

Ms. Dimitra Das

Current Position: DST INSPIRE Junior Research Fellow
Work Address: Thin Film and Nanoscience Laboratory, Engineering Science Building, Jadavpur University, Kolkata-700032, India
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EDUCATIONAL QUALIFICATIONS:

- Currently working as a **Junior Research Fellow (DST INSPIRE)** in the School of Materials Science and Nanotechnology, Jadavpur University. (2016-present)
Guide: Prof. Somnath Mukherjee
- **Master of Technology (M.Tech.) in Nano Science and Technology** with **87.67%** marks (CGPA-**9.33**) from **Jadavpur University, 2016**. Achieved **Gold Medal** by securing the First Position in M.Tech.
M.Tech. Thesis Title: Nanostructured Graphitic Carbon Nitride: Synthesis, Properties and Applications in Photoluminescence and Photocatalysis.
Guide: Prof. Kalyan Kumar Chattopadhyay
- **Bachelor of Technology (B.Tech) in Electrical Engineering** with **8.60** DGPA from Calcutta Institute of Engineering and Management under **West Bengal University of Technology, 2014**.
B.Tech. Thesis Title: Automatic Traffic Control System Using Microcontroller 8051
- **Higher Secondary Examination** with **84.8%** marks from Carmel High School under **West Bengal Council of Higher Secondary Education, 2010**.
- **Madhyamik Examination** with **92.37%** marks from Carmel High School under **West Bengal Board of Secondary Education, 2008**.

PUBLICATIONS:

- 1. Defect induced tuning of photoluminescence property in graphitic carbon nitride nanosheets through synthesis conditions; Das, D., Banerjee D., Pahari D., Ghorai U.K., Sarkar S., Das N.S. and Chattopadhyay K.K.; Journal of Luminescence; 2017, 185, pp.155-165.**
- 2. Effect of cobalt doping into graphitic carbon nitride on photo induced removal of dye from water; Das, D., Banerjee D., Das B., Das N.S. and Chattopadhyay K.K.; Materials Research Bulletin; 2017, 89, pp.170-179.**
- 3. 1D-2D Hybrids as Efficient Optoelectronic Material: A Study on Graphitic Carbon Nitride Nanosheets Wrapped Zinc Oxide Rods; Sett A., Das D., Banerjee D., Ghorai U.K., Das N.S., Das B., and Chattopadhyay K.K.; Dalton Transactions; 2018, 47, pp. 4501-4507.**
- 4. Nickel Doped Graphitic Carbon Nitride Nanosheets and Its Application for Dye Degradation by Chemical Catalysis; Das D., Banerjee D., Mondal M., Shett A., Das B., Das N.S., Ghorai U.K. and Chattopadhyay K.K., Materials Research Bulletin; 2018, 101, pp. 291-304.**
- 5. Low Temperature Synthesis of Graphitic Carbon Nitride Nanorods for Heavy Metal Ions Sensing; Das, D., Banerjee, D., Das, N.S., Das, B., Ghorai, U.K. and Chattopadhyay, K.K., Solid State Sciences; 2018, 82, pp. 99-105.**
- 6. A morphology-tailored triazine-based crystalline organic polymer for efficient mercury sensing; Das, D., Mitra, A., Chatterjee, R., Sain, S. and Chattopadhyay, K.K., New Journal of Chemistry; 2019, 43, pp. 4364-4376.**
- 7. Faceted Growth of Morphologically Tuned of BiOCl; Sarkar, R., Das, D., Mitra, A., Sarkar, S. and Chattopadhyay, K.K., Materials Today: Proceedings, 2019, 18, pp. 1086-1095.**
- 8. Magnesium incorporated graphitic carbon nitride for effective removal of fluoride ions; Das D., Chattopadhyay K. K. and Mukherjee S., Journal of the Indian Chemical Society, 2019, 96, pp. 455-460.**
- 9. CsPbBrCl₂/g-C₃N₄ type II heterojunction as efficient visible range photocatalyst; Paul, T., Das, D., Das, B.K., Sarkar, S., Maiti, S. and Chattopadhyay, K.K., Journal of hazardous materials, 2019, 380, pp.120855.**

RESEARCH INTERESTS:

Development of Porous Carbon and Nitrogen based polymeric nanocomposites and its application in water remediation.

PAST AND CURRENT RESEARCH WORKS:

- Synthesized graphitic carbon nitride and studied in details its unique tunable photoluminescence behavior by varying the synthesis conditions.
- Graphitic carbon nitride was doped with transition metal Cobalt to effectively degrade harmful Eosin B dye in presence of visible light.
- Synthesized Nickel doped graphitic carbon nitride and applied it for efficient degradation of harmful Methyl Orange dye in presence of sodium borohydride without the utilization of any visible light.
- Developed a unique morphology tuned triazine based nanorod like polymer with high thermal stability which can detect toxic heavy metal Mercury in nanomolar range.
- Incorporated Magnesium groups into graphitic carbon nitride for effective adsorption and removal of fluoride ions.
- Developed a novel type-II heterojunction based on all-halide perovskite and graphitic carbon nitride for efficient degradation of toxic textile dyes from water environment.

PRESENTATIONS IN NATIONAL/INTERNATIONAL CONFERENCES:

1. Poster presentation entitled “Tunable Photoluminescence property in Graphitic carbon nitride by varying synthesis temperature” in ICANN 2015 held at IIT Guwahati.
2. Paper presentation entitled “Copper doped Graphitic carbon nitride and its unique Optical properties” in National Conference held at Ramakrishna Mission Vidyamandira, Belur, West Bengal.
3. Oral presentation on “Graphitic carbon nitride rod for Copper (2+) ion sensing” in 4th International Conference on Nanoscience and Nanotechnology (ICONN) 2017 held at SRM University, Chennai.
4. Participated in ISSMD-4 held at Jadavpur University, Kolkata in 2017.
5. Oral presentation on “Magnesium doped Graphitic Carbon Nitride for effective removal of Fluoride ions” in International Conference on Advanced Technologies for Industrial Pollution Control (ATIPC-2018) held at IEST, Shibpur, Kolkata.
6. Oral presentation on “Catalytic Reduction of 4-Nitrophenol by Rod-like Silver-Melamine Coordination polymer” in 2019 3rd International Conference on Materials Sciences and Nanomaterials (ICMSN 2019) held at Green Templeton College, University of Oxford, United Kingdom.

OTHER QUALIFICATION:

Appeared in Management Aptitude Test, May 2014 and scored 99.77 percentile.

INDUSTRIAL TRAINING EXPERIENCE:

- Electric Loco Shed, Howrah, Eastern Railways
- CESC Limited, Budge Budge Generating Station

LANGUAGES KNOWN:

Fluent in English, Bengali and Hindi

EXTRA CURRICULAR ACTIVITIES:

Trained singer. Participated in many Cultural Programmes, College Fests and received a number of certificates and prizes.

SKILLS/ EXPERIENCE:

Experienced in handling various experimental instruments like UV-Visible Spectrophotometer and X-Ray Diffractometer.

DOCTORAL RESEARCH SUPERVISORS:

1. Prof. Somnath Mukherjee
Environmental Engineering Section,
Department of Civil Engineering,
Jadavpur University,
Kolkata-700032, India
Email: mukherjeesomnath19@gmail.com

2. Prof. Kalyan Kumar Chattopadhyay
Thin Film and Nanoscience Laboratory,
School of Materials Science and Nanotechnology,
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