

Curriculum Vitae

Name: Dr. Dipayan Roy

Designation: Assistant Professor in Chemistry

Highest qualification: Ph.D.

Contact details/ Office address: 9332378781, Department of Chemistry
Darjeeling Government College, Leborg Cart Road, Darjeeling,
Pin-734101, West Bengal

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Date of joining to this institution: 31.12.2024

Date of joining W.B.E.S.: 31.12.2024

Previous position(s) held: Jadavpur University

Teaching experience in years & months: 2 Years & 3 months

Awards, Recognition and Honours:

- ❖ National Level Examinations qualified (Chemical Sciences): GATE – 2019 (Rank-510), 2021 (Rank-81)
- ❖ CSIR-UGC NET – Dec. 2015 (Lectureship Rank-14), 2019 (UGC-Rank 41)
- ❖ Shyamal Banerjee award State Level (2013) VIDYASAGAR COLLEGE
- ❖ Ashim Ray memorial award StateLevel VIDYASAGAR COLLEGE
- ❖ Niladri Memorial award State Level VIDYASAGAR COLLEGE
- ❖ PRIYA BALLAVE SARKAR SMRITI PADAK (2010) - State Level PANNALAL INSTITUTION
- ❖ UMESH CHANDRA DASGUPTA MERIT AWARD State Level PANNALAL INSTITUTION

Courses taught: Physical Chemistry, Characterization of Materials

Research area/ interest: 2D materials, electrocatalysis, Electrochemistry, Optoelectronics, DFT

Number of Publications-14

***Peer reviewed journals:** 13

***Conference proceedings:** NiL

***Chapters in books:** 1

Detailed list of publications:

- ❖ Chanda, K., Bairi, P., Maiti, S., Tripathi, A., Thapa, R., Ghosh, S., Panigrahi, K., **Roy, D.**, Sarkar, R. and Chattopadhyay, K.K., **2024**. Crystallinity and interfacial Mo–N–C bond engineered MoS₂ embedded graphitic nitrogen doped carbon hollow sphere for enhanced HER activity. *International Journal of Hydrogen Energy*, 56, pp.570-581.
- ❖ Ghorui, U.K., Show, B., **Roy, D.**, Basak, A., Adhikary, B. and Mondal, A., **2024**. Strategically Designed Pd-Induced Changes in Alkaline Hydrogen Evolution Reaction and Oxygen Evolution Reaction Performances of Electrochemical Water Oxidation by the Galvanically



Synthesized MoO₂/MoO₃ Composite Thin Film. *ACS Applied Materials & Interfaces*, 16(3), pp.3460-3475.

- ❖ **Roy, D.**, Kumar Das, B., Riaz, S.N., Das, D., Sarkar, S. and Chattopadhyay, K.K., **2023**. Oxygen Vacancy-Induced Band Engineering and Metal Unsaturation in MoS₂–MoO₃ with Spillover-Based Confined Catalysis. *ACS Applied Energy Materials*, 6(9), pp.4892-4908.
- ❖ Riaz, S.N., **Roy, D.**, Bhattacharjee, S., Chandra, A., Chattopadhyay, K.K. and Sarkar, S., **2023**. Exploring the interfacial behavior of SiNWs/Sulphur and Nitrogen-doped carbon dot based heterostructure for near-infrared photodetection application. *Materials Letters*, 345, p.134458.
- ❖ Das, A., **Roy, D.**, Das, B.K., Ansari, M.I., Chattopadhyay, K.K. and Sarkar, S., **2023**. Zinc doping induced WS₂ accelerating the HER and ORR kinetics: A theoretical and experimental validation. *Catalysis Today*, 423, p.113921.
- ❖ **Roy, D.**, Das, A., Roy, R., Das, D., Das, B.K., Ghorai, U.K., Chattopadhyay, K.K. and Sarkar, S., **2022**. Probing the emission dynamics in nitrogen-doped carbon dots by reversible capping with mercury (ii) through surface chemistry. *New Journal of Chemistry*, 46(30), pp.14690-14702.
- ❖ Sarkar, R., **Roy, D.**, Das, D., Sarkar, S. and Chattopadhyay, K.K., **2021**. Morphology tuning of bismuth oxychloride nano-crystals by citric acid variation: Application in visible light-assisted dye degradation and hydrogen evolution by electrochemical method. *International Journal of Hydrogen Energy*, 46(30), pp.16299-16308.
- ❖ Roy, R., Das, S., Mazumder, N., **Roy, D.** and Chattopadhyay, K.K., **2021**. Observation of polarization dependent excitonic luminescence in few-layered WS₂ flakes. *Chemical Physics Letters*, 781, p.139012.
- ❖ Sarkar, S., Ray, U., **Roy, D.**, Banerjee, D. and Chattopadhyay, K.K., **2021**. Synthesis of silicon nanowire and crystalline carbon quantum dots heterostructure and study of photo response and photoluminescence property. *Materials Letters*, 303, p.130493.
- ❖ **Roy, D.**, Panigrahi, K., Das, B.K., Ghorui, U.K., Bhattacharjee, S., Samanta, M., Sarkar, S. and Chattopadhyay, K.K., **2021**. Boron vacancy: a strategy to boost the oxygen reduction reaction of hexagonal boron nitride nanosheet in hBN–MoS₂ heterostructure. *Nanoscale Advances*, 3(16), pp.4739-4749.
- ❖ **Roy, D.**, Sarkar, S., Bhattacharjee, K., Panigrahi, K., Das, B.K., Sardar, K., Sarkar, S. and Chattopadhyay, K.K., **2020**. Site specific nitrogen incorporation in reduced graphene oxide using imidazole as a novel reducing agent for efficient oxygen reduction reaction and improved supercapacitive performance. *Carbon*, 166, pp.361-373.
- ❖ Bhattacharjee, S., Mazumder, N., Mondal, S., Panigrahi, K., Banerjee, A., Das, D., Sarkar, S., **Roy, D.** and Chattopadhyay, K.K., **2020**. Size-modulation of functionalized Fe₃O₄: Nanoscopic customization to devise resolute piezoelectric nanocomposites. *Dalton Transactions*, 49(23), pp.7872-7890.
- ❖ Roy, R., Thapa, R., Biswas, S., Saha, S., Ghorai, U.K., Sen, D., Kumar, E.M., Kumar, G.S., Mazumder, N., **Roy, D.** and Chattopadhyay, K.K., **2018**. Resonant energy transfer in a van der Waals stacked MoS₂–functionalized graphene quantum dot composite with ab initio validation. *Nanoscale*, 10(35), pp.16822-16829.

Chapters in books:

- ❖ Characterization of Nanomaterials for Use in Medical Imaging. Manas Thakur, Aaishiki Saha, Sampurna Mukherjee, S. Najes Riaz, Dipayan Roy, Kalyan Kumar Chattopadhyay, Sourav Sarkar. CRC Press, 2024.

Conference Attended:

- ❖ NCRDNN Jadavpur University -2019 (poster presentation)
- ❖ ICONSAT (International Conference on Nano Science and Technology)-2020 (poster presentation)
- ❖ YSC (Young Scientist Colloquium) -2023 (Oral Presentation)
- ❖ MPACS (Modern Perspective of Advances in Chemical Sciences)-2024 (poster Presentation)

Google Scholar link: <https://scholar.google.com/citations?user=8kMwbwgAAAAJ&hl=en>

ResearchGate link: <https://www.researchgate.net/profile/Dipayan-Roy-4>

ORCID ID:

Participation in Workshops/ Training programme/ Certificate course: