




Detail Bio-data: Dr. Sasanka Deka

Title	Dr.	First Name	Sasanka	Last Name	Deka	Photograph
Designation	Assistant Professor					
Address	Department of Chemistry, University of Delhi, North Campus, Delhi-110007. Faculty M.Tech. Nanoscience and Nanotechnology course (NSNT) Office: #203, 2 nd floor, Old USIC building, DU.					
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Email	ssdeka@gmail.com , sdeka@chemistry.du.ac.in , Web-Page http://people.du.ac.in/~sdeka/					
Educational Qualifications						
Degree	Institution				Year, Division, (% PC)	
Ph.D.	Ph.D. (Chemistry), National Chemical Laboratory (NCL), Pune				2007	
PG	M.Sc. (Chemistry), Gauhati University, Guwahati				2001, 1 st Div., 71.13 %	
Career Profile						
<p>1st June, 2010 – till date: Assistant Professor, Department of Chemistry, University of Delhi.</p> <p>2009 - 2010: Senior Post Doctoral Researcher, Italian Institute of Technology (IIT), Genova, Italy.</p> <p>2007 - 2009: Post Doctoral Researcher, National Nanotechnology Laboratory, Lecce, Italy.</p> <p>2001 - 2002: Project Research Fellow, Institute of Advance Study in Science and Technology (IASST), Guwahati, India.</p>						
Administrative Assignments						
<p>Superintendent of Examination-NSNT-May/June-2012; Time table fixation Committee; Member Seminar Committee Chemistry; Member departmental instrument committee; Convener of NSNT conference; Organizing committee member; Deputy convener centralized evaluation centre. Departmental Nodal officer for NorthEast Students. Convener Inorganic section.</p>						
Areas of Interest / Specialization						
<p>Nanochemistry, Novel nanomaterials for energy research & applications, Nanomaterials for catalyst; Multifunctional materials, Hybrid nanocrystals, Inorganic chemistry.</p>						

Subjects Taught
<p><u>M.Tech. (Nanoscience and Nanotechnology)</u></p> <p>NSNT-103: Photochemistry, Surface phenomena and catalysis, Phase transformation</p> <p>NSNT-204: Synthesis and Characterization of Nano Materials, Physical methods, Chemical methods.</p> <p>NSNT-301: Material Science</p> <p>NSNT-402: Properties of Nanomaterials</p> <p><u>M.Tech. (Nanoscience and Nanotechnology)</u></p> <p>NSNT-601: Project work and dissertation. <u>(6th Semester)</u></p> <p>Coordinator: NSNT L3/505 laboratory/project work paper <u>(5th Semester)</u></p> <p><u>M.Tech. (Nanoscience and Nanotechnology) (2nd Semester)</u></p> <p>NSNT-205: Chemistry Practical.</p> <p><u>M. Sc. Final (Theory Course A)</u></p> <p>Inorganic Reaction Mechanisms; Molecular rearrangement processes</p> <p><u>M. Sc. Previous</u></p> <p>Practical: Inorganic chemistry</p> <p><u>Ph.D. Course work (Unit 23)</u></p> <p>Inorganic reaction mechanisms</p> <p><u>Ph.D. Course work (Unit 28)</u></p> <p>Nanochemistry</p>
Research Guidance
<p><i>Supervision of Doctoral Thesis, under progress: 02</i></p> <p>Ms. Himani. M.Sc. University of Delhi (2012)</p> <p>Mr. Mukesh Kumar. M.Sc. Kurukshetra University (2012)</p> <p>Ms. Meenakshi. M.Sc. Kumaun University Nainital (2012)</p> <p>Mr. Vikash Dahiya. M.Sc. DCR University 2013, M.Tech. IIT Delhi, (2015).</p> <p><i>Ph.D. degree awarded</i></p> <p>Ms. Priya Khush, M.Sc. University of Delhi (2010), <u>degree awarded 2015.</u></p>

Mr. KalyanJyoti Deori, M.Sc. University of Delhi (2010), submitted thesis 2015.

Postdoctoral researcher/Research associate: 01

Dr. Kiran Soni (CSIR)

Supervision of M.Tech/M.Sc. dissertation (5/6 months)

Ms. Priya Pandey "Synthesis and characterization of Cu_2ZnSnS_4 nanocrystals synthesized by reverse micelle technique" M.Sc +M.Tech (Nanotechnology, dual degree), Amity Institute of Nanotechnology (AINT), Uttar Pradesh, Noida. Enrollment no: A1217410003. Submitted: September 2011.

Mr. Nishant Iyengar "Synthesis and Characterization of Copper Chalcogenide and Silver Chalcogenide Nanocrystals using Cation-Exchange Method" Master in Technology (NSNT/M.Tech./2/2009-2010), University of Delhi. Submitted: July 2012.

Mr. Sazal Kumar Methi "Synthesis of Bismuth telluride based alloy nanomaterials for thermoelectric studies" M.Sc +M.Tech (Nanotechnology, dual degree). Amity Institute of Nanotechnology (AINT), Uttar Pradesh, Noida. Enrollment no: A1217412005. Submitted: September 2013.

Mr. Praveen Kumar "Synthesis SnS and SnS₂ nanoparticles of various morphologies and their application as supercapacitor material" Master in Technology (NSNT/M.Tech./2014), University of Delhi.

Mr. Chinmoy Kalita "Selective Oxidation Reactions of Aryl alcohol and Substituted Aryl alcohol using Cerium Oxide Nanoparticles as Heterogeneous Catalyst" B.S. Chemistry, VIII sem, Gauhati University, Guwahati.

Ms. Shivangi agarwal "Hydrothermal Synthesis and supercapacitance study of tin chalcogenides and their reduced graphene oxide nanocomposites" B.Tech degree (Nanotechnology) Amity Institute of Nanotechnology (AINT), Uttar Pradesh, Noida. Enrollment no: A1218311018. Submitted: May, 2015.

Publications Profile

Patent

1. "A process for producing aromatic carboxylic acids by oxidation of methyl arenes" **Indian Patent application No. 1346/DEL/2013** dated 7th May 2013, Saha, B.; **Deka, S.**; Gupta, D.; Deori, K.
2. "Octapod shaped nanocrystals and use thereof", **U.S. Patent Application no. 13/196123**. Case No: 4161-65. (02-08-2011) L. Manna, D. Dorfs, Miszta, K.; **Deka, S.**; Genovese, A. G. Bertoni, R. Brescia, S. Marras, Y. Zhang, R. Krahne, R. Cingolani.

Books/Monographs (Authored)

1. Krahne, R., Manna, L., Morello, G., Figuerola, A., George, C., **Deka, S.** 2013. Physical Properties of Nanorods. Springer publications, NanoScience and Technology series, **ISBN 978-3-642-36430-3**
2. **Deka, S.** 2011. Doped Transition Metal Oxide and Ferrite Nanocrystals. Lap Lambert Academic Publishing GmbH & Co. KG, Germany, **ISBN 978-3-8443-2306-1. (authored)**

Research papers published in Refereed/Peer Reviewed Journals

1. Priya Kush, kalyanjyoti Deori, Anup Kumar and **Sasanka Deka***, "Efficient Hydrogen/Oxygen Evolution and Photocatalytic Dye Degradation and Reduction of Aqueous Cr(VI) by Surfactant Free Hydrophilic $\text{Cu}_2\text{ZnSnS}_4$ Nanoparticles", *J. Mater. Chem. A*, 2015, **3**, 8098-8106.
2. Kalyanjyoti Deori, Chinmoy Kalita, **Deka Sasanka***, "(100) surface exposed CeO_2 Nanocube as Efficient Heterogeneous Catalyst in Tandem Oxidation of Benzyl Alcohol, para-Chlorobenzyl Alcohol and Toluene to Corresponding Aldehydes Selectively", *J. Mater. Chem. A*, 2015, **3**, 6909-6920.
3. Priya Kush, **Deka Sasanka***, "Anisotropic kesterite $\text{Cu}_2\text{ZnSnSe}_4$ colloidal nanoparticles: Photoelectrical and photocatalytic properties" *Mater. Chem. Phys.*, 2015 in press (DOI: doi:10.1016/j.matchemphys.2015.06.034)
4. Himani Chauhan, Manoj K Singh, S.A. Hashmi and **Sasanka Deka***, "Synthesis of surfactant free SnS nanorods by solvothermal route with better electrochemical properties towards supercapacitor application", *RSC Advances*, 2015, **5**, 17228-17235.
5. Kumar, M. **Deka, Sasanka*** "Multiply twinned AgNi alloy nanoparticles as highly active catalyst for multiple reduction and degradation reactions". 2014, **6**, p 16071–16081.
6. Das, S. Satpati, B. Himani Chauhan, **Deka, Sasanka**. Chinnakonda S. Gopinath and Tanushree Bala, "Preferential growth of Au on CdSe quantum dots using Langmuir–Blodgett technique" *RSC Advances*, 2014, **4**, 64535-64541.
7. Deori, K. Gupta, D. Saha, B. **Deka, Sasanka***. 2014 "Design of 3-Dimensionally Self-Assembled CeO_2 Nanocube as a Breakthrough Catalyst for Efficient Alkylarene Oxidation in Water" *ACS Catal.*, **4**, p 3169-3179
8. Chauhan, H. Kumar, Y. **Deka, Sasanka***. 2014 "New synthesis of two-dimensional CdSe/CdS core@shell dot-in-hexagonal platelet nanoheterostructures with interesting optical properties" *Nanoscale*, **6**, p 10347-10354
9. Kush, P. **Deka, Sasanka***. 2014 "Photoelectrical properties of surfactant free kesterite $\text{Cu}_2\text{ZnSnSe}_4$ hydrophilic nanocrystal ink and the stability in polar solvents" *Journal of Nanoparticle Research*. **16**:2600
10. Deori, K. Ujjain, S.K. Sharma, R. K. **Deka, Sasanka***. 2013 "Morphology Controlled Synthesis of Nanoporous Co_3O_4 Nanostructures and Their Charge Storage Characteristics in Supercapacitors" *ACS Appl. Mater. Interfaces*, **5** (21), 10665–10672.
11. Deori, K. S. **Deka, Sasanka***. 2013 "Morphology oriented surfactant dependent CoO and reaction time dependent Co_3O_4 nanocrystals from single synthesis method and their optical and magnetic properties" *CrysEngComm*, **15**, 8465-8474.
12. Kush, P. Ujjain, S.K. Mehra, N. C. Jha, P. Sharma, R. K. **Deka, Sasanka***. 2013 Development and Properties of Surfactant-Free Water-Dispersible $\text{Cu}_2\text{ZnSnS}_4$ Nanocrystals: A Material for Low-Cost Photovoltaics *ChemPhysChem* **14**, 2793 – 2799.
13. Deori, K. Gupta, D. Saha, B. Awasthi, S. **Deka, Sasanka***. 2013. Introducing Nanocrystalline CeO_2 as Heterogeneous Environmental Friendly Catalyst for the Aerobic Oxidation of Para-xylene to Terephthalic Acid in Water" *J. Mater. Chem. A* **1**, p7091-7099.
14. Kush, P. Mehra, N.C. **Deka, Sasanka***. 2013. Synthesis, characterization and optical properties of novel hierarchical flower like pyrite FeS_2 particles for low cost photovoltaics. *Sci. Adv. Mater.* **5**(7) 588-595.

15. Vilvamani, N. **Deka, S.** Gupta, T. 2013 Transition metal ion-induced anisotropic architectures using 4,4'-dicarboxy-2,2'-bipyridyl-silver nanopetals. *Adv. Mater. Lett.*, 4(4), 252-260.
16. Shankar, S. S., **Deka, S***. 2011. Metal nanocrystals and their applications in biomedical systems. *Science of Advanced Materials* 3(2): 169-195.
17. Krahne, R., Morello, G., Figuerola, A., George, C., **Deka, S.**, Manna, L. 2011. Physical properties of elongated inorganic nanoparticles. *Physics Reports* 501(3-5): 75-221
18. **Deka, S**, K Miszta, D Dorfs, A Genovese, G Bertoni and L Manna. 2010. Octapod-shaped colloidal nanocrystals of cadmium chalcogenides via "one-pot" cation exchange and seeded growth. *Nano Lett.* 10 (9): 3770–3776.
19. **Deka, S**, A, Genovese, Y Zhang, K Miszta, G Bertoni, R Krahne, C Giannini and L Manna. 2010. Phosphine-Free Synthesis of p-Type Copper(I) Selenide Nanocrystals in Hot Coordinating Solvents. *Journal of the American Chemical Society.* 132(26): 8912-8914.
20. **Deka, S***, A Falqui, G Bertoni, C Sangregorio, G Morello, M De Giorgi, C Giannini, R Cingolani, L Manna and P D Cozzoli. 2009. Fluorescent Asymmetrically Cobalt-Tipped CdSe@CdS Core@Shell Nanorod Heterostructures Exhibiting Room-Temperature Ferromagnetic Behavior. *Journal of the American Chemical Society.* 131(35): 12817-12828.
21. Quarta, A, A Ragusa, **S Deka**, C Tortiglione, A Tino, R Cingolani and T Pellegrino. 2009. Bio-conjugation of rod-shaped fluorescent nanocrystals for efficient targeted cell labeling. *Langmuir.* 25(21): 12614-12622.
22. **Deka, S**, A Quarta, M G Lupo, A Falqui, S Boninelli, G Lanzani, G Morello, M De Giorgi, C Giannini, R Cingolani, T Pellegrino and L Manna. 2009. CdSe/CdS/ZnS Double Shell Nanorods with High Photoluminescence Efficiency and Their Exploitation As Biolabeling Probes. *Journal of the American Chemical Society.* 131(8): 2948-2958.
23. **Deka, S*** and P A Joy. 2009. Single step synthesis and properties of M/MFe₂O₄ and PVDF/M/MFe₂O₄ (M = Co, Ni) magnetic nanocomposites. *Science of Advanced Materials.* 1 (3): 262-268.
24. **Deka, S** and P A Joy. 2008. Superparamagnetic Nanocrystalline ZnFe₂O₄ with a Very High Curie Temperature. *Journal of Nanoscience and Nanotechnology.* 8 (8): 3955-3958.
25. Sreeja, V, S Vijayanand, **S Deka** and P A Joy. 2008. Magnetic and Mössbauer spectroscopic studies of NiZn ferrite nanoparticles synthesized by a combustion method. *Hyperfine Interact.* 189 (1-3): 99-107.
26. **Deka, S** and P A Joy. 2007. Enhancement of the phase transformation temperature of γ -Fe₂O₃ by Zn²⁺ doping. *Journal of Materials Chemistry.* 17(5): 453-456.
27. **Deka, S** and P A Joy. 2007. Enhanced permeability and dielectric constant of NiZn ferrite synthesized in nanocrystalline form by a combustion method. *Journal of the American Ceramic Society.* 90 (5): 1494-1499.
28. **Deka, S** and P A Joy. 2007. Synthesis and magnetic properties of Mn doped ZnO nanowires. *Solid State Communications.* 142 (4): 190-194.
29. **Deka, S** and P A Joy. 2006. Ferromagnetism induced by hydrogen in polycrystalline nonmagnetic Zn_{0.95}Co_{0.05}O. *Applied Physics Letter.* 89(3): 032508.
30. **Deka, S**, R Pasricha and P A Joy. 2006. Experimental comparison of the structural, magnetic, electronic, and optical properties of ferromagnetic and paramagnetic polycrystalline Zn_{1-x}Co_xO (x = 0,

0.05, 0.1). *Physical Review B*. 74(3): 033201.

31. **Deka, S** and P A Joy. 2006. Characterization of nanosized NiZn ferrite synthesized by an auto-combustion method. *Materials Chemistry & Physics*. 100 (1): 98-101.
32. Rajendran, M, **S Deka**, P A Joy and A K Bhattacharya. 2006. Size-dependent magnetic properties of nanocrystalline yttrium iron garnet powders. *Journal of Magnetism & Magnetic Materials*. 301(1): 212-219.
33. **Deka, S** and P A Joy. 2006. Electronic structure and ferromagnetism of polycrystalline $Zn_{1-x}Co_xO$ ($0 < x < 0.15$). *Solid State Communications*. 134 (10): 665-669. (TOP 25 Hottest and most downloaded article within the journal).
34. **Deka, S** and P A Joy. 2005. Direct observation of Ni metal impurities in lightly doped ferromagnetic polycrystalline (ZnNi)O. *Chemistry of Materials*. 17(26): 6507-6510.
35. **Deka, S** and P A Joy. 2004. Nanocrystalline Zinc ferrite with high magnetization at room temperature. *MSI Bulletin*. 27: 23-25.
36. **Deka, S**, R Pasricha and P A Joy. 2004. Synthesis and ferromagnetic properties of lightly doped nanocrystalline $Zn_{1-x}Co_xO$. *Chemistry of Materials*. 16(7): 1168-1169.

Research papers published in Refereed/Peer Reviewed Conferences

1. **Deka, S** and P A Joy. 2008. Studies on ZnO based diluted magnetic semiconductors. In proceedings *TMS Annual Meeting 3*, March 9-13, 2008, New Orleans, USA, 373-378. Warrendale, USA: TMS.
2. **Deka, S**, A Falqui, C Sangregorio, C Giannini, R Cingolani, L Manna and P Davide Cozzoli. Synthesis structural and magnetic properties of magnetic metal/semiconductor nanocrystals heterostructures. In proceedings *EMRS, Fall Meeting*, September 15-19, 2008, Warsaw, Poland, Warsaw: EMRS.
3. **Deka, S**, S K Date and P A Joy. 2004. High magnetic aspects of nanosized NiZn ferrite powders synthesized by an auto combustion method. In proceedings *9th International Conference on Ferrites (ICF-9)*, August 23-27, 2004, San Francisco, USA, 149-154: Wiley-Blackwell.
4. **Deka, S**, S K Date and P A Joy. 2004. Synthesis and magnetic properties of polycrystalline Co-doped ZnO. In proceedings *9th International Conference on Ferrites (ICF-9)*, August 23-27, San Francisco, USA, 913-918: Wiley-Blackwell.

Other publication

Edited work

Deka, Sasanka, A Figuerola, D Dorfs and L Manna. Hybrid Nanocrystals: Synthesis, Characterization, Optical and Magnetic properties. In *Encyclopedia of Semiconductor Nanotechnology*, ed. Ahmad Umar. California: American Scientific Publishers (ASP). (Accepted for publication)

Conference Organization/ Presentations

Participation as Paper/Oral/Poster Presenter

Deka, S. 2014. Nanoporous CoO and Co₃O₄ Nanostructures and Their Charge Storage Characteristics in Supercapacitors. Paper presented at 2014 MRS Spring Meeting, April 21-25, Moscone West Convention Center, San Francisco California, USA.

Deka, S. 2014. Development, characterization and studies of metal chalcogenide ($\text{Cu}_2\text{ZnSnS}_4$) and metal oxide (Co_3O_4) nanomaterials for energy applications. Paper presented at *6th International Conference On Nano Science And Technology (ICONSAT-2014)*, March 2-5, 2014, INST, Mohali, Chandigarh.

Deka, S. 2013. Nanocrystalline CeO_2 as Heterogeneous Environmental Friendly Catalyst for the Aerobic Oxidation of Para-xylene to Terephthalic Acid in Water. Paper presented at *3rd International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2013)*, Dec 1-3, 2013, IIT-Guwahati.

Deka, S. 2012. Environment friendly hierarchical flower like pyrite FeS_2 ink for low cost photovoltaics. Paper presented at the *INDO-GERMAN Workshop on Advanced Materials for Future Energy Requirements*, November 29-30, 2012, Conference Centre, University of Delhi, Delhi.

Deka, S. 2012. Synthesis and characterization of two phases of cobalt oxide nano- and micro-particles and their applications. Paper presented at the *International Conference and Workshop On Nanostructured Ceramics and other Nanomaterials (ICWNCN) 2012*, March 13-16, 2012, Conference Centre, University of Delhi, Delhi.

Deka, S. 2011. Synthesis of Hierarchical Pyrite FeS_2 flower like particles for low cost photovoltaics. Paper presented at the *2nd Indo-Italian Workshop on Electrochemistry for Future Energy Solutions IIWEc 2011*, Nov. 30th-Dec 3rd, 2011, Department of Chemistry, University of Delhi, Delhi.

Deka, S. 2011. Multifunctional Hybrid Nanocrystals: Synthesis, Characterization and Applications. Paper presented at the *INDO-US Meeting on New Functional Materials: Synthesis, Properties and Methods (IUSSTF)*, June 2-7, 2011, Hotel Manu Allaya, Manali, Himachal Pradesh.

Deka, S. 2011. Multifunctional Hybrid Nanocrystals: Synthesis, Characterization and Applications. Paper presented at the *National Seminar on Recent Advances on Synthesis and Catalysis 2011 (RASC-11)*, February 10-12, 2011, Dibrugarh University, Dibrugarh, India

Deka, S. 2010. Synthesis of cuboctahedron shaped Cu_{2-x}Se nanocrystals and transforming them to Cadmium Chalcogenide multipods via quantitative cation exchange reaction. Paper presented at the *International Interdisciplinary Science Conference-2010*, December 2-4, 2010, Jamia Millia Islamia, New Delhi, India

Deka, S. 2008. Synthesis, structural and magnetic properties of magnetic metal/semiconductor nanocrystals heterostructures. Paper presented at the *E-MRS 2008 Fall Meeting*, September 15-19, 2008, Warsaw, Poland.

Deka, S. 2008. CdSe/CdS/ZnS core-shell-shell nanorods with high quantum efficiency. Paper presented at the *2nd International Conference on Advanced Nanomaterials (ANM 2008)* June 22-25, 2008, Aveiro, Portugal.

Deka, S. 2008. Bifunctional magnetic metal/ semiconductor nanocrystal heterostructures. Paper presented at the NANAX3, May 21-23, 2008, Lecce, Italy.

Deka, S. 2005. Studies on ZnO based diluted magnetic semiconductor. In proceedings *Royal Society of Chemistry*, RSC-2005, NCL, Pune.

Deka, S. 2005. Synthesis of nanocrystalline NiZn ferrite with high room temperature magnetization. In proceedings *Materials Research Society of India*, February 9-12, 2005, NCL, Pune.

Deka, S. 2005. Ferromagnetic and optical properties of nanocrystalline $Zn_{1-x}Co_xO$. In proceedings *Raman Memorial Conference*, February 25-26, 2005, Dept. of Physics, Pune University, Pune.

Deka, S. 2005. Studies on the origin of ferromagnetism in Co and Ni doped polycrystalline ZnO. In proceedings *National Symposium and Conference on Solid State Chemistry and Allied Areas*, December 1-3, 2005, ISCAS-2005, Goa University, Goa.

Deka, S. 2004. Nanosized NiZn ferrite: Synthesis and Magnetism. In proceedings *National Symposium on Current Trends in Chemical Research*, January 28-29, 2005, Dept. of Chemistry, Gauhati University.

Deka, S. 2004. Ferromagnetism in polycrystalline Co-doped ZnO. In proceedings *Materials for Future*, March 22-23, 2004, MRC, Indian Institute of Science, Bangalore.

Deka, S. 2003. Nanocrystalline Zinc ferrite with high magnetization at room temperature". In proceedings *MEEMA*, Powder Metallurgy Association of India & Materials Society of India, Pune.

Conference Organization:

Convener: Organized "Recent Trends in Nanoscience and Nanotechnology" during 15-16th Oct 2012 in the Seminar Hall of the Department of Chemistry, Delhi University

Organizing committee member: *International Conference and Workshop On Nanostructured Ceramics and other Nanomaterials (ICWNCN) 2012*, March 13-16, 2012, Conference Centre, University of Delhi, Delhi.

Organizing committee member: *2nd Indo-Italian Workshop on Electrochemistry for Future Energy Solutions IIWEc 2011*, Nov. 30th-Dec 3rd, 2011, Department of Chemistry, University of Delhi, Delhi.

Research Projects (Major Grants/Research Collaboration)

Name of Project: Synthesis, characterization and advanced multifunctional applications of novel chalcogenide semiconductor nanocrystals.

Period: 2014-2017, No. 01(2773)/14/EMR-II

Funding Agency: CSIR, New Delhi

Grant: 13,92,000

Name of Project: DST- DAAD project based personnel exchange programme

Period: 2015 - 2017, Funding Agency: DST-India and DAAD-Germany.

Grant No. INT/FRG/DAAD/P-242/2014, Rs. 5,24,000

Name of Project: Synthesis, characterization and evaluation of anticancer activity of novel bioessential transition metal complexes having tumor targeting and antitumor active ligands

Period: 2014-2017

Funding Agency: DBT (Twinning Programme), New Delhi

Grant: 1.2 crore (collaboration with Handique Girl's college & Gauhati University, Guwahati)

Name of Project: Synthesis, characterization, porous assembly and application of novel metal-metal oxide hybrid nanocrystals

Period: 2011-2014

Funding Agency: SERB-DST, new Delhi

Grant: Rs. 46.60 lakh

Name of Project: Studies on the optical and magnetic properties of semiconductor-magnetic oxide hybrid nanocrystals

Period: 2011-2014

Funding Agency: BRNS, DAE, BARC-Mumbai

Grant: Rs. 16.30 lakh

Name of Project: DU scheme to strengthen R & D Doctoral Research Programme

Period: 2010 - 2011; 2011 - 2012; 2012 – 2013; 2013 – 2014 (Every year)

Funding Agency: DU, **Grant:** Rs. 10 lakhs

Period: 28 July, 2010 - December, 2010

Funding Agency: DST/Purse Grant (from DU)

Grant: Rs. 3.8 lakhs

Name of Project: 11 Misc.-Grants and Contributions (13) Upgradation of teaching facilities for all the Departments.

Period: 23.7.2010 - 31.3.2010

Funding Agency: DU, **Grant:** Rs. 4.00 lakhs

Awards and Distinctions

DAE-BRNS Young Scientist Award-2011 by Department of Atomic Energy, Board of Research in Nuclear Sciences, Govt. of INDIA.

Invited speaker as 'Young Scientist' in 'National Seminar on Recent advances in synthesis and catalysis' (RASC-11) during 10-12th Feb 2011, Dibrugarh University, Dibrugarh, Assam.

TMS Foundation SHRI RAM ARORA AWARD, The Minerals, Metals & Materials Society (TMS), Warrendale, PA 15086-7514, USA, 2008.

Award of Junior/Senior Research Fellowship (**JRF/SRF-NET**) by UGC-CSIR, Govt. of India, New Delhi, 2002-2004-2007.

Best Poster Award, National Science day poster presentation, NCL Research Foundation, National Chemical Laboratory, Pune, India, 2006.

Award of **National Level merit Scholarship** by AICTE, Govt. of India, 1993-1995.

Association With Professional Bodies

Reviewing

Reviewer of ACS, RSC, Elsevier, etc. journals.

Memberships

Life member: Materials Research Society of India (MRSI). LMB2254

Member, American Chemical Society (annual).

Life Member: Electron Microscope Society of India. LM 893

Other Activities

Invited talk/Resource person:

Plenary Talk "Multifunctional Inorganic Nanocrystals: Synthesis, characterization and applications"
Seminar on nanochemistry, Sam Higginbottom Institute of Agriculture, technology and sciences, Allahabad, UP. 11-12 Nov, 2014.

Invited talk "Synthesis, characterization and applications of multifunctional inorganic nanoparticles"
NanoSci-2014, IASST, Guwahati, Assam. 20-21 December 2014.

Nanomaterials as Highly Active Catalyst for Multiple Significant Reactions, 25th June, 2014 Italian Institute of Technology (IIT), via Morego 30, Genoa, Italy.

1st International Conference on Emerging Trends of Nanotechnology in Drug Discovery, 26-27 May 2014, Sri Venkateswara College, University of Delhi and Department of Biochemistry, University of Delhi South Campus.

Resource person: Nanomaterials by solution based chemical synthesis procedures, 20th May 2014, Refresher course in Basic Sciences (Interdisciplinary), UGC-Academic Staff College, Jamia Millia Islamia, New Delhi.

Science Academies Lecture-Workshop Nanotechnology and its application, 18-20 January 2013 in MMME college, Gorakhpur, U.P. Organized by NASI Allahabad, INSA Delhi, IAS Bangalore

Indo-German workshop on "New Perspectives for Nano-carriers in Biomedical Applications" 14th January 2013, Department of Chemistry, University of Delhi.

Invited expert talk: Vigyan Prasar EduSAT network, DST, Govt. of India on "Nano Technology an

Introduction” on 24th January 2013 during 10.30 AM to 1.00 PM at C-24 Qutub Institutional Area New Delhi-110016, for the students of class XI and XII.

Career and Higher Education, 4th June 2012, Seminar: Career Prospect in Higher Education, Career guidance cell, Pub-Kamrup College, Baihata Chariali, Kamrup, Assam.

NanoScience and its applications in Biotechnology, 5th May 2012, Refresher course in Basic Sciences (Interdisciplinary), UGC-Academic Staff College, Jamia Millia Islamia, New Delhi.

Nanoscience and Nanotoxicology, 22nd February 2012, Solid State Physics Laboratory (SSPL)-DRDO, Delhi.

NanoScience and its applications in Biotechnology, 16th June & 19th June 2011, Refresher course in Basic Sciences (Interdisciplinary), UGC-Academic Staff College, Jamia Millia Islamia, New Delhi.

NanoScience: Big Word of small Things, 10th September 2010, Department of Chemistry, University of Delhi, Delhi.

Nanochemistry: Basic Understanding and Applications, 28th June 2010, B. Borooh College, Guwahati