofNanotechnology5 (2014) 639-650.* (Impact Factor: 2.67)
30. Structural and optical properties of SnO_2nanotowers and interconnected nanowires prepared by carbothermal reduction method, N.Bhardwaj, S.Kuriakose and S. Mohapatra, *Journal of Alloys and Compounds 592 (2014) 238-243.* (Impact Factor: 2.999)
31. Synthesis of embedded Au nanostructures by ion irradiation: influence of ion induced viscous flow and sputtering, U. B. Singh, D. C. Agarwal, S. A. Khan, S. Mohapatra, H. Amekura, D. P. Datta, Ajay Kumar, R. K. Choudhury, T. K. Chan, T. Osipowicz, D. K. Avasthi, *Beilstein Journal of Nanotechnology 5 (2014) 105-110.* (Impact Factor: 2.67)
32. Swift heavy ion irradiation of ZnO nanoparticles embedded insilica: Radiation-induced deoxidation and shape elongation, H. Amekura, N. Okubo, N. Ishikawa, D. Tsuya, K. Mitsuishi, Y. Nakayama, U.

B. Singh, S. A. Khan, S. Mohapatra, and D. K. Avasthi, *Applied Physics Letters 103(2013) 203106.*(Impact Factor: 3.794)

33. Ejection of Au and Si nanocrystals from Au implanted Si(100) by MeV heavy ion irradiation, S. Mohapatra, *Applied Surface Science 283 (2013) 128-133.* (Impact Factor: 2.711)
34. Structural, optical and photocatalytic properties of flower-like ZnO nanostructures prepared by a facile wet chemical method, S.Kuriakose, N.Bhardwaj, J. Singh, B.Satpati and S. Mohapatra, *Beilstein Journal of Nanotechnology 4 (2013) 763-770.* (Impact Factor: 2.67)
35. Formation of self-organized silver nanocup-type structures and their plasmonic absorption, Y. K. Mishra, R. Adelung, G. Kumar, M. Elbahri, S. Mohapatra, R. Singhal, A. Tripathi, D. K. Avasthi, *Plasmonics 8 (2013) 811-815.* (Impact Factor: 3.526)
36. *In-situ* TEM observation of electron irradiation induced shape transition of elongated gold nanoparticles embedded in silica, S. Mohapatra, Y. K. Mishra,J. Ghatak, and D. K. Avasthi, *Advanced Materials Letters 4 (2013) 444-448.* (Impact Factor: 1.93)
37. Plasmonic, low frequency Raman and non-linear optical limiting studies in copper-silica nanocomposites, S. Mohapatra, Y. K. Mishra,A. M. Warrier, Reji Philip, S. Sahoo, A. K. Arora, D. K. Avasthi, *Plasmonics*7 *(2012) 25-31.* (Impact Factor: 3.526)
38. Crystal growth behaviours in Au-ZnO nanocomposite under different annealing environments and photoswitchability, Y. K. Mishra,V. S. K. Chakravadhanula, V. Hrkac, S. Jebril, D. C. Agarwal, S. Mohapatra, D. K. Avasthi, L. Kienle, R. Adelung, *Journal of Applied Physics 112 (2012) 064308.* (Impact Factor: 2.21)
39. A study on formation of nanostructure on surface and catcher by dense electronic excitation of Ag thin film, U. B. Singh, D. C. Agarwal, S. A. Khan, S. Mohapatra, A. Tripathi, D. K. Avasthi, *Journal of Physics D: Applied Physics 45 (2012) 445304.* (Impact Factor: 2.721)
40. Synthesis and characterizations of Au–alumina nanocomposites prepared by atom beam co-sputtering, M.Tiwary, D. C. Agarwal, S. Mohapatra, J. C. Pivin,D. K. Avasthi, S. Annapoorni, *Physica Status Solidi A 209 (2012) 2499-2504.* (Impact Factor: 1.616)
41. Synthesis of silver nanorings by atom beam sputtering, S. Mohapatra, Y. K. Mishra, A. Tripathi, D. Kabiraj, D. K. Avasthi, *International Journal of Nanomanufacturing 7 (2011)21-29.*
42. Synthesis and characterization of Ag-polymer nanocomposites, Y. K. Mishra, S. Mohapatra, C. V. S. Kiran, N. P. Lalla, V. Zaporojtchenko, D. K. Avasthi, and F. Faupel, *Journal of Nanoscience and Nanotechnology 10 (2010) 2833*. (Impact Factor: 2.194)
43. Synthesis of plasmonic nanocomposites for diverse applications, D. K. Avasthi, Y. K. Mishra, R. Singhal, D. Kabiraj, S. Mohapatra, B. Mohanta, N. K. Gohil, N. Singh, *Journal of Nanoscience and Nanotechnology 10 (2010) 2705*. (Impact Factor: 2.194)
44. Tailoring the size of gold nanoparticles by electron beam inside transmission electron microscope, Y. K. Mishra, S. Mohapatra, D. K. Avasthi, N. P. Lalla and A. Gupta, *Advanced Materials Letters 1 (2010)151-155.* (Impact Factor: 1.93)
45. Synthesis of controlled dilute magnetic semiconductor by Ni implantation in ZnO crystal, D. K. Mishra, P. Kumar, S. Kumar, S. Mohapatra, I. Sulania, A. Tripathi, D. Kanjilal, S. Varma, M. K. Sharma, RatnamalaChatterjee, *Advanced Science Letters 2 (2009) 1-5.* (Impact Factor: 1.253)
46. SHI induced surface modifications of immiscible Fe/Bi bilayer system, A. Gupta, D. C. Agarwal, S. A. Khan, A. Tripathi, D. Kabiraj, S. Mohapatra, T. Som, D. K. Avasthi, R.S. Chauhan, *Surface and Coatings Technology 203 (2009) 2399-2402.* (Impact Factor: 2.135)
47. Synthesis of gold-silicon core-shell nanoparticles with tunable localized surface plasmon resonance, S. Mohapatra, Y. K. Mishra, D. K. Avasthi, D. Kabiraj, J. Ghatak, S. Varma, *Applied Physics Letters 92 (2008) 103105.* [also selected for *Virtual Journal of Nanoscale Science and Technology*, *volume 17, Issue 12 (2008)*] (Impact Factor: 3.726)
48. Au-ZnO: A tunable localized surface plasmonic nanocomposite, Y. K. Mishra, S. Mohapatra, R. Singhal, D. C. Agarwal, D. K. Avasthi, S. B. Ogale, *Applied Physics Letters 92 (2008) 043107.* (Impact Factor: 3.726)
49. Synthesis and characterization of silver-fullerene C70 nanocomposite, R. Singhal, D.C. Agarwal, S. Mohapatra, Y. K. Mishra, D. Kabiraj, F. Singh, D. K. Avasthi, A. K. Chawla, R. Chandra, G. Mattei, J. C. Pivin, *Applied Physics Letters 93 (2008) 103114.* [also selected for *Virtual Journal of Nanoscale Science and Technology*, *volume 18, Issue 13 (2008)*] (Impact Factor: 3.726)
50. Surface plasmon resonance of Ag nanoparticles embedded in partially oxidized amorphous Si matrix, S. Mohapatra, Y.K. Mishra, J. Ghatak, D. Kabiraj, and D.K.Avasthi, *Journal of Nanoscience and Nanotechnology 8 (2008) 4285.* (Impact Factor: 2.194)
51. Smoothening, roughening and sputtering: the complex evolution of immiscible Fe/Bi bilayer system, A. Gupta, R. S. Chauhan, D. C. Agarwal, S. Kumar, S. A. Khan, A. Tripathi, D. Kabiraj, S. Mohapatra, T. Som and D. K. Avasthi, *Journal of Physics D: Applied Physics 41 (2008) 215306*. (Impact Factor: 2.721)

52. Swift heavy ion induced modifications of fullerene C_{70} thin films, Rahul Singhal, Amit Kumar, Y. K. Mishra, S. Mohapatra, J. C. Pivin, D. K. Avasthi, *Nucl. Instr. Meth. B 266 (2008) 3257-3262*. (Impact Factor: 1.211)
53. Gold–silica nanocomposites for the detection of human ovarian cancer cells: a preliminary study, Y.K. Mishra, S. Mohapatra, D.K. Avasthi, D. Kabiraj, N.P. Lalla, J.C. Pivin, H. Sharma, R.Kar and N. Singh, *Nanotechnology 18 (2007) 345606*. (Impact Factor: 3.821)
54. Synthesis and characterization of Ag nanoparticles in silica matrix by atom beam sputtering, Y. K. Mishra, S. Mohapatra, D. Kabiraj, B. Mohanta, N.P. Lalla, J. C. Pivin, D. K. Avasthi, *ScriptaMaterialia 56 (2007) 629-632*. (Impact Factor: 3.224)
55. Anomalous diffusion of Au implanted into Si through an oxide layer, S. Mohapatra, J. Ghatak, B. Joseph, H. P. Lenka, and D. P. Mahapatra, *Journal of Applied Physics 101 (2007) 063542*. [also selected for *Virtual Journal of Nanoscale Science and Technology*, *volume 15, Issue 14 (2007)*] (Impact Factor: 2.171)
56. Synthesis of Au nanoparticles in partially oxidized Si matrix by atom beam sputtering, S. Mohapatra, Y. K. Mishra, D. K. Avasthi, D. Kabiraj, J. Ghatak, S. Varma, *Journal of Physics D: Applied Physics 40 (2007) 7063-7068*. (Impact Factor: 2.721)
57. Growth of Au nanostructures by annealing of electron beam evaporated thin films, Y. K. Mishra, S. Mohapatra, D. Kabiraj, A. Tripathi, J. C. Pivin, D. K. Avasthi, *Journal of Optics A: Pure and Applied Optics 9 (2007) S410-S414*. (Impact Factor: 1.924)
58. Linear and non-linear optical absorption in copper nanocluster-glass composites, B. Ghosh, P. Chakraborty, S. Mohapatra, P. A. Kurian, C. Vijayan, P. C. Deshmukh, P.Mazzoldi, *Materials Letters 61 (2007) 4512-4515*. (Impact Factor: 2.489)
59. Gettering of implanted Au in MeV C implanted Si, S. Mohapatra, B. Joseph, B. Satpati and D. P. Mahapatra, *Applied Physics A 82 (2006) 297-304*. (Impact Factor: 1.739)
60. Effect of implanted O on gettering of Au at dislocations in Si, S. Mohapatra and D. P. Mahapatra, *Materials Science and Engineering B 129 (2006) 43-47*. (Impact Factor: 2.169)
61. Improvement in the ability to block Hg out diffusion from $Hg_{1-x}Cd_xTe$ by hydrogenation, Anjali, P. Srivastava, S. Mohapatra, R. Pal, H. P. Vyas, B. R. Sekhar, H. K Sehgal, *Semiconductor Science and Technology 21 (2006) 998-1001*.(Impact Factor: 2.21)
62. RBS study of annealing effects in passivated mercury cadmium telluride, Anjali, P. Srivastava, S. Mohapatra, R. Pal, H. P. Vyas, B. R. Sekhar, H. K. Sehgal, *Semiconductor Science and Technology 20 (2005) 1072-1077*. (Impact Factor: 2.21)
63. CdTe and anodic oxides on $Hg_{1-x}Cd_xTe$: interface and composition analysis using Rutherford backscattering spectrometry, Anjali, P. Srivastava, S. Mohapatra, H. P. Vyas, B. R. Sekhar, H. K. Sehgal, *Surface and Interface Analysis 37 (2005) 562-567*. (Impact Factor: 1.247)
64. Size saturation in low energy ion beam synthesized Au nanoclusters and their size redistribution with O irradiation, B. Joseph, S. Mohapatra, H. P. Lenka, P. Kuiri and D. P. Mahapatra, *Thin Solid Films 492, 1-2 (2005) 35-40*. (Impact Factor: 1.759)
65. Low energy O induced redistribution of nanosized Au inclusions in an oxide layer grown on Si(100), B. Joseph, S. Mohapatra, B. Satpati, H. P. Lenka, P. K. Kuiri and D. P. Mahapatra, *Nucl. Instr. and Meth. B 227 (2005) 559-566*. (Impact Factor: 1.211)

Publications in National Journals:

Prof. Anindya Datta

1. Gamma radiation induced resistivity changes in Iron, A.Tundwal, V. Kumar and A.Datta, *Indian J. Phys.*91 (2017)293-298.
2. A brief review on graphene/inorganic nanostructure composites: materials for the future, S.Mitra, S. Banerjee, A.Datta and D.Chakravorty, *Indian J. Phys.* 90(2016)1019.
3. Magnetodielectric effect in $Ni_{0.5}Zn_{0.5}$ Fe_2O_4–$BaTiO_3$ nanocomposites, S. Banerjee, P. Hajra, A. Datta, A. Bhaumik, M. R. Mada, S. Bandyopadhyay, D. Chakravorty, *Bull. Mater. Sci.* 37 (2014) 497–504.
4. Magneto-dielectric effect in $Pb(Zr_{0.52}Ti_{0.48})O_3$ filled nanoporous $Ni_{0.5}Zn_{0.5}Fe_2O_4$ composite, S. Banerjee, A. Datta, A. Bhaumikand D. Chakravorty;*Bull. Mater. Sci.* 35 (2012) 919–924.
5. Template based growth of nanoscaled films : a brief review:S. Mitra, A. Mandal, S. Banerjee, A. Datta, S. Bhattacharya, A. Bose, and D. Chakravorty, *Indian J. Phys.* 85 (2011) 649.

Books & Book Chapters:

Dr. Tapan K. Jain

1. Nano-sized carriers for drug delivery, S. Sahoo, Tapan Jain, M. Reddy and V. Labhasetwar, in *"Nanobiotechnology: BioInspired Devices and Materials of the Future"*, (Ed. Elan Levy), The Humana Press Inc., Totowa, NJ, (2008) 329-348.
2. Magnetic nanoparticles for Drug Delivery, S. P Foy, A. Stine, Tapan K. Jain and V. Labhasetwar, in *"Methods in Bioengineering: Nanoscale Bioengineering and Nanomedicine"* (Ed. Kaushal Rege, Igor L. Medintz), Artech House, Technology & Engineering (2009) 123-136.

Dr. Shipra Mital Gupta

1. *Introduction to Nanotechnology*, Risal Singh and Shipra Mital Gupta, Oxford University Press (2016). ISBN-10: 019945678X, ISBN-13**:** 978-0199456789.
2. Contributing Author in "*Engineering Chemistry*", Wiley India Pvt. Ltd. (2011). ISBN: 978-81-265-1988-0.

Dr. Satyabrata Mohapatra

1. Synthesis of nanocomposites thin films by atom beam co-sputtering, S. Mohapatra, D. Kabiraj and D. K. Avasthi, *Synthesis and Engineering of Nanostructures by Energetic Ions* (2011) (Nova publishers, Editors: Devesh Kumar Avasthi and J.C. Pivin)

Papers published in Conference/ Symposium Proceedings:

Dr. Tapan K. Jain

1. Thiolated sodium alginate stabilized gold coated iron oxide nanoparticles for biomedical applications at International conference on Recent Advances in Materials Science and Biophysics AnkurSood, Varun Arora, Jyoti Shah, R.K. Kotnala, Tapan K Jain. January 23-25, 2018 Mangalore University, India.

2. Synthesis and characterization of Pectin-magnetic nanocomposites for drug delivery at International conference on Recent Advances in Materials Science and Biophysics, Varun Arora, Ankur Sood, Jyoti Shah, R.K. Kotnala, Tapan K Jain. January 23-25, 2018 Mangalore University, India.

3. Biodistribution, Clearance, and Biocompatibility of Iron-Oxide Magnetic Nanoparticles in Rats, Tapan K. Jain, M. K. Reddy, M. A. Morales, D. L. Leslie-Pelecky and V. Labhasetwar, 34th Annual Meeting of the Controlled Release Society, July 7 – 11, 2007, Long Beach Convention Center, Long Beach , California
4. Tissue model for in vitro evaluation of anticancer agents, S. K. Sahoo, A. K. Panda, J. Horning, Tapan K. Jain and V. Labhasetwar, 33rdAnnual Meeting & Exposition of the Controlled Release Society, July 22 - 26, 2006, Vienna, Austria.

Dr. Satyabrata Mohapatra

1. Modification of properties of metal containing carbon films by swift heavy ion irradiation, A. Tripathi, D. K. Avasthi, S. Kumar, S. Mohapatra, A. I. Titov, P. A. Karaseov, M. V. Mishin, A. Ya. Vinogradov, O.A. Podsvirov,E.N. Shubina, A.L. Shakhmin, Proceedings of 16th International Conference on Thin Films (ICTF16) from October 13-16, 2014 at Dubrovnik, Croatia.
2. Role of melting temperature in intermixing of miscible metal/metal bilayers induced by swift heavy ions, A. Gupta, R. S. Chauhan, D. C. Agarwal, S. Kumar, S. A. Khan, S. Mohapatra, A. Tripathi, and T. Som, *Radiation Effects Defects in Solids166 (2011) 689-695.* (Impact Factor: 0.66) (Proceedings of the conference on swift heavy ions in materials engineering and characterization (SHIMEC 2010))
3. Shape deformation of embedded metal nanoparticles by swift heavy ion irradiation, F. Singh, S. Mohapatra, J. P. Stoquert, D. K. Avasthi, J. C. Pivin, *Nucl. Instr. Meth. B 267 (2009) 936-940.* (Impact Factor: 1.211) (Proceedings of the Seventh International Symposium on Swift Heavy Ions in Matter)
4. Swift heavy ion induced modifications of optical and microstructural properties of silver-fullerene C_{60} nanocomposite, R. Singhal, D. C. Agarwal, Y. K. Mishra, S. Mohapatra, D. K. Avasthi, A. K. Chawla, R. Chandra, J. C Pivin, *Nucl. Instr. Meth. B 267 (2009) 1349-1352.*(Impact Factor: 1.211) (Proceedings of the 16th International Conference on Ion Beam Modification of Materials)

5. Au-ZnO: A tunable plasmonic nanocomposite for SERS and switching, Y. K. Mishra, S. Jebril, D. C. Agarwal, S. Mohapatra, R. Singhal, D. K. Avasthi and R. Adelung, Proceedings of CLEO/Europe - EQEC 2009- European Conference on Lasers and Electro-Optics and the European Quantum Electronics Conference(2009) .
6. Compositional analysis of atom beam co-sputtered metal-silica nanocomposites by Rutherford backscattering spectrometry, H. Kumar, Y. K. Mishra, S. Mohapatra, D. Kabiraj, J. C. Pivin, S. Ghosh and D. K. Avasthi, *Nucl. Instr. Meth. B 266 (2008) 1511-1516*. (Impact Factor: 1.211) (Proceedings of the Eighteenth International Conference on Ion Beam Analysis)
7. Growth of self-organized metal nanostructures by physical methods, Y. K. Mishra, D. Kabiraj, S. Mohapatra, D. K. Avasthi, *Synthesis Reactivity in Inorganic Metal-Organic Nano-Metal Chemistry 37 (2007) 357-362*. (Impact Factor: 0.579) (Special Issue: Nanoscience and Nanotechnology Papers selected from the International Conference on Nano-Materials for Electronics (ICNME 2006))