

Bappaditya Naskar, M. Sc., Ph. D.

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 Séparative 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

Fellowships, and Awards

- Post Doctoral Fellowship - '**ANR Grant**' Funded by Govt. of France
- Post Doctoral Fellowship – Konan University, Japan (not availed)
- Best oral presentation award in **20th Ostwald-Colloquium** at MPI, Mainz, Germany.
- Qualified Joint CSIR – UGC for JRF-NET, Govt. of India, December 2007, in **CHEMICAL SCIENCES**
- Qualified Graduate Aptitude Test in Engineering (GATE), in 2008

Service and Outreach

- Life member of Indian Society for Surface Science and Technology (Member ID: L/M-N-20)
- Executive Committee member of Indian Society for Surface Science and Technology since January, 2020
- Member of American Chemical Society since June, 2020 (Member ID: 30263821)
- Co-ordinating Editor of J. Surf. Sci. Tech. since February, 2021
- Reviewer of various ACS, Elsevier, Wiley and MDPI journals, etc.

Teaching Interest

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

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)

- ❖ Synthesis of **coacervates** and their interaction with polymers at air-water interface
- ❖ Langmuir monolayer and Thin film preparation by Langmuir-Blodgett (LB) technique
- ❖ **Knowledge and hands-on experience in Nanomaterials:** Synthesis, characterization and application

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 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.

Research Training Experience

- **PhD student:** 1(ongoing)

Publications in International Peer Reviewed Journals (*corresponding author)

28. A. K. Rakshit*, **B. Naskar***, S. P. Moulik, Marvels of Micelles: A Physico-Chemical Discourse. *Industrial Engineering Chemistry Research* ..., **2023**, [Invited Article] (I.F. 4.326)
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]
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. 5.518)
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. 5.518)
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] (I.F. 1.972)
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. 2.262)
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. 6.633)
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. 1.169)

19. A. K. Rakshit, **B. Naskar**, S. P. Moulik*, Commemorating 75 years of Microemulsion: A Journey Forward, *Current Science* 116, **2019**, 898. [[Selected as front cover article](#)] (I.F. 1.169)
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. [[Selected as back cover article](#)] (I.F. 5.020)
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. 4.177)
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. 9.965)
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. 4.036)
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. 4.539)
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. 4.539)
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. 5.518)
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. 5.999)
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. 1.972)
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. 9.965)
8. A. Pan, S. S. Mati, **B. Naskar**, S. C. Bhattacharya, S. P. Moulik*, Self-Aggregation of MEGA-9 (N-nonayl-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. 3.466)
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. 6.633)
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. 4.331)
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. 4.331)
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. 4.331)
3. **B. Naskar**, S. Ghosh, S. Nagadome, 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. 4.331)

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. 10.723)
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. 3.119)

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/ Book Chapter

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* published by Elsevier (accepted for publication)

Selected Conference/Seminars/ Meeting Contribution

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 Pluronics 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 Dodecylsulfate (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-March 2, 2009. **Oral presentation** on Physicochemical Studies of Inulin: Assessment of its Solution Properties in Aqueous Organic Media and Salt Environment.

Orientation/ Refreshers Course/ Work Shop Attended

- ❖ **Faculty Development Programme** “on Emerging Areas in Biological and Chemical Sciences” Department of Biosciences & Department of Chemistry, JIS University, Kolkata, September 31- October 04, 2021.
- ❖ **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.

25.03.2023