




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. Office: #203, 2 nd floor, Old USIC building, DU. Lab: #302, #401, Old USIC building, DU.				
Phone No	Office	27666646				
	Mobile	9899841051				
Email		ssdeka@gmail.com , sdeka@chemistry.du.ac.in , http://people.du.ac.in/~sdeka/ (click here)				
Web-Page						
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.	
Career Profile						
<p>1st June, 2014 – till date: Assistant Professor (grade II), Department of Chemistry, University of Delhi, Delhi-110007.</p> <p>1st June, 2010 – 31st May, 2014: Assistant Professor (grade I), Department of Chemistry, University of Delhi, Delhi-110007.</p> <p>Adjunct Faculty (2017): Department of Chemistry, Islamic University of Science & Technology (IUST), Pulwama, Awantipora, Jammu and Kashmir, PIN-192122.</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; Deputy- Superintendent of Examination-Chemistry, Time table fixation Committee; Member Seminar Committee Chemistry; Member departmental/USIC instrument committee; Convener of NSNT conference; Organizing committee member; Deputy convener centralized evaluation centre. Departmental Nodal officer for North-East Students. Convener Inorganic section. Member of UGC-SAP II for department. Member of departmental anti ragging, North-East student grievance committee.</p>						

Areas of Interest / Specialization
Nanochemistry; Inorganic chemistry; Novel nanomaterials for energy research & applications; Nanomaterials for catalysis; Multifunctional materials; Hybrid nanocrystals, Supercapacitors.
Subjects Taught
<p><u>M.Tech. (Nanoscience and Nanotechnology)</u></p> <p>NSNT-103: Photochemistry, Surface phenomena and catalysis, Phase transformation NSNT-204: Synthesis and Characterization of Nano Materials, Physical methods, Chemical methods. NSNT-301: Material Science NSNT-402: Properties of Nanomaterials NSNT-205: Chemistry Practical</p> <p><u>M. Sc. Final (Theory Course A, paper 301)</u></p> <p>Inorganic Reaction Mechanisms; Molecular rearrangement processes</p> <p><u>M. Sc. Final (Practical course)</u></p> <p>Instrumental techniques in Inorganic chemistry</p> <p><u>M. Sc. Previous:</u> Inorganic chemistry paper 201 course B: Chemistry of 'd' & 'f' block elements</p> <p><u>M. Sc. Previous:</u> Practical: Inorganic chemistry</p> <p><u>Ph.D. Course work (Unit 23):</u> Inorganic reaction mechanisms</p> <p><u>Ph.D. Course work:</u> Nanochemistry</p>
Research Guidance
<p>Ph.D. degree awarded: 04</p> <p>Ph.D. thesis submitted: 00</p> <p>Supervision of Doctoral Thesis, under progress: 04</p> <p>Postdoctoral researcher/Research associate: 01</p> <p>Supervision of M.Tech/M.Sc. dissertation (5/6 months): 18</p>
Publications Profile
<p>Patent</p> <ol style="list-style-type: none"> 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. Krahn, R. Cingolani. <p>Books/Monographs (Authored)</p> <ol style="list-style-type: none"> 1. Krahn, 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. B. Antil, L. Kumar, K.P. Reddy, C.S. Gopinath, **Sasanka Deka**, "Direct thermal polymerization approach to N-rich holey carbon nitride nanosheets and their promising photocatalytic H₂ evolution and charge storage activities" *ACS Sustainable Chem. Eng.* 2019, 7, 9428-9438.
2. M. Chauhan, K. Soni, E. K. Karthik, K. P. Reddy, C. S. Gopinath, **Sasanka Deka** 'A Promising Visible-Light Driven Hydrogen Production from Water on Highly Efficient CuCo₂S₄ Nanosheets Photocatalyst' *J. Mater. Chem. A*, 2019, 7, 6985-6994.
3. P. Kush, **Sasanka Deka**, 'Multifunctional Copper-Based Quaternary Chalcogenide Semiconductors Toward State-of-the-Art Energy Applications' *ChemNanoMat*, 2019, 5, 373-402.
4. L. Kumar, H. Chauhan, N. Yadav, N. Yadav, S.A. Hashmi, **Sasanka Deka** 'Faster ion switching NiCo₂O₄ nanoparticle electrode based supercapacitor device with high performances and long cycling stability" *ACS Applied Energy Materials* 2018, 1 (12), p 6999–7006
5. M. Kumar, H. Chauhan, B. Satpati, **Sasanka Deka** "Yolk Type Asymmetric Ag–Cu₂O Hybrid Nanoparticles on Graphene Substrate as Efficient Electrode Material for Hybrid Supercapacitors" *Zeitschrift für Physikalische Chemie*, 2018, 233 (1), 85-104.
6. S. Das, P. Mondal, S. Ghosh, B. Satpati, **Sasanka Deka**, S. M. Islam, T. Bala, "A facile synthesis strategy to couple porous nanocubes of CeO₂ with Ag nanoparticles: an excellent catalyst with enhanced reactivity for the 'click reaction' and carboxylation of terminal alkynes" *New J. Chem.* 2018, 42, p 7314-7325
7. B. Deka, A. Bhattacharyya, S. Mukherjee, T. Sarkar, K. Soni, S. Banerjee, K. K. Saikia, **Sasanka Deka**, A. Hussain. "Ferrocene conjugated copper (II) complexes of terpyridine and traditional Chinese medicine (TCM) anticancer ligands showing selective toxicity towards cancer cells" *Applied Organometallic Chemistry* 2018, 32, e4287.
8. S. Das, G. Bhattacharjee, B. Satpati, M. Kumar, **Sasanka Deka**, M. K. Ghosal, C. S. Gopinath, T. Bala "Deposition of Au nanoparticles inside porous CeO₂ nanocubes using Langmuir–Blodgett technique" *New Journal of Chemistry*. 2018, 42: 1379-1386.
9. M. Chauhan, K. P. Reddy, C. S. Gopinath, **Sasanka Deka** "Copper Cobalt Sulphide Nanosheets Realizing Promising Electrocatalytic Oxygen Evolution Reaction" *ACS Catalysis*. 2017, 7: 5871-5878. (Most read paper within the journal in 12 months)
10. H. Chauhan, M.K. Singh, P. Kumar, S. A. Hashmi, **Sasanka Deka** "Development of SnS₂/RGO nanosheets composite for cost-effective aqueous hybrid supercapacitors" *Nanotechnology*, 2017, 28: 025401.
11. T. Das, H. Chauhan, **Sasanka Deka**, S. Chaudhary, R. Boruah, B. K. Saikia "Promising carbon nanosheet-based supercapacitor electrode materials from low-grade coals" *Microporous and Mesoporous Materials*, 2017, 253: 80-90.
12. B. Deka, T. Sarkar, S. Banerjee, A. Kumar, S. Mukherjee, **Sasanka Deka**, K. K. Saikia, A. Hussain "Novel mitochondria targeted copper(II) complexes of ferrocenyl terpyridine and anticancer active 8-hydroxyquinolines showing remarkable Q1 cytotoxicity, DNA and protein binding affinity" *Dalton Transactions*. 2017, 46: 396.
13. H. Chauhan, Y. Kumar, J. Dana, B. Satpati, H. N. Ghosh, **Sasanka Deka** "Photoinduced ultrafast charge separation in colloidal 2-dimensional CdSe/CdS-Au hybrid nanoplatelets and corresponding

- application in photocatalysis" *Nanoscale*, 2016, 8: 15802–15812.
14. M. Kumar, K. Soni, B. Satpati, G. S Chinnakonda, **Sasanka Deka** "Exploration of magnetically separable Ag@AgxNiy core/graded-alloy-shell nanostructures" *Chem. Commun.*, 2016, 52: 8737-8740.
 15. M. Kumar, K. Soni, G. D. Yadav, S. Singh, **Sasanka Deka**, "Surfactant directed Ag_{1-x}Ni_x alloy nanoparticle catalysed synthesis of aromatic azo derivatives from aromatic amines" *Applied Catalysis A: General*, 2016, 525: 50–58.
 16. M. Kumar, K. Soni, B. Satpati, C.S. Gopinath, **Sasanka Deka**, "Synthesis of 3-(Aminoalkyl) indoles on Silver/Silver–Nickel Alloy Nanoparticles" *Synfacts*, 2016, 12, 1103-1103
 17. H. Chauhan, K. Soni, M. Kumar, **Sasanka Deka**, "Tandem Photocatalysis of Graphene-Stacked SnS₂ Nanodiscs and Nanosheets with Efficient Carrier Separation" *ACS Omega*, 2016, 1: 127–137.
 18. S. Das, B. Satpati, H. Chauhan, **Sasanka Deka**, M.K. Ghosalya, C.S. Gopinath, T. Bala, "Seeding of Au on CdSe/CdS nanoplates using Langmuir–Blodgett technique" *RSC Advances*, 2016, 6 (18): 14658-14665
 19. P. Kush, K. Deori, A. Kumar, **Sasanka Deka**, "Efficient Hydrogen/Oxygen Evolution and Photocatalytic Dye Degradation and Reduction of Aqueous Cr(VI) by Surfactant Free Hydrophilic Cu₂ZnSnS₄ Nanoparticles", *Journal of Materials Chemistry A*, 2015, 3: 8098-8106.
 20. K. Deori, C. Kalita, **Sasanka Deka**, "(100) surface exposed CeO₂ Nanocube as Efficient Heterogeneous Catalyst in Tandem Oxidation of Benzyl Alcohol, para-Chlorobenzyl Alcohol and Toluene to Corresponding Aldehydes Selectively", *Journal of Materials Chemistry A*, 2015, 3: 6909-6920.
 21. P. Kush, **Sasanka Deka**, "Anisotropic kesterite Cu₂ZnSnSe₄ colloidal nanoparticles: Photoelectrical and photocatalytic properties" *Materials Chemistry and Physics*, 2015, 162: 608-616.
 22. H. Chauhan, M. K. Singh, S.A. Hashmi, **Sasanka Deka** "Synthesis of surfactant free SnS nanorods by solvothermal route with better electrochemical properties towards supercapacitor application", *RSC Advances*, 2015, 5: 17228-17235.
 23. M. Kumar, **Sasanka Deka** "Multiply twinned AgNi alloy nanoparticles as highly active catalyst for multiple reduction and degradation reactions" *ACS Appl. Mater. Interfaces*, 2014, 6: 16071–16081.
 24. S. Das, B. Satpati, H. Chauhan, **Sasanka Deka**, C. S. Gopinath, T. Bala, "Preferential growth of Au on CdSe quantum dots using Langmuir–Blodgett technique" *RSC Advances*, 2014, 4: 64535-64541.
 25. K. Deori, D. Gupta, B. Saha, **Sasanka Deka** "Design of 3-Dimensionally Self-Assembled CeO₂ Nanocube as a Breakthrough Catalyst for Efficient Alkylarene Oxidation in Water" *ACS Catalysis*, 2014, 4: 3169-3179.
 26. H. Chauhan, Y. Kumar, **Sasanka Deka** "New synthesis of two-dimensional CdSe/CdS core@shell dot-in-hexagonal platelet nanoheterostructures with interesting optical properties" *Nanoscale*, 2014, 6: 10347-10354.
 27. P. Kush, **Sasanka Deka** "Photoelectrical properties of surfactant free kesterite Cu₂ZnSnSe₄ hydrophilic nanocrystal ink and the stability in polar solvents" *Journal of Nanoparticle Research*. 2014, 16:2600.
 28. K. Deori, S.K. Ujjain, R.K. Sharma, **Sasanka Deka** "Morphology Controlled Synthesis of Nanoporous Co₃O₄ Nanostructures and Their Charge Storage Characteristics in Supercapacitors" *ACS Appl. Mater. Interfaces*, 2013, 5 (21), 10665–10672.
 29. K. Deori, **Sasanka Deka** "Morphology oriented surfactant dependent CoO and reaction time

- dependent Co_3O_4 nanocrystals from single synthesis method and their optical and magnetic properties" *CrysEngComm*, 2013, 15: 8465-8474.
30. P. Kush, S.K. Ujjain, N.C. Mehra, P. Jha, R.K. Sharma, **Sasanka Deka** "Development and Properties of Surfactant-Free Water-Dispersible $\text{Cu}_2\text{ZnSnS}_4$ Nanocrystals: A Material for Low-Cost Photovoltaics" *ChemPhysChem*, 2013, 14: 2793 – 2799.
 31. K. Deori, D. Gupta, B. Saha, S.K. Awasthi, **Sasanka Deka** "Introducing Nanocrystalline CeO_2 as Heterogeneous Environmental Friendly Catalyst for the Aerobic Oxidation of Para-xylene to Terephthalic Acid in Water" *Journal of Materials Chemistry A*, 2013, 1: 7091-7099.
 32. P. Kush, N.C. Mehra, **Sasanka Deka** "Synthesis, characterization and optical properties of novel hierarchical flower like pyrite FeS_2 particles for low cost photovoltaics" *Sci. Adv. Mater.* 2013, 5(7): 588-595.
 33. N. Vilvamani, **Sasanka Deka**, T. Gupta, "Transition metal ion-induced anisotropic architectures using 4,4'-dicarboxy-2,2'-bipyridyl-silver nanopetals" *Adv. Mater. Lett.*, 2013, 4(4): 252-260.
 34. S.S. Shankar, **Sasanka Deka** "Metal nanocrystals and their applications in biomedical systems" *Sci. Adv. Mater.* 2011, 3(2): 169-195.
 35. R. Krahné, G. Morello, A. Figuerola, C., George, **Sasanka Deka**, Manna, L., "Physical properties of elongated inorganic nanoparticles" *Physics Reports* 2011, 501(3-5): 75-221.
 36. **Sasanka Deka**, K. Miszta, D. Dorfs, A. Genovese, G. Bertoni, L. Manna. "Octapod-shaped colloidal nanocrystals of cadmium chalcogenides via "one-pot" cation exchange and seeded growth" *Nano Letters*. 2010, 10 (9): 3770–3776.
 37. **Sasanka Deka**, A. Genovese, Y. Zhang, K. Miszta, G. Bertoni, R. Krahné, C. Giannini and L. Manna. "Phosphine-Free Synthesis of p-Type Copper(I) Selenide Nanocrystals in Hot Coordinating Solvents" *Journal of the American Chemical Society*. 2010, 132(26): 8912-8914.
 38. **Sasanka Deka**, A. Falqui, G. Bertoni, C. Sangregorio, G. Morello, M. De Giorgi, C. Giannini, R. Cingolani, L. Manna and P. D. Cozzoli. "Fluorescent Asymmetrically Cobalt-Tipped CdSe@CdS Core@Shell Nanorod Heterostructures Exhibiting Room-Temperature Ferromagnetic Behavior" *Journal of the American Chemical Society*. 2009, 131(35): 12817-12828.
 39. A. Quarta, A. Ragusa, **Sasanka Deka**, C. Tortiglione, A. Tino, R. Cingolani and T. Pellegrino. "Bio-conjugation of rod-shaped fluorescent nanocrystals for efficient targeted cell labeling" *Langmuir*. 2009, 25(21): 12614-12622.
 40. **Sasanka Deka**, 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. "CdSe/CdS/ZnS Double Shell Nanorods with High Photoluminescence Efficiency and Their Exploitation As Biolabeling Probes" *Journal of the American Chemical Society*. 2009, 131(8): 2948-2958.
 41. **Sasanka Deka** and P. A. Joy. "Single step synthesis and properties of M/M Fe_2O_4 and PVDF/M/M Fe_2O_4 (M = Co, Ni) magnetic nanocomposites" *Sci. Adv. Mater.* 2009, 1 (3): 262-268.
 42. **Sasanka Deka** and P. A. Joy. "Superparamagnetic Nanocrystalline ZnFe_2O_4 with a Very High Curie Temperature" *Journal of Nanoscience and Nanotechnology*. 2008, 8 (8): 3955-3958.
 43. V. Sreeja, S. Vijayanand, **Sasanka Deka** and P A Joy. "Magnetic and Mössbauer spectroscopic studies of NiZn ferrite nanoparticles synthesized by a combustion method" *Hyperfine Interact.* 2008, 189 (1-3): 99-107.

44. **Sasanka Deka** and P A Joy. "Enhancement of the phase transformation temperature of γ -Fe₂O₃ by Zn²⁺ doping" *Journal of Materials Chemistry*. 2007, 17(5): 453-456.
45. **Sasanka Deka** and P A Joy. "Enhanced permeability and dielectric constant of NiZn ferrite synthesized in nanocrystalline form by a combustion method" *Journal of the American Ceramic Society*. 2007, 90 (5): 1494-1499.
46. **Sasanka Deka** and P A Joy. "Synthesis and magnetic properties of Mn doped ZnO nanowires" *Solid State Communications*. 2007, 142 (4): 190-194.
47. **Sasanka Deka** and P A Joy. "Ferromagnetism induced by hydrogen in polycrystalline nonmagnetic Zn_{0.95}Co_{0.05}O" *Applied Physics Letter*. 2006, 89(3): 032508.
48. **Sasanka Deka**, R. Pasricha and P. A. Joy. "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*. 2006, 74(3): 033201.
49. **Sasanka Deka** and P. A. Joy. "Characterization of nanosized NiZn ferrite synthesized by an auto-combustion method" *Materials Chemistry & Physics*. 2006, 100 (1): 98-101.
50. M. Rajendran, **Sasanka Deka**, P. A. Joy and A. K. Bhattacharya. "Size-dependent magnetic properties of nanocrystalline yttrium iron garnet powders". *Journal of Magnetism & Magnetic Materials*. 2006, 301(1): 212-219.
51. **Sasanka Deka** and P. A. Joy. "Electronic structure and ferromagnetism of polycrystalline Zn_{1-x}Co_xO (0 < x < 0.15)" *Solid State Communications*. 2006, 134 (10): 665-669. (TOP 25 Hottest and most downloaded article within the journal).
52. **Sasanka Deka** and P. A. Joy. "Direct observation of Ni metal impurities in lightly doped ferromagnetic polycrystalline (ZnNi)O" *Chemistry of Materials*. 2005, 17(26): 6507-6510.
53. **Sasanka Deka** and P. A. Joy. "Nanocrystalline Zinc ferrite with high magnetization at room temperature" *MSI Bulletin*. 2004, 27: 23-25.
54. **Sasanka Deka**, R. Pasricha and P. A. Joy. "Synthesis and ferromagnetic properties of lightly doped nanocrystalline Zn_{1-x}Co_xO" *Chemistry of Materials*. 2004, 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.

Invited talk/Resource person

1. Invited talk: “Development of 2D nanostructured materials for catalysis and energy storage applications” at Frontiers in 2D materials from Basic Science to Real time Applications, 13th - 16th March 2019, **Jain University, Bengaluru**.
2. Invited talk: “Development of nanostructured metal chalcogenide and oxide particles for catalysis and energy storage applications” in Half-a-day meeting/symposium at the Department of Chemistry, **BITS Pilani, Pilani Campus**, Rajasthan, on 9th March, 2019.
3. Invited talk: “Development of nanostructured metal chalcogenide particles for electrochemical energy conversion and metal oxide particles for electrochemical energy storage applications” at Indo-UK Newton-Bhabha Workshop on Electrochemical Routes to Energy Storage, Energy Conversion and Fuel Production" December 10-13th, 2018 at **JNCASR**, Bangalore, India.
4. Invited talk: “Inorganic Nanomaterials for Catalysis, Energy Conversion and Storage: A Brief selected overview from the PI’s Lab” Leibniz University Hannover (LUH), Germany-India workshop on strategic partnership, 3rd–6th December 2018 at **Leibniz University Hannover**, Hanover, Germany.
5. Invited talk: “Introduction to Nanoscience” at **Miranda House college**, University of Delhi, November 6, 2017.
6. Invited talk: “Copper Cobalt Sulphide Nanosheets Realizing Promising Electrocatalytic Oxygen Evolution Reaction” at One-day discussion meeting on Chemistry of Nanomaterials, Jawaharlal Nehru Centre for Advanced Scientific Research (**JNCASR**), Bangalore, on 17th July, 2018.
7. Invited talk: “Development of transition metal based alloy and chalcogenide nanoparticles and their emerging applications” at March Meeting, 16-17 March, 2018. School of Physical Sciences, **Jawaharlal Nehru University**, New Delhi-110067, India.
8. Invited talk: “Ag_{1-x}Ni_x alloy nanoparticles and CuCo₂S₄ nanosheets and their useful catalytic Applications” at International Conference on Nanobiotechnology, February 5-6, 2018, Centre for Interdisciplinary Research in Basic Sciences, **Jamia Millia Islamia**, Jamia Nagar, New Delhi 110025.
9. Plenary talk: “Metal alloy and chalcogenide nanoparticles for few useful catalytic applications”, at International Conference on Nano- and Functional Materials: Interface between Science and Engineering (NFM-2017), 16-18 November 2017, **BITS-Pilani**, Pilani Campus, Rajasthan.
10. Invited talk: “Nanoscience and Nanotechnology” Department of Chemistry, **Miranda House**, DU, November 6, 2018.
11. Memorial lecture: Dr. C.K. Khurana Memorial lecture for Rasgandhayan, **Gargi College**, DU, September 6 2017.
12. Invited talk: “Exploration of multiply twinned AgNi alloy nanoparticles as highly active catalyst for multiple transformation reactions” at International Conference on Catalysis and Chemical Engineering" (CCE-2017), February 22-24, 2017 **Baltimore, USA**. Organized by the: United Scientific Group, 2088 B2 Walsh Avenue Santa Clara, CA 95050, USA.

13. Invited talk: “Exploration of unique two dimensional CdSe/CdS core@shell hexagonal nanoheteroplateles and CdSe/CdS-Au hybrid nanocrystals” at The International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM 2016) 11-15, December 2016, **IISc-Bangalore, INDIA.** (14-12-2016).
14. Invited talk: “Exploration of Ag_xNi_y alloy and $Ag@Ag_xNi_y$ core/graded-alloy-shell nanostructures in catalytic applications” at International Conference on Technologically Advanced Materials and Asian Meeting on Ferroelectricity, ICTAM-AMF10, November 7-11, 2016. **University of Delhi.** (9-11-2016)
15. Invited talk: “Inorganic Nanoparticles: Synthesis, Characterization and Multifunctional applications” at the FUB-DU Joint Research Workshop on Supramolecular Chemistry and Nanoscale Systems, **Freie Universität Berlin, Berlin, Germany.** June 8-10, 2016
16. Invited talk: :(emphasis on academics and research for undergraduate students) “NanoScience: Big Word of small Things” **Kirori Mal College (KMC), University of Delhi,** January 23, 2016.
17. Invited talk: “Multifunctional applications of few nanostructured inorganic materials” International Conference on Advanced materials-- Energy, Environment and Health (ICAM- 2016) March 04-07, 2016, Department of Chemistry, **Indian Institute of Technology-Roorkee (IIT-Roorkee).**
18. Invited talk: “Development of CeO_2 nanocube and Cu_2ZnSnS_4 nanoparticles for multifunctional applications” International Conference on Materials Science & Technology (ICMTECH)-2016, Conference Centre, **University of Delhi, India,** 01st - 04th March, 2016 (by IAAM, VBRI press and DU)
19. Invited talk: “Synthesis, characterization of multifunctional applications of inorganic nanomaterials” **Leibniz Universität Hannover, Hannover, Germany.** December 10, 2015.
20. Resource person: “Application of Nanotechnology in Environmental Remediation”, 18th June 2015, Refresher course in Disaster Management & Environmental Studies ID (I), UGC-Human Resource Development Centre, **Gauhati University, Guwahati-14.**
21. Invited talk: “Morphology oriented nanocrystals for catalytic and energy applications” at 2nd Indo-German Workshop on Supramolecular Chemistry, March 30th, 2015, **University of Delhi.**
22. 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.
23. Invited talk: “Synthesis, characterization and applications of multifunctional inorganic nanoparticles” NanoSci-2014, **DST- Institute of Advanced Study in Science and Technology (IASST), Guwahati, Assam.** 20-21 December 2014.
24. Invited talk “Nanomaterials as highly active catalyst for multiple significant reactions” at **Italian Institute of Technology, Genova, Italy** on 21-29 June, 2014.
25. Invited talk: 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.**

26. 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.
27. Invited talk: 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**.
28. Invited talk: Indo-German workshop on "New Perspectives for Nano-carriers in Biomedical Applications" 14th January 2013, Department of Chemistry, **University of Delhi**.
29. 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.
30. Invited talk: Career and Higher Education, 4th June 2012, Seminar: Career Prospect in Higher Education, Career guidance cell, **Pub-Kamrup College**, Baihata Chariali, Kamrup, Assam.
31. Resource person: NanoScience and its applications in Biotechnology, 5th May 2012, Refresher course in Basic Sciences (Interdisciplinary), UGC-Academic Staff College, **Jamia Millia Islamia**, New Delhi.
32. Invited talk: Nanoscience and Nanotoxicology, 22nd February 2012, **Solid State Physics Laboratory (SSPL)-DRDO, Delhi**.
33. Resource person: 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.
34. Invited talk: "Multifunctional Hybrid Nanocrystals: Synthesis, Characterization and Applications" at National Seminar on Recent advances in synthesis and catalysis (RASC-11) during 10-12th Feb 2011, **Dibrugarh University, Dibrugarh**, Assam. (10th Feb)
35. Special talk: NanoScience: Big Word of small Things, 10th September 2010, Department of Chemistry, **University of Delhi**, Delhi.
36. Invited talk: Nanochemistry: Basic Understanding and Applications, 28th June 2010, **B. Borooh College**, Guwahati

Conference Organization/ Presentations

Participation as Paper/Oral/Poster Presenter

Deka, S, 2015. Synthesis, characterization and applications of CeO₂ nanocube and Cu₂ZnSnS₄ nanoparticles in green chemistry, *RSC workshop on Chemistry for tomorrow's world*, December 2-3, 2015 at New Delhi by Royal Society of Chemistry, London.

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.

Awards and Distinctions
<p>a) Best speaker (oral) in RSC workshop on Chemistry for tomorrow's world, December 2-3, 2015 at New Delhi by Royal Society of Chemistry, London.</p> <p>b) Honorary Member, American Chemical Society (2015-2018).</p> <p>c) DAE-BRNS Young Scientist Award-2011 by Department of Atomic Energy, Board of Research in Nuclear Sciences, Govt. of INDIA.</p> <p>d) Invited as 'Young Scientist' in 'National Seminar on Recent advances in synthesis and catalysis' (RASC-11) during 10-12th Feb 2011, Dibrugarh University, Dibrugarh, Assam.</p> <p>e) TMS Foundation SHRI RAM ARORA AWARD, The Minerals, Metals & Materials Society (TMS), Warrendale, PA 15086-7514, USA, 2008.</p> <p>f) Award of Junior/Senior Research Fellowship (JRF/SRF-NET) by UGC-CSIR, Govt. of India, New Delhi, 2002-2004-2007.</p> <p>g) Best Poster Award, National Science day poster presentation, NCL Research Foundation, National Chemical Laboratory, Pune, India, 2006.</p> <p>h) Award of National Level merit Scholarship by AICTE, Govt. of India, 1993-1995.</p>
Extramural research projects undertaken
<ol style="list-style-type: none"> 1. "Development of advanced nanomaterials for benchmark electrocatalytic hydrogen and oxygen evolution from water" <i>funded by SERB-DST, 2017-2020.</i> 2. "Synthesis, characterization and advanced multifunctional applications of novel chalcogenide semiconductor nanocrystals" <i>funded by CSIR, New Delhi, 2014-2018.</i> 3. "Synthesis, characterization and evaluation of anticancer activity of novel bioessential transition metal complexes having tumor targeting and antitumor active ligands" <i>funded by DBT, 2014-2018.</i> 4. Synthesis, characterization, porous assembly and application of novel metal-metal oxide hybrid nanocrystals" <i>funded by SERB-DST, 2012-2015.</i> 5. Studies on the optical and magnetic properties of semiconductor-magnetic oxide hybrid nanocrystals" <i>funded by BRNS-BARC-DAE, 2012-2015.</i> 6. Synthesis and studies of the optical, plasmonic and magnetic behavior of Ni/Ag-semiconductor hybrid nanostructures" <i>funded by DST-DAAD (Indo German), 2014-2016.</i> 7. Complex nanostructures and their applications in optics, photonics and electronics" <i>funded by DST Purse grant, 2011, 2015, 2016.</i>
Association With Professional Bodies
<p>Reviewing</p> <p>Reviewer of ACS, RSC, Elsevier, Wiley, etc. journals.</p> <p>Memberships</p> <p>Life member: Chemical Research Society of India (CRSI). LM 1917</p> <p>Life member: Materials Research Society of India (MRSI). LMB2254</p> <p>Honorary Member, American Chemical Society (2015-2018).</p>

Life Member: Electron Microscope Society of India. LM 893
Other Activities
1. Vice-president of Samannay , a socio-cultural organization based in Delhi.

I declare that the above particulars are correct to the best of my knowledge

Date: 22nd June, 2019

Place: Delhi

Sasanka Deka