

Bappaditya Naskar, Ph. D., Post-doc (France)

Assistant Professor (Stage II)

Department of Chemistry

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Professional Experiences

- ❖ **Assistant Professor** - Department of Chemistry, Sundarban Hazi Desarat College, University of Calcutta. Since **March, 2015**
- ❖ **Guest Faculty**- Department of Chemistry, Presidency University, 2017-2018
- ❖ **Post Doctoral Fellow** - Institut de Chimie Séperative de Marcoule, CEA Marcoule, France, from **September, 2013 to December, 2014**. Advisors: Prof. O. Diat and Prof. P. Bauduin

Education

- ❖ **Ph. D. (Science)**: Thesis: **Physicochemical Studies on Polymers and Surfactants in Solution and their Mutual Interaction**. Jadavpur University, Kolkata, India. May, 2013. Advisor: Prof. S. P. Moulik
- ❖ **M. Sc. in Chemistry** with specialization in **Physical Chemistry**, Jadavpur University, August, 2008
- ❖ **B. Sc. in Chemistry** with major and minor in Physics and Mathematics, Jadavpur University, August, 2006.
- ❖ **Higher Secondary** W. B. C. H. S. E., July, 2003
- ❖ **Secondary** W. B. B. S. E., June, 2001

Fellowships and Awards

- Post Doctoral Fellowship - '**ANR Grant**' Funded by Govt. of France
- Post Doctoral Fellowship – Konan University, Japan (not availed)
- Best oral presentation awards in 20th Ostwald-Colloquium at MPI, Mainz, Germany
- Best oral presentation awards by ACS in Int. Conf. on Adv. Materials & Manufacturing at JIS University, Kolkata, India
- Qualified Joint CSIR - UGC, Govt. of India, December 2007, National Eligibility Test in **CHEMICAL SCIENCES**
- Qualified Graduate Aptitude Test in Engineering, 2008 organized by Indian Institute of Technology, Kanpur, India.
- Junior and Research Fellowship from UGC, Govt. of India in 2008-2010
- Senior Research Fellowship from UGC, Govt. of India in 2010-2013
- Guest Editor- Journal of Surfactants and Detergents of Special Issue Commemorating Prof. S. P. Moulik

Service and Outreach

- Joint NAAC Steering Committee Coordinator- SHD College (2015-16)
- Boys' Hostel Superintendent- SHD College (2017-18)
- Sports Sub-committee Convener- SHD College (Since July, 2018)
- RUSA Project Monitoring Unit Convener – SHD College (Since October, 2020)
- Teachers' Council Secretary –SHD College (Since August, 2022)
- Life member of Indian Society for Surface Science and Technology (Member ID: L/M-N-20)
- General member of Association Française des Utilisateurs de Rayonnement Synchrotron et XFEL since 2014 (French Association of Synchrotron Radiation Users and XFEL)
- Executive Committee member of Indian Society for Surface Science and Technology since January, 2020
- Member of American Chemical Society since June, 2020 (Member ID: 30702236)
- Co-ordinating Editor of J. Surf. Sci. Tech. since February, 2021
- Reviewer of JACS, Langmuir, JPC, Biomacromolecules, Colloids Surface A, Ionic Liquid, J Surf. Det., MDPI published scientific journals.

Teaching (B. Sc.)

- Atomic structure
- Gaseous/liquid/solid State
- Chemical Kinetics
- Colloid Chemistry
- Chemical Thermodynamics
- Electrochemistry
- Quantum Chemistry, Photochemistry & Spectroscopy

Sponsored project

Serial No	Title	Funding agency	Status	Amount (Rs.)
1	A Seasonal Pattern of Hydrographical Parameters of Sundarbans River Systems, West Bengal, India	IQAC	Completed (2023-24)	35,000/-
2	Physicochemical Studies on Surfactant-Based Catanionic Coacervates and Their Diverse Applications	SERB, DST	Ongoing (2024-27)	42,97,832/-

Ph.D. students

Serial No	Name	Thesis Title	Supervisor/s	Year of Awarding
1	Dipali Roy, SRF	Investigation of surface and solution behavior of amphiphiles exploring the scopes towards synthesis of nanoparticles	Dr. Tanushree Bala & Dr. Bappaditya Naskar	...
2	Nidali Bondyopadhyaya JRF (Project Fellow)	Dr. Bappaditya Naskar
3	Mili Naskar, JRF	Dr. Tanushree Bala & Dr. Bappaditya Naskar	

Past research scholars

1. Debadyuti Mahapatra, JRF (Project Fellow)

Publications in International Peer Reviewed Journals (*corresponding author)

<https://scholar.google.co.in/citations?bappadityanaskar>

ORCID: 0000-0001-9417-296X

34. D. Roy, **B. Naskar***, T. Bala*, A thermodynamics approach to the phase separation phenomena and micellization of Tetronic 701 and Tetronic 90R4 in aqueous solutions, **J. Phys. Chem. B**, 2025 (submitted)
33. **B. Naskar*** Micellization and Physicochemical Properties of CTAB in Aqueous Solution: Interfacial Properties, Energetics, and Aggregation Number at 290 to 323 K, **Colloids and Interfaces**, 9, 2025, 4. (I.F. 2.5) [Feature Article]
32. D. Roy, **B. Naskar***, T. Bala*, Catalytically Active Gold Nanoparticles on Star Block Co-polymer Matrix: Synthesis of Nanocomposite Film Exploring Langmuir Blodgett Technique, **Langmuir**, 40, 2024, 23324-23326. (I.F. 3.9)

31. D. Roy, **B. Naskar***, T. Bala*, Effect of Hofmeister Anions Series on the Langmuir film of Tetronic 90R4 and Tetronic 701 Block Copolymers, *Langmuir*, 40, **2024**, 20927-20937. (I.F. 3.9)
30. A. K. Rakshit, **B. Naskar***, S. P. Moulik, Post Centennial of Micelles: An Overview. *Current Science*, 127, **2024**, 406-422. (I.F. 1.0) [[Appeared as front cover article](#)] (I.F. 1.0)
29. D. Roy, B. Roy, **B. Naskar***, T. Bala*, Detailed study on interfacial interaction between different polyoxometalates and tetronic copolymers exploring Langmuir-Blodgett technique, 40, *Langmuir*, 2024, 16030-16047. (I.F. 3.9) [[Appeared as front cover article](#)]
28. S. P. Moulik, A. K. Rakshit, **B. Naskar***, Physical Chemical Properties of Surfactants in Solution and their Applications: A Comprehensive Account. *J. Surfactants and Detergents*, 27, **2024**, 895-925. [[Invited Article for Special Issue](#)] (I.F. 1.6)
27. S. P. Moulik, A. K. Rakshit, A. Pan*, **B. Naskar***, An Overview of Coacervates: The Special Disperse State of Amphiphilic and Polymeric Materials in Solution. *Colloids and Interfaces*, 6, **2022**, 45. [[Invited Article for Special Issue, among top cited and viewer article for 2022-2024 \(24 months from publication\)](#)] (I.F. 2.5)
26. A. K. Rakshit, **B. Naskar**, S. P. Moulik*, Colloid stability and Schulze – Hardy rule: Its origin and new inputs. *Acc. Chem. Edu. Research* 1, **2022**, 11. [[Invited Article for First Issue](#)]
25. A. K. Rakshit, **B. Naskar***, S. P. Moulik, Performance of Modified Schulze-Hardy Rule on the Stability of Nano, Micro, and Macro Colloidal Dispersions: A Comprehensive Account. *Colloids Surfaces A* 626, **2021**, 127084. (I.F. 5.2)
24. D. Roy, **B. Naskar***, T. Bala*, Exploring Langmuir-Blodgett Technique to Investigate Effect of Various Subphase Conditions on Monolayers Formed by Amphiphilic Block Co-polymers Tetronic 701 and Tetronic 90R4. *Colloids Surfaces A* 625, **2021**, 126924. (I.F. 5.2)
23. S. P. Moulik, A. K. Rakshit, **B. Naskar***, Evaluation of Non-Ambiguous Critical Micelle Concentration of Surfactants in Relation to Solution Behaviors of Pure and Mixed Surfactant Systems: A Physicochemical Documentary and Analysis. *J. Surfactants and Detergents* 24, **2021**, 535. [[Invited Article for Special Issue, Top Cited Article 2021-22](#)] (I.F. 1.6)
22. A. K. Rakshit, **B. Naskar***, S. P. Moulik, Stability of Hydrophobic Colloids: Perspectives and Current Opinion. *J. Disp. Sci. Tech.* 42, **2021**, 503. (I.F. 2.2)
21. L. Girad*, **B. Naskar**, J. F. Dufreche, J. Lai, O. Diat, P. Bauduin, A Thermodynamic Model of Non-Ionic Surfactants' Micellization in the Presence of Polyoxometalates. *J. Mol. Liquids* 293, **2019**, 111280. (I.F. 6.0)
20. S. P. Moulik, **B. Naskar**, A. K. Rakshit, A Brief Account of the Current Status of Enthalpy Entropy Compensation Phenomenon. *Current Science* 117, **2019**, 1286. (I.F. 1.0)
19. A. K. Rakshit, **B. Naskar**, S. P. Moulik*, Commemorating 75 years of Microemulsion: A Journey Forward, *Current Science* 116, **2019**, 898. [[Appeared as front cover article](#)] (I.F. 1.0)
18. T. Bucheker, X. L. Goff, **B. Naskar**, A. Pfitzner, O. Diat, P. Bauduin*, Polyoxometalate/Polyethylene Glycol Interactions in Water: From Nanoassemblies in Water to Crystal Formation by Electrostatic Screening. *Chem. European J.* 23, **2017**, 8434. [[Appeared as back cover article](#)] (I.F. 4.3)
17. **B. Naskar**, O. Diat, V. Nardello-Rataj, P. Bauduin*, Nanometer-size Polyoxometalate Anions Adsorb Strongly on Neutral Soft Surfaces. *J. Phys. Chem. C* 119, **2015**, 20985. (I.F. 3.7)
16. **B. Naskar**, S. Ghosh, S.P. Moulik*, Interaction of Normal and Reverse Pluronics (L44 and 10R5) and their Mixtures with Anionic Surfactant Sodium N-Dodecanoyl Sarcosinate. *J. Colloid Interface Sci.* 414, **2014**, 82. (I.F. 9.9)
15. D. Sardar, **B. Naskar**, A. Sanyal, T. Bala*, S. P. Moulik*, Organic-Inorganic Hybrid: A Novel Template for Synthesis of Nanostructured Ag. *RSC Advances* 4, **2014**, 3521. (I.F. 3.9)

14. S. Majumder, **B. Naskar**, S. Ghosh, C.-H. Lee, C.-H. Chang, S. P. Moulik, and A. K. Panda*, Synthesis and Characterization of Surfactant stabilized Nanocolloidal Dispersion of Silver Chloride in Aqueous medium. *Colloids and surfaces A* **443**, **2014**, 156. (I.F. 5.2)
13. A. Pan, **B. Naskar**, et al., Micellization and Related Behavior of Sodium Dodecylsulfate in Mixed Binary Solvent Media of Tetrahydrofuran (Tf) and Formamide (Fa) with Water: A Detailed Physicochemical Investigation. *Soft Matter* **10**, **2014**, 5682. (I.F. 3.4)
12. S. Das, **B. Naskar**, S. Ghosh*, Influence of Temperature and Organic Solvents (isopropanol and 1,4-dioxane) on the Micellization of Cationic Gemini Surfactant (14-4-14). *Soft Matter* **10**, **2014**, 2863. (I.F. 3.4)
11. **B. Naskar**, S. Mandal, S. P. Moulik*, Amphiphilic Activities of Anionic Sodium Cholate (NaC), Zwitterionic 3-[(3-cholamidopropyl)dimethylammonio]-1-propanesulfonate (CHAPS) and their Mixtures: A Comparative Study. *Colloids Surfaces B* **112**, **2013**, 155. (I.F. 5.8)
10. **B. Naskar**, A. Dey, S. P. Moulik*, Counter-ion Effect on Micellization of Ionic Surfactants: A Comprehensive Understanding with Two Representatives. Sodium Dodecylsulfate (SDS) and Dodecyltrimethylammonium Bromide (DTAB). *J. Surfactants and Detergents* **16**, **2013**, 785. (I.F. 1.6)
9. I. Mukherjee, S. Mukherjee, **B. Naskar**, S. Ghosh, S. P. Moulik*, Interfacial and Bulk Behavior of two Phosphonium Based Ionic Liquids. *J. Colloid Interface Sci.* **395**, **2013**, 135. (I.F. 9.9)
8. A. Pan, S. S. Mati, **B. Naskar**, S. C. Bhattacharya, S. P. Moulik*, Self-Aggregation of MEGA-9 (N-nonanyl-N-methyl-D-glucamide) in Aqueous Medium: Physicochemistry of Interfacial and Solution Behaviors with Special Reference to Formation Energetics and Micelle Microenvironment. *J. Phys. Chem. B* **117**, **2013**, 7578. (I.F. 3.3)
7. **B. Naskar**, A. Dan, S. Ghosh, V. K. Aswal, S. P. Moulik*, Revisiting the Self-aggregation Behavior of Cetyltrimethylammonium Bromide in Aqueous Sodium Salt Solution with Varied Anions. *J. Mol. Liquids* **170**, **2012**, 1. (I.F. 6.0)
6. **B. Naskar**, S. Ghosh, S. P. Moulik*, Solution Behavior of Normal and Reverse Triblock Co-polymers (Pluronic L44 and 10R5) individually and in Binary Mixture. *Langmuir* **28**, **2012**, 7134. (I.F. 3.9)
5. M. Chakraborty, F. -W. Hsiao, **B. Naskar**, C. -H. Chang, A. K. Panda*, Surfactant-Assisted Synthesis and Characterization of Stable Silver Bromide Nanoparticles in Aqueous Media. *Langmuir* **28**, **2012**, 7282. (I.F. 3.9)
4. A. Pan, **B. Naskar**, et al., Amphiphile Behavior in Mixed Solvent Media I: Self-aggregation and Ion-association of Sodium Dodecylsulfate in 1, 4-Dioxane - Water and Methanol - Water Media. *Langmuir* **28**, **2012**, 13830. (I.F. 3.9)
3. **B. Naskar**, S. Ghosh, G. Sugihara, S. P. Moulik*, Behavior of the Amphiphile CHAPS Alone and in Combination with the Biopolymer Inulin in Water and Isopropanol - Water Media. *Langmuir* **27**, **2011**, 9148. (I.F. 3.9)
2. **B. Naskar**, A. Dan, S. Ghosh, S. P. Moulik*, Characteristic Physicochemical Features of the Biopolymer Inulin in Solvent Added and Depleted States. *Carbohydrate Polymers* **81**, **2010**, 700. (I.F. 11.2)
1. **B. Naskar**, A. Dan, S. Ghosh, S. P. Moulik*, Viscosity and Solubility Behavior of the Polysaccharide Inulin in Water, Water + Dimethyl Sulfoxide, and Water + Isopropanol Media. *J. Chem. Eng. Data* **55**, **2010**, 2424. (I.F. 2.6)

Conference Proceedings

2. Self-aggregation of the of the Amphiphile CHAPS and its interaction with the Biopolymer Inulin in Water and Isopropanol-Water Media, **B. Naskar**, S. Ghosh, S.P. Moulik in Trends in Surface Science and Related areas by Indian Society for Surface Science and Technology, November 19, 2010.
1. Self-aggregation and Related Properties of Ionic Surfactant in Aquo-organic Solvent Media, A. Pan, **B. Naskar**, S. C. Bhattacharya, S.P. Moulik in Trends in Surface Science and Related areas by Indian Society for Surface Science and Technology, November 19, 2010.

Book Chapter

Invited book chapter contribution: Physicochemical and Thermodynamic Aspects of Langmuir Monolayer and Langmuir-Blodgett Film, **B. Naskar** and S. P. Moulik, in Langmuir-Blodgett Films: from Fundamentals to Application, Edited by Prof. S. A. Hussain, **Publisher:** Elsevier, ISBN-10: 0323857868 / ISBN-13: 978-0323857864 (2023, accepted for publication)

Selected Conference/Seminars/ Meeting Contribution

19. **International Conference on Emerging Trends in Chemical Sciences Towards Sustainability & Interdisciplinary (ETCSTI-2025)** organized by Bhawanipur Education Society College & Indian Photobiology Society on 10-11 January 2025. Poster Presentation on Synthesis of Catalytically Active Gold Nanocomposite Films: Exploring the Langmuir-Blodgett Technique.
18. **International Conference on Advance Materials and Manufacturing** organized by JIS University & CSIR, South Africa at Kolkata, India on 18-19 December, 2024. **Oral Presentation** on Effect of Polyoxometalates on Interfacial Properties of Star Block Co-polymer Exploring Langmuir Blodgett Technique.
17. **International Conference on Composite Materials for Environmental Protection & Remediation (ICMEPR-2024)**, Organized by Gram Bharati College and Chemical Research Society of India, Bihar, July 2-3, 2024. **Invited Speaker** on Study of Langmuir Blodgett Technique in the Synthesis of Catalytically Active Gold Nanoparticles Nanocomposite Film by Star Block Co-polymer Mediated Synthesis.
16. **International Seminar on Pollution and Biosafety: Issues and Concerns** organized by Department of Chemistry, Raja Rammohun Roy Mahavidyalaya, Hooghly, WB, August 3, 2022. **Oral Presentation** on Evaluation of Non-ambiguous Critical Micelle Concentration of Surfactants and Applicability of Cloud Point Extraction of Metal Ions from Waste Water
15. **International Seminar on Sundarbans: Science to Society** organized by Sundarban Hazi Desarat College, January 26, 2020. **Oral Presentation** on Ion Flotation: A Cost Effective Process for Waste Water Treatment.
14. **International Seminar on Itinerary of Classical to Modern Era of Chemistry** organized by Department of Chemistry, The Bhawanipur Education Society College, Kolkata, November 4, 2019. **Poster Presentation** on Hybrid Inorganic-Organic Materials Based on Salting In Property.
13. **International Conference on Emerging Materials** organized by Department of Chemistry and Chemical Technology, Vidyasagar University, April 20-21, 2017. **Poster Presentation** on Polyoxometalate-Organic Hybrid Assemblies by Adsorption.
12. **Trends in Surface Science and Related Areas** organized by Indian Society for Surface Science and Technology, and Department of Chemistry, Ramkrishna Mission Vivekananda Centenary College, Rahara, July 28, 2017. **Invited Speaker** on Interaction of Polyoxometalate with Non-ionic Surfactant/Polymer in Water.
11. **National Symposium on Recent Advances in Chemistry and Industry 2016** organized by Indian Chemical society, August 2-3, 2016. **Oral Presentation** on Nanometersize Polyoxometalate (POM) Anions Adsorb Strongly on Neutral Soft Surfaces.
10. **20th Ostwald-Colloquium "Particles@Interfaces"** organized by Max Planck Institute of Mainz, Germany, September 17-19, 2014. **Oral Presentation** on Physico-chemical and Catalytic Properties of Polyoxometalate Surfactants.

9. **ANR Meeting at UPMC, Paris, France:** Solution Behaviors of Native POMs, 13th March, 2014 (Oral presentation)
8. **Trends in Surface Science and Related Areas** organized by Indian Society for Surface Science and Technology, and Department of Pharmaceutical Science, Jadavpur University, 3rd May, 2013. **Invited Speaker** on Interaction of Anionic Surfactant with Block Co-polymer.
7. **Fifteen National Conference on Surfactants, Emulsions and Biocolloids-2011;** organized by Indian Society for Surface Science and Technology and Tripura University, December 27-29, 2011. **Oral Presentation** on Temperature Dependent Physicochemical Properties of Triblock Co-polymer Pluronic in Aqueous Solution.
6. **Trends in Surface Science and Related Areas** organized by Indian Society for Surface Science and Jadavpur University, November 08, 2011. **Invited Speaker** on Counter-ion Effect on Micellization of Ionic Surfactants: A Comprehensive Understanding with Two Representatives, Sodium Dodecyl Sulfate (SDS) and Dodecyltrimethylammonium Bromide (DTAB)
5. **National Conference on Trends in Surface Science and Related Areas** organized by Indian Society for Surface Science and Technology and Centre for Surface Science, Jadavpur University, November 19, 2010. **Poster Presentation** Self-aggregation of the Amphiphile CHAPS and its interaction with the Biopolymer Inulin in Water and Isopropanol-Water
4. **National Seminar on Membranes, Microemulsions and Self-Assembled Systems (MMSAS-2010);** Organized by Sikkim Manipal Institute of Technology, Sikkim, September 28-30, 2010. **Oral presentation** on Solution Behavior of Zwitterionic Biosurfactant and its Interaction with Biopolymer.
3. **National Conference on new Arena in Photosciences** organized by Department of Chemistry and Indian Photobiology Society, Jadavpur University, August 28, 2010. **Oral Presentation** on Micellar Aggregation Number Determination by Fluorescence.
2. **14th National Conference on Surfactants, Emulsions and Biocolloids (NATCOSEB-XIV);** Indian Society for Surface Science and Technology -and University of Kashmir, July 28-30, 2009. **Poster Presentation** on Salt Effect on the Self-aggregation of Cetyltrimethylammonium Bromide (CTAB): A Physicochemical Assessment of the Process Parameters and their Correlation in the Light of Hofmeister (or Lyotropic) Series.
1. **National Conference on Frontiers of Colloids, Surface and Nanostructured Systems;** Organized by Manipur University, North East Chapter, ISSST, February 28-30, 2009. **Oral presentation** on Physicochemical Studies of Inulin: Assessment of its Solution Properties in Aqueous Organic Media and Salt Environment.

Research Highlights and Interests

- ❖ Multidisciplinary background in **colloids, polyoxometalates (POMs), interfacial chemistry and materials science.**
- ❖ **Extensive knowledge and hands-on experience in** Polymers, Surfactants and Polyoxometalates
- ❖ Knowledge and hands-on experience on **ion-separation by flotation** (foaming)
- ❖ Preparation of vesicles and their application for drug delivery and their antimicrobial effects
- ❖ Synthesis of **coacervates** and their interaction with polymers at the air-water interface
- ❖ **Langmuir monolayer and Thin film preparation** by Langmuir-Blodgett (LB) technique
- ❖ **Nanomaterials and nanocomposite materials:** Synthesis, characterization and applications

Technical Skills

- **Scattering:** Small Angle X-ray and Neutron (SAXS and SANS), Light scattering
- **Microscope:** TEM, AFM and SEM
- **Thermal properties:** Isothermal Titration Calorimetry
- **Interfacial properties:** Tensiometry and Langmuir Film Balance (LB)

- **Bulk properties:** Conductometry, Densimetry, Viscometry, Vapor Pressure Osmometry, etc.
- **Spectroscopy:** Micro Raman, Spectrophotometry, Fluorimetry, X-ray Fluorimetry and IR
- **Flotation:** Separation technique by foaming

Computer skills

- **Software:** Excel, Origin, Msoffice, Adobe, Fit2D, Sas View, Chemdraw, WinLB, Motic Images Advanced, DTS Nano, etc.
- **Web resources:** Sci Finder, SCOPUS, Web science, Google scholar, etc.

Orientation/ Refreshers Course/ Work Shop Attended

- ❖ **Short term training programme** on “Chemical Science: Molecules to Materials” organized by Ashutosh Mukhopadhyay School of Educational Sciences, Assam University, Silchar under the aegis of UGC-MMTTC, Assam University, Silchar, from 9-14 September, 2024.
 - ❖ **Workshop on AI for Everyone** at Department of Chemistry, The Bhawanipur Education Society College, Kolkata, April 2025, 2024.
 - ❖ **Faculty Development Programme** “on Emerging Areas in Biological and Chemical Sciences” Department of Biosciences & Department of Chemistry, JIS University, Kolkata, September 31- October 04, 21.
 - ❖ **Refresher Course:** UGC- Sponsored Refresher Course participated in the Inter-disciplinary Refresher Course on Recent Trends in Chemical Sciences at Department of Chemistry, University of Calcutta, March 16-31, 2021.
 - ❖ **Workshop on “e-Workshop on Online Teaching, Learning and Evaluation”** organized by New Alipore College and K. K. Das College, July 18-19, 2020.
 - ❖ **5 days FDP on Recent Advances in “Materials Science”** organized by Amity University, Kolkata, July 8-12, 2020.
 - ❖ **Workshop on “Maths and Computation for UG Chemistry”** organized by Bankim Sardar College, February 12-13, 2020.
 - ❖ **Workshop on MOOCs, e-content Development and Open Educational resources-UGC sponsored-** at Centre for Microprocessor Applications for Training, Education and Research, Jadavpur University from 11.02.20-17.02.20.
 - ❖ **Refresher Course:** UGC- Sponsored Refresher Course participated in the Inter-disciplinary Refresher Course on Modern Methods in Earth System Science from 18th September, 2018 to 11th October, 2018 at HRDC - Jadavpur University.
 - ❖ **Orientation Programme:** UGC- Sponsored Orientation Programme participated at HRDC-University of Calcutta from 30th January, 2018 to 26th February, 2018.
 - ❖ **Workshop on Electron Microscopes:** Instrumentation and Their Applications in Material Science & Biological Science, November 23-25, 2009.
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