



Dr. Shyamashis Das

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AREAS OF INTEREST/SPECIALISATION

- Energy Materials
- Semiconductor Nanocrystals
- Colloidal Self-assembly

ACADEMIC QUALIFICATIONS

- B.Sc. in Chemistry (Hons.), 2009, University of Calcutta
- M.Sc. in Chemistry, 2011, IIT Kanpur
- Ph.D. in Chemistry, 2017, Indian Institute of Science, Bengaluru
- CSIR NET in Chemical Science, 2011
- GATE in Chemistry, 2011

RESEARCH EXPERIENCE

From	To	Name and Address of Funding Agency / Organization	Position held
2011	2013	Indian Institute of Science	Junior Research Fellow
2013	2016	Indian Institute of Science	Senior Research Fellow
2017	2018	Indian Institute of Science	Research Associate
2018	2020	INRS, Varennes, QC, Canada	Postdoctoral Fellow

ACADEMIC EXPERIENCE

- Teaching assistant of BS (undergraduate course) at Indian Institute of Science, Bengaluru from July 2014 to December 2014
- Reviewer of the Journal of Material Chemistry C, RSC Advances, Physics Letters A, Functional Materials Letters, and Colloid and Interface Science Communications

PUBLICATIONS

List of Journals

Year 2020

- High Performance BiFeO₃ Ferroelectric Nanostructured Photocathodes; **Shyamashis Das**, Paul Fourmont, Daniele Benetti, Sylvain G. Cloutier, Riad Nechache, Zhiming M. Wang, and Federico Rosei; J. Chem. Phys. **153**, 084705 (2020).

Year 2019

- Expanding Interlayer Spacing in MoS₂ for Realizing an Advanced Supercapacitor; Debasish Sarkar, Debanjan Das, **Shyamashis Das**, Ankit Kumar, Satish Patil, Karuna Kar Nanda, D. D. Sarma, and Ashok Shukla; ACS Energy Lett. **4**, 1602-1609 (2019).
- High Remanent Polarization and Temperature Insensitive Ferroelectric Remanent Polarization in BiFeO₃-based Lead-free Perovskite; Min Zhang, Xiaoyan Zhang, **Shyamashis Das**, Zhiming M. Wang, Xiwei Qi and Qiang Du; J. Mater. Chem. C **7**, 10551-10560 (2019).
- Anisotropic Fast Electrically Switchable Emission from Composites of CsPbBr₃ Perovskite Quantum Cuboids in a Nematic Liquid Crystal; Pragnya Satapathy, Pralay K. Santra, Anamul Haque, C. V. Yelamaggad, **Shyamashis Das**, and S. Krishna Prasad; Adv. Opt. Mater. **7**, 1801408 (2019).
- Origin of Luminescence Based Detection of Metal Ions by Mn doped ZnS Quantum Dots; Trupthi Devaiah C., Bhagwati Sharma, Jayashree Nagesh, Abhishek Shibu, **Shyamashis Das**, Kommula Bramhaiah, Nasani Rajendar, Neena S. John, Pralay K. Santra; Chemistry Select **4**, 13551-13557 (2019).

Year 2018

- Designing a Lower Band Gap Bulk Ferroelectric Material with a Sizable Polarization at Room Temperature; **Shyamashis Das**, Somnath Ghara, Priya Mahadevan, A.

Sundaresan, J. Gopalakrishnan, and D. D. Sarma; ACS Energy Lett. **3**, 1176-1182 (2018).

- Synthesis and Optical Properties of Colloidal $M_3Bi_2I_9$ ($M = Cs, Rb$) Perovskite Nanocrystals; Jaya Pal, Amit Bhunia, Sudip Chakraborty, Suman Manna, **Shyamashis Das**, Anweshi Diwan, Shouvik Datta, Angshuman Nag; J. Phys. Chem. C **122**, 10643-10649 (2018).
- Post-Synthesis Doping of Mn and Yb into $CsPbX_3$ ($X = Cl, Br, I$) Perovskite Nanocrystals for Downconversion Emission; Wasim J. Mir, Yogesh Mahor, Amruta Lohar, Metikoti Jagadeeswararao, **Shyamashis Das**, Shailaja Mahamuni, and Angshuman Nag; Chem. Mater. **30**, 8170-8178 (2018).
- The origin of low bandgap and ferroelectricity of a co-doped $BaTiO_3$; D. Phuyal, S. Mukherjee, **Shyamashis Das**, S. Jana, K. O. Kvashnina, D. D. Sarma, H. Rensmo, S. M. Buortin and O. Karis; Eur. Phys. Lett. **124**, 27005 (2018).
- Direct Observation of Intermediate State(s) in the Mechanistic Investigation of Domain Specific Protein-Surfactant Interaction; Rajeev Yadav, Bhaswati Sengupta, **Shyamashis Das**, and Pratik Sen; Protein Pept. Lett. **25**, 339-349 (2018).

Year 2017

- Suppression of the Coffee-Ring Effect and Evaporation-Driven Disorder to Order Transition in Colloidal Droplets; **Shyamashis Das**, Atreya Dey, Govardhan Reddy, D. D. Sarma; J. Phys. Chem. Lett. **8**, 4704-4709 (2017), (Highlighted in Spotlights section of J. Phys. Chem. Lett., DOI: 10.1021/acs.jpcclett.7b02546).
- Colloidal Synthesis and Photophysics of $M_3Sb_2I_9$ ($M=Cs$ and Rb) Nanocrystals: Lead-Free Perovskites; Jaya Pal, Suman Manna, Anirban Mondal, **Shyamashis Das**, K. V. Adarsh, and Angshuman Nag; Angew. Chem. Int. Ed. **56**, 14187-14191 (2017).
- Colloidal Mn-Doped Cesium Lead Halide Perovskite Nanoplatelets; Wasim J. Mir, Metikoti Jagadeeswararao, **Shyamashis Das**, and Angshuman Nag; ACS Energy Lett. **2**, 537-543 (2017).
- Colloidal Thallium Halide Nanocrystals with Reasonable Luminescence, Carrier Mobility and Diffusion Length; Wasim J. Mir, Avinash Warankar, Ashutosh Acharya, **Shyamashis Das**, Pankaj Mandal, Angshuman Nag; Chem. Sci. **8**, 4602-4611 (2017).
- A Cost-Effective and High-Performance Core-Shell-Nanorod-Based $ZnO/\alpha-Fe_2O_3//ZnO/C$ Asymmetric Supercapacitor; Debasish Sarkar, **Shyamashis Das**, Sharada G, Banabir Pal, Hakan Rensmo, Ashok Shukla, and D. D. Sarma; J. Electrochem. Soc. **164**, A987-A994 (2017).

Year 2016

- High photon energy spectroscopy of NiO: Experiment and theory; S. K. Panda, Banabir Pal, Suman Mandal, Mihaela Gorgoi, **Shyamashis Das**, Indranil Sarkar, Wolfgang Drube, Weiwei Sun, I. Di Marco, Andreas Lindblad, P. Thunstrom, A. Delin, Olof Karis, Y. O. Kvashnin, M. van Schilfgaarde, O. Eriksson, and D. D. Sarma; Phys. Rev. B **93**, 235138 (2016).

Year 2012

- Static and Dynamic Aspects of Supramolecular Interactions of Coumarin 153 and Fluorescein with Bovine Serum Albumin; Rajeev Yadav, **Shyamashis Das**, and Pratik Sen; Aust. J. Chem. **65**, 1305-1313 (2012).

Patent

- Semiconductor nanocrystals with defects for high efficiency emission; **Shyamashis Das**, Biswajit Bhattacharyya, Anshu Pandey, Ranjani Viswanatha, D. D. Sarma, Indian Institute of Science, Bengaluru, Indian Patent No. 316516, Application No. 201641017315.

RESEARCH PAPER PRESENTATIONS/INVITED SPEAKER

- Poster presented on the topic ‘Structural and Magnetic Properties of Transition Metal Monoxides’ at Autumn School on Correlated Electrons: Emergent Phenomena in Correlated Matter held at Forschungszentrum Jülich, Germany during 22nd September to 28th September, 2013.
- Poster presented on the topic ‘Electronic Structure Tunability using Defects in Semiconductor Nanocrystals’ at Frontiers in Advanced Materials held at Indian Institute of Science, Bengaluru during 15th to 18th June, 2015.
- Talk delivered on the topic ‘Reduced Band gap Ferroelectric Materials for Photovoltaic Application’ at International Conference on Multiferroics held at Coorg, Karnataka, during 27th to 30th November, 2015.
- Poster presented on the topic ‘Reduced Band gap Ferroelectric Materials for Photovoltaic Application’ at Young Scientists’ Colloquium 2016 held at S. N. Bose National Center for Basic Sciences, Kolkata on 16th September, 2016.

- Talk delivered on the topic ‘Dynamical Phase Behavior and Ordering in Binary Colloidal Systems’ at Indo-US Discussion Meeting on Surfaces and Interfaces held at Saha Institute of Nuclear Physics, Kolkata during 2nd to 4th January, 2018.

PERSONAL DETAILS IN BRIEF

Date of Birth : 19/07/1989

Date of joining (Ramananda College): 18/12/2020

Marital Status : Single

Nationality : Indian

Current Designation : Assistant Professor

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