

Ayan Bhattacharyya

Project Consultant
 Small Business Innovation Research (SBIR)
 Alien Technology Transfer
 Hyderabad - 500034
 Telangana
 India
Phone: (+91) 9791265019
Email: *bhattacharyya.ayan10@gmail.com*



CAREER OBJECTIVE

- I am a sincere and dedicated person, performing to the best of my abilities, working hard and utilizing my skills to address challenging professional milestones. I strive to be a part of an organization that provides ample scope and opportunities for personal and professional growth and contributes towards development of society in general.

Education

2014-2019	Indian Institute of Technology, Madras Ph.D. in Physical Chemistry / Spectroscopy Ph.D. Course Work CGPA: 8.75 [relative grading] THESIS TITLE : Developing Strategies For Reducing Back Electron Transfer Rate in Selected Donor-Acceptor Systems
2012-2014	University of Hyderabad, Telangana M.Sc in Chemistry CGPA: 7.47 [absolute grading] Equivalent percentage: 69.7
2009-2012	St. Xaviers College, Park Street, Kolkata B.Sc in Chemistry (Hons.) Hons. Percentage: 67.5
2009	Successfully qualified 12 th Board Exam (ISC-2009) Board: Council for Indian School Certificate Examination % Marks Obtained: 87.85
2007	Successfully qualified 10 th Board Exam (ICSE-2007) Board: Council for the Indian School Certificate Examination % Marks Obtained: 90.57

Professional Experience

- August 2023-
Present
- Project Consultant, Small Business Innovation Research (SBIR), Alien Technology Transfer, Hyderabad-500034, India
Team Coordinator: Dr. Irfan Ahmad, Team Leader: Dr. Laetitia Gonzalez
- Understand the technologies developed by the clients
 - Provide guidance regarding the goals and vision of grant solicitation
 - Write and submit research proposals for clients
- September 2022-
July 2023
- Post-Doctoral Fellow, Department of Chemistry, Temple University (TU)
Advisor: Prof. Eric Borguet
- Catalysis of biological substrates (Cysteine, Gly-Gly) using metal oxy-hydroxides
 - Degradation of Chemical Warfare Agent Simulants using metal oxy-hydroxides
 - Chemistry of Surface (Gold and Oxide) Attachment of Spiro-oligomers
 - Development of Bio-Sensors using surface-attached Spiro-oligomers
 - Development of new-surface chemistry using alkane-thiols
- September 2021-
August 2022
- Post-Doctoral Fellow, Deadman College of Humanities and Sciences, Southern Methodist University (SMU)
Advisor: Dr. Anindita Das
- Synthesis of novel metal nanoclusters using unconventional ligands such as stibine and N-heterocyclic carbene
 - Investigation of the thermal & chemical stabilities of these metal-nanoclusters
 - Obtaining single crystals of these nanoclusters for structure determination
 - Investigation of solvent-dependent luminescence properties of nanoclusters
- 2014-2019
- Graduate Student, Indian Institute of Technology, Madras
Advisor: Prof. Edamana Prasad
- Synthesis of new organic donor- π -acceptor molecules and graphene quantum dots
 - Development of comprehensive insights into the photophysics of these materials
 - Learnt and worked on nano-second laser flash photolysis technique
 - Brought new expertise to Prof. Prasad's lab, particularly regarding reducing electron recombination rate and how suitable systems can be designed for efficient harvest of solar energy
- May-2020 to
September-2021
- Research Associate-I, Institute- Indian Association for the Cultivation of Science
Advisor: Dr. Anindita Das
- Review Writing, Grant-Writing, Mentoring Master's and Graduate Students
 - Development of Halogen-Bonded Supramolecular Assemblies
 - Learnt and operated Circular Dichroism Instrument for the entire group

Competitive Examination

1. Qualified GATE in 2014 (conducted by IITs and IISc)
2. AIR-22 in the M.Sc entrance examination in University of Hyderabad
3. Received the “*Central Sector Scheme of Scholarship for College and University Students*” for meritorious performance in Board Exams.

Publication

Published in peer-reviewed journals

Nawaj, W.; [Bhattacharyya, A.](#); Dadashi, S.; Simiyu, B.; Borguet, E*.; Alkanethiols self-assembled monolayer on hydroxylated oxide surfaces. [Manuscript Under Preparation]

Le, C.M.H., Devulapalli, D.V.S., [Bhattacharyya, A.](#), Dhar, S.; Sekhar, P.; Vaidhyanathan, R*.; Borguet, E*.; Zirconium oxyhydroxide catalyzed oxidation of cysteine. [Manuscript Ready for Submission]

[Bhattacharyya, A.](#)#.; Biswas, S#.; Das, A*.; Modular Approach to Design Halogen Bonding mediated Luminescent and Chiral Organic Materials. [Manuscript Submitted]

Singh, K#.; [Bhattacharyya, A.](#)#.; Havenridge, S.; Siegler, M.; Ghabin, M.; Ausmann, H.; Aikens, M.C*.; Das, A*.; A first look into mixed phosphine-stibine moieties as protecting ligands for gold clusters. *Nanoscale* 2023, 15, 6934-6940.

[Bhattacharyya, A.](#); De Sarkar, S*, Das, A*.; Supramolecular Engineering and Self-assembly Strategies in Photoredox Catalysis. *ACS Catalysis* 2021, 11, 710-733.

Pratihari, S#.; [Bhattacharyya, A.](#)#.; Prasad, E*.; Achieving ACQ-AIE Modulation using Isostructural Organic Fluorophores. *J. Photochem. Photobiol. A: Chemistry* 2020, 396, 112458.

[Bhattacharyya, A.](#); Mukherjee, S.; Chadha, A*.; Prasad, E*. Diffusion of Solvent Separated Ion Pairs Controls Back Electron Transfer Rate in Graphene Quantum Dots. *J. Phys. Chem. C* **2018**, 122, 15819-15825.

[Bhattacharyya, A.](#); Pratihari, S.; Prasad, E*. Photoinduced Electron Transfer Processes of (E)-9-(4-nitrostyryl)anthracene in Non-polar Solvent Medium: Generation of Long Lived Charge Separated States. *J. Chem. Sci.* **2018**, 130, 146-152.

[Bhattacharyya, A.](#); Malakar, P.; Prasad, E*. Long Lived Charge Separated States in Vinylbenzotrile Substituted Derivatives of Pyrene and Anthracene. *J. Photochem. Photobiol. A : Chemistry* **2017**, 340, 88-95.

Dana, S.; Sahoo, H.; [Bhattacharyya, A.](#); Mandal, A.; Prasad, E*.; Baidya, M*. Copper-Catalyzed Chelation-Assisted Synthesis of Unsymmetrical Aliphatic Azo Compounds. *ChemistrySelect* 2017, 2, 2029-2033.

Dana, S.; Mandal, T.; [Bhattacharyya, A.](#); Prasad, E*.; Baidya, M*. Bronsted Acid-promoted Facile Synthesis of N-fused Angular Imidazoquinolines. *CHEM LETT* 2017, 47, 175-178.

Note: # : The authors have contributed equally.

Presentation

Poster and Oral Presentation

- **Presented Poster** in 8th East Asia Symposium on Functional Molecules and Advanced Materials (EAS8), September 20-22, **2017**, NIIST, Thiruvananthapuram, Kerala, India.

Title of the Presentation : Photophysical Investigations of Vinylbenzotrile Substituted Derivative of Anthracene: AIE and Generation of White Light in Aqueous Medium.

- **Presented Poster** in 14th Biennial Trombay Symposium on Radiation and Photochemistry (TSRP), January 3-7, **2018**, BARC, Mumbai, India.

Title of the Presentation: Long Lived Charge Separated State and AIE Effect in Vinylbenzotrile Substituted Anthracene.

- **Presented Poster** in 255th ACS National Meeting and Exposition (ACS NOLA), March 18-22, **2018**, New Orleans, Louisiana, USA

Title of the Presentation: Photoinduced Electron Transfer Processes of Vinylbenzotrile Substituted Pyrene: Generation of Long-Lived Charged States.

- **Oral Presentation** in Chemistry In-House Symposium (CiHS-2018), September 28, **2018**, IIT Madras, Chennai, India.

Title of the Presentation: Generating Long Lived Charge Separated States via Bimolecular Photoinduced Electron Transfer Processes.

- **Attended Workshop and Presented Poster** in National Workshop on Fluorescence and Raman Spectroscopy (FCS-2018), November 12-17, **2018**, New Delhi, India.

Title of the Presentation: Effect of Size and Medium Viscosity on the Photogenerated Charge-Separated States of Graphene Quantum Dots.

- **Presented Poster** in 24th CRSI National Symposium in Chemistry (CRSI-NSC 24), February 8-10, **2019**, CSIR-CLRI, Chennai, India.

Title of the Presentation: Strategies to Reduce Bimolecular Back Electron Transfer Rate in Organic D- π -A systems and Graphene Quantum Dots.

Awards and Honours

- Received the ***Institute Research Award*** from ***IIT-Madras*** as a recognition of the ***Quality and Quantity*** of Research Done.
- Received the ***BEST POSTER*** Award in 14th Biennial Trombay Symposium on Radiation and Photochemistry (TSRP), January 3-7, **2018**, BARC, Mumbai, India.
- Received the ***BEST ORAL PRESENTATION*** Award in Chemistry In-House Symposium (CiHS-2018), September 28, **2018**, IIT Madras, Chennai, India.
- Received ***ACS BEST POSTER PRESENTATION*** Award in the 24th CRSI National Symposium (24th NSC-CRSI), February 8-10, 2019, CSIR-CLRI, Chennai, India.

Personal Skills

- Research Related Skills
- Molecular and Microlevel structural characterization of materials through Transmission & Scanning Electron Microscopes, Dynamic Light Scattering, Infrared Spectroscopy, UV-visible Absorption spectroscopy, Fluorescence Spectroscopy, Time-Resolved Fluorescence Measurements, NMR and Mass spectrometry
 - Organic Synthesis and Nano-Material Synthesis
 - Transient absorption spectroscopy
 - Obtaining Crystals of Nanoclusters
 - Surface modification and characterization
 - Leadership and Mentorship roles
 - Excellent presentation and editing skills
 - Independent thinking and grant-writing experiences
- Communication skills
- Good communication skills gained through my research experiences
 - Good inter-personal skills through various research and teaching programmes
 - Gained good reading and writing skills while doing literature survey and drafting manuscripts
 - Fluent in English, Bengali and Hindi
 - Fluent communication with US based clients
- Organizational/ Managerial/ Teaching skills
- Assisted research project for master degree students, Indian Institute of Technology, Madras (12 months)
 - Assisted research project for summer project students, Indian Institute of Technology, Madras (2 months)
 - Worked as teaching assistant for 2 semesters at Indian Institute of Technology, Madras (2015-2016)
 - Assisted practical classes for under graduate (B.Tech) students for 2 semesters at Indian Institute of Technology Madras
 - Assisted Prof. Prasad in buying new equipments and instruments for the lab, handled lab finances, processed bills, ordered chemicals, maintained lab decorum as lab in-charge.
 - Mentored graduate and undergraduate students and assisted in their research projects in all post-Ph.D. laboratories
- Computer skills
- Proficient in Windows based operating systems
 - Basic Software needed for my research: ChemDraw, Scifinder, Origin, Topspin, End Note, Igor-Pro, Mercury, Mestre Nova etc
 - Proficient in using MS-Word and MS-PowerPoint
 - Proficient in using business platforms like ODOO and KEKA
 - Proficient in using AWS S3 server platform (for data storage purposes)

References

- 1. Prof. Edamana Prasad** (Ph.D. Supervisor)
Department of Chemistry,
IIT Madras,
Chennai-600036.
Email: pre@iitm.ac.in
Cabin: 044-22574232
Cell phone: 09884187052
- 2. Prof. Eric Borguet** (Post-Doc Supervisor)
Temple University Chemistry Department,
Room BE130
Philadelphia, PA, 19122
Email: eborguet@temple.edu
Cell phone: 215-204-9696
- 3. Prof. Anindita Das** (Post-Doc Supervisor)
Fondren Science Building,
Southern Methodist University (SMU),
Dallas- 75205
Email: aninditad@mail.smu.edu
Cell phone: +1-(412)-350-8633
- 4. Prof. Sudakar Chandran** (Ph.D. Doctoral Committee Member)
Department of Physics,
IIT Madras,
Chennai-600036.
Email: csudakar@iitm.ac.in
Cabin: 044-22574895
- 5. Prof. Md. Mahiuddin Baidya** (Research-Collaborator)
Department of Chemistry,
IIT Madras,
Chennai-600036.
Email: mbaidya@iitm.ac.in
Cabin: 91-44-2257-421