

MADHURIMA CHAKRABORTY

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Date of Birth: February 19, 1986

Current Position- Assistant Professor, Department of Biochemistry, West Bengal State University

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CAREER OBJECTIVE

I would like to impart quality teaching and carry out frontline research in Biochemistry in an Academic Institution.

EXPERIENCE (RESEARCH AND TEACHING)

• RESEARCH

- i. **Ph.D.- PhD awarded** in 2017 from the DEPARTMENT OF BIOCHEMISTRY, UNIVERSITY OF CALCUTTA, under the guidance of PROF. MAITRAYEE DASGUPTA
TITLE OF THE THESIS- *Elucidating the Mechanistic Details of Oscillation of Energy Transfer Between Two Photosystems*
- ii. Post-Doctoral- Visiting Post-Doctoral researcher from SCHOOL OF LASER SCIENCE AND ENGINEERING, JADAVPUR UNIVERSITY **from May, 2017 onwards**
Research area- *Bimolecular Interactions*
- iii. Visiting researcher in Jadavpur University, SCHOOL OF LASER SCIENCE AND ENGINEERING, JADAVPUR UNIVERSITY **from July, 2019 onwards**

• TEACHING LEVEL

TEACHING EXPERIENCE- ~ 2016 onwards

- i. Former ASSISTANT PROFESSOR (Contractual) in L.J.D. college, Falta,
Department of Biochemistry
Ex-Head of the Department
- ii. Ex-Guest lecturer in Vidyasagar college,
Department of Biochemistry
- iii. Ex-Guest lecturer in Viharilal college,
Department of Food and Nutrition (UG and PG courses)
- iv. Ex-Guest lecturer in Asutosh College,
Department of Environmental Science (PG course)

PUBLICATIONS

Publications

1. Static magnetic field (SMF) sensing of the P₇₂₃/P₆₈₉ photosynthetic complex
Abhishek Bhattacharya*, **Madhurima Chakraborty***, Sufi O. Raja, Avijit Ghosh, Maitrayee DasGupta and Anjan Kr. Dasgupta
***Equal contribution**
Journal name- Photochemical and Photobiological Sciences, *Photochem PhotobiolSci* 13: (2014) 1719-1729
2. Trans-thylakoid ΔpH dependent oscillation of F_{PSII}/F_{PSII} under continuous irradiance in isolated thylakoids
Koel Sen, Avijit Ghosh, **Madhurima Chakraborty**, Shyamsundar Maity, Sanjib Ghosh, Maitrayee DasGupta
Journal name- Journal of Bioenergetics and Biomembranes, *J BioenergBiomembr* 46: (2014) 71–82
3. To reveal the nature of interactions of Human Hemoglobin with gold nanoparticles having two different morphologies (sphere and star-shaped) by using various spectroscopic techniques
Madhurima Chakraborty, Somnath Paul, Ishani Mitra, Munmun Bardhan, Mridul Bose, Abhijit Saha, Tapan Ganguly
Journal name: Journal of Photochemistry & Photobiology, B: Biology 178 (2018) 355–366
4. Fluorescence enhancement via aggregation effect due to microenvironmental alterations in human hemoglobin protein in presence of carbon quantum dots (CQD): Comparative spectroscopic approach
Madhurima Chakraborty, Ishani Mitra, Kuntal Sarkar, Munmun Bardhan, Somnath Paul, Satakshi Basu, Arunava Goswami, Abhijit Saha, Bibhutibhushan Show, Tapan Ganguly
Journal name: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 215 (2019) 313–326
5. **Mini review**
Adjustments in microenvironment of human Hemoglobin upon interactions with members of Gold and Carbon nanofamily
Madhurima Chakraborty and Tapan Ganguly
Journal name: Karnatak University, Journal of Science, September (2020) Vol. 51, Page 28-39, ISSN: 0075-5168
6. Contrasting spectroscopic response of Human Hemoglobin in presence of graphene oxides and its reduced form: Comparative approach with Carbon quantum dots
Madhurima Chakraborty, Ishani Mitra, Arka J. Roy, Somnath Paul, Ayan Mallick, Subrata Das, Abhijit Saha, Bibhutibhushan Show, Pabitra K. Chakrabarti Tapan Ganguly
Journal name: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 247 (2021) 119079
7. **Review**
Role of Hemoglobin as a representative protein for effective bimolecular interactions with Graphene oxide and Gold nanostar
Madhurima Chakraborty and Tapan Ganguly
Journal name: Bulletin of Laser and Spectroscopy Society of India (Issue 26_2020), LASER AND SPECTROSCOPY SOCIETY OF INDIA, Page 11-31, ISSN: 2229-3752
8. **Review**
Nature of Secondary Structural Alterations of Human Hemoglobin During Interactions With Gold Nanoparticle And Reduced Graphene Oxide
Madhurima Chakraborty and Tapan Ganguly
Journal name: INDIAN JOURNAL OF THEORETICAL PHYSICS, VOL 68, NOS. 1 & 2, 2020

AWARDS

1. Role of Carbon Quantum Dots in Fluorescence Enhancement of Human Hemoglobin

Madhurima Chakraborty and Tapan Ganguly

Two Days **International** Seminar On Recent Trends In Science Towards Sustainable Development, August, 6-7, 2018

Organized by Acharya Prafulla Chandra College In Collaboration with Indian Chemical Society

Certified for best oral presentation

2. Gold Nanostars as fluorescence quencher and Nitrogen doped Carbon Quantum Dots as fluorescence enhancers of human Hemoglobin: Nanoscale modulation of protein fluorescence

Madhurima Chakraborty and Tapan Ganguly

International Conference on Sustainable Environment & Healthcare, 21st and 22nd December, 2019

Organized by Dr. Tarak Nath Podder Memorial Foundation in collaboration with Center for Disaster Preparedness and Management, Jadavpur University, Chittaranjan National Cancer Institute, Lincoln University College, Malaysia

Certified for best oral presentation

POSTER PRESENTATION-

Ph.D. presentation

3. Oscillation of State-1 and State-2 between two photosystems

Madhurima Chakraborty, Avijit Ghosh, Koel Sen, Maitrayee DasGupta

National Fluorescence Workshop on Fluorescence Methods in Single Molecule Spectroscopy, [FCS, 2012] December- 3- 7, 2012, Kolkata

4. Trans-thylakoid Δ pH dependent changes in stacking pattern of thylakoids under continuous irradiance

Madhurima Chakraborty, Avijit Ghosh, Maitrayee DasGupta

CAS-Phase II sponsored One day Symposium on "Emerging Trends in Biology", 17th March, 2017, Department of Biochemistry, University of Calcutta.

Post-doctoral presentation

Poster presentation

5. Steady state and time resolved spectroscopic investigations to reveal the nature of interactions of Human Hemoglobin with carbon quantum dot (CQD)

Madhurima Chakraborty, Somnath Paul, TapanGanguly

One Day National Seminar on MATERIAL CHEMISTRY FOR BETTER TOMORROW [MCBT 2017]

Organized by Department of Chemistry, AsutoshCollege, Kolkata, in association with Indian Chemical Society, on November 7, 2017

6. Investigations on the nature of interactions of Human Hemoglobin with gold nanoparticles having two different morphologies

Madhurima Chakraborty, Somnath Paul, Ishani Mitra, and Tapan Ganguly

National workshop on fluorescence and Raman spectroscopy [FCS 2017], December- 17- 21, 2017,

Organized by Department of Bioscience and engineering, IIT Guwahati.

7. Minor changes in secondary structure but distinct changes in tertiary structure within the microenvironment of Human Hemoglobin occurs upon interaction with Carbon Quantum dots (CQDs) as revealed by CD spectroscopy

Madhurima Chakraborty and TapanGanguly

National-Level Seminar on Recent Trends n Chemical Sciences (RTCS-2018)

Organized by Department of Chemistry, Surendranath Evening College, Kolkata, October 6-7, 2018

Oral presentation

- 8. Comparative spectroscopic analysis to reveal the nature of interactions of Human Hemoglobin with Carbon Quantum Dots (CQD) and Nitrogen doped CQD (NCQD)**

Madhurima Chakraborty and Tapan Ganguly

International Conference on Current Trends in Material Science and Engineering [CTMSE 2018], January 19-20, 2018, Organized by Institute of Engineering & Management, Kolkata and S.N. Bose National Centre for Basic Sciences, Kolkata

- 9. Spectroscopic properties of Human Hemoglobin altered differently in presence of Graphene Oxide and Reduced Graphene Oxide**

Madhurima Chakraborty and TapanGanguly

International Conference on Current Trends in Material Science and Engineering [CTMSE 2019], July 18-20, 2019, Organized by Institute of Engineering & Management, Kolkata and S.N. Bose National Centre for Basic Sciences, Kolkata

Academic Seminars/Workshops/Symposiums Attended

- 10.** Attended workshop for U.G Biochemistry Teachers on B.Sc. syllabus in Biochemistry (Hons. & General) under CBCS system at Department of Biochemistry, University of Calcutta, Councils for Under Graduate Studies & Under Graduate board of Studies in Biochemistry on 2nd July, 2018.
- 11.** Attended workshop on 'Roadmap of better performance in Biochemistry Honours,' under CBCS system at Department of Biochemistry, Vidyasagar College on 11th October, 2018.

Seminars/Workshops/Symposiums Attended

- 12. Emerging Trends In Dietary Management Of Disease**

Organized by International College of Nutrition,

Calcutta Chapter in association with NUTRILITE at Science College (Rajabajar), University of Calcutta, Kolkata,

From 27-29 October 2006, KOLKATA

- 13. Current Perspectives In Life Sciences [BIOTICA 2015]**

Organized by CRNN, University Of Calcutta, Kolkata

An **International** Symposium

On 4th JANUARY, 2015, KOLKATA

- 14. Life Science Research In Health And Disease**

Organized by Advanced Research Center, Department of Microbiology, Lady Brabourne College,

One day **International** Seminar

On 26th February, 2018, KOLKATA

WEBINAR ORGANIZED AS CONVENER

One day International webinar organized by Department of Biochemistry in collaboration with IQAC

Title: Modern Biochemical Tools: Prospects and Opportunities

30th August, 2020

<https://www.wbsu.ac.in/events/biochemistry-webinar/>