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Education

B.Sc. 2009 Rabindra Mahavidyalaya, Hooghly
M.Sc. 2011 Visva-Bharati, Santiniketan
Ph.D. 2017 The University of Burdwan
Supervisor: Prof. Bidyut Saha, FRSC

Research Experience

Postdoctoral Research Associate: 2017-2019
Polymer Research Centre, Department of Chemical Sciences,
IISER Kolkata
Mentor: Prof. Priyadarsi De (Fellow of IASc)

Awards & Recognition

- Member of American Chemical Society
- Reviewer for International Journals: (1) ACS Applied Materials & Interfaces, (2) The Journal of Organic Chemistry, (3) European Journal of Organic Chemistry, (4) Journal of Applied Polymer Science, (5) RSC Advances, (6) Advanced Engineering Materials, (7) Journal of Macromolecular Science, Part A: Pure and Applied Chemistry, (8) Journal of Solution Chemistry, (9) Transition Metal Chemistry, (10) Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, (11) Journal of Coordination Chemistry, etc.
- Review Editor: Editorial Board of Polymer Chemistry Section under Frontiers in Chemistry and Frontiers in Materials (2022).
- **Young Scientist Award** (2014) from Indian Chemical Society
- NET-JRF (2012) conducted by CSIR, India
- SET-2011 (State Level Eligibility Test) conducted by WBCSC

Research publications (h index 20)

2025 – 2021

35. Unlocking the Catalytic Efficacy of Cationic–Nonionic Mixed Micellar Scaffolds for Oxidative Transformation: Influence of Nonionic Surfactant Tailoring, M. Layek, P. Karmakar, S. Kundu, Sk. M. Rahaman, A. Patra, **P. Sar**, U. Das, B. Saha* (2025) <https://doi.org/10.1021/acs.jpccb.5c02673>
34. Impact of N-heteroaromatic compounds in chromium(VI) directed oxidation of organic substrates, M. Islam*, **P. Sar*** (2025) DOI :10.1007/s11164-025-05678-2.
33. Unraveling the Catalytic Dynamics of Mixed Micellar Assemblies: A Molecular Approach to Green Organic Oxidative Transformation Reaction, P. Karmakar, S. Kundu, M. Layek, Sk M. Rahaman, K. Karmakar, B. Saha, M. Nandi, **P. Sar***, U. Mandal*, B. Saha*, (2025) 129, 4179-4189.
32. S. Kundu, M. Mitra, P. Karmakar, Sk M. Rahaman, M. Layek, **P. Sar***, B. Saha*, Unveiling the sustainable oxidation approach of homologous alcohols by DPA in CTAB micellar environment, (2025) 3, 440-449.
31. P. Karmakar, M. Layek, Sk M. Rahaman, S. Kundu, K. Karmakar, A. Patra, U. Mandal*, **P. Sar***, B. Saha*, Unlocking the Catalytic Potential of Anionic Micelles: Insights into the Ce(IV) Directed Phenylalanine Oxidation Kinetics in Asymmetric Hydrophobic Environments, (2024) 129, 238-249.
30. M. Layek, S. Kundu, P. Karmakar, Sk M. Rahaman, T. Mandal, A. Patra, A. Nandy, M. Chakravarty, **P. Sar***, B. Saha, Optimizing Homologous Alcohol Oxidation: Elucidating the Impact of Surfactant-Alcohol Hydrophobic Interaction and Micellar Surface Charge, (2024) 51, 311-330.
29. Md. Sahanawaz, M. L. Maity, K. G. Goswami, **P. Sar**, P. De, S. Bandyopadhyay*, Sequence Effects on the Thermal cis-trans Isomerization of Side Chain Stearate Containing Azobenzene Polymers, (2024) e4599.
28. M. Layek, P. Karmakar, P. Pal, Sk. Rahaman, S. Kundu, M. Mitra, N. Khatun, M. Nandi, **P. Sar***, B. Saha*, Influence of chain length and concentration-dependent morphological switching towards oxidation of aromatic alcohol in a greener envelope, (2024) 63, 1334–1348.



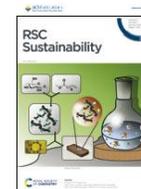
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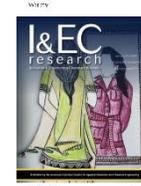
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27. A. Rakshit, S. Chowdhury, A. Acharjee, K. Mahali, R. Saha, **P. Sar***, B. Saha*, A synergistic combination of SDS and TX-100 for the catalytic oxidation of an aromatic alcohol in aqueous media, (2023) 49, 4025.
26. **P. Sar***, S. Kundu, A. Ghosh*, B. Saha*, Natural surfactant mediated bioremediation approaches for the contaminated soil, (2023) 13, 30586.
25. P. Karmakar, S. Kundu, M. Layek, K. Karmakar, M. Mitra, A. Mukherjee, D. Dhak, U. Mandal*, **P. Sar***, B. Saha*, An efficient mixed micellar strategy for the catalytic oxidation of benzyl alcohol by diperiodatoargentate (III) in aqueous media, (2023) 47, 13235.
24. S. Kundu, P. Karmakar, S. M. Rahaman, M. Mitra, S. Rajwar, S. Dhibar, M. Layek, **P. Sar***, B. Saha*, A promising mixed micellar approach to tune the oxidation of isoprenol by diperiodatoargentate (III) in aqueous media, (2023) 47, 4364.
23. B. Chowdhury, S. M. Rahaman, A. Ghosh, K. Mahali, **P. Sar***, B. Saha*, Synergistic reinforcement of CPC/TX-100 mixed micellar microenvironment for diperiodatocuprate(III) (DPC) oxidation of 1-propanol and 1,3-propanediol, (2022) 368, 120817.
22. B. Chowdhury, **P. Sar***, D. Kumar, B. Saha*, Advancement of Cu(III) and Fe(III) directed oxidative transformations: Recent impact of aqueous micellar environment, (2021) 347, 117993.



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2020 – 2016

21. **P. Sar***, B. Saha. Potential application of Micellar nanoreactor for electron transfer reactions mediated by a variety of oxidants: A review, (2020) 284, 102241
20. K. G. Goswami, S. Mete, S. S. Chaudhury, **P. Sar**, E. Ksendzov, C. D. Mukhopadhyay, S. V. Kostjuk, P. De. Self-assembly of amphiphilic copolymers with sequence-controlled alternating hydrophilic–hydrophobic pendant side chains, (2020) 2, 2035.
19. **P. Sar**, S. G. Roy, P. De, S. Ghosh. Synthesis of Glutamic Acid Derived Organogels and their Applications in Dye Removal from Aqueous Medium, (2020) 305, 1900809.



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18. **P. Sar**, A. Ghosh, A. Scarso, B. Saha. Surfactant for better tomorrow: applied aspect of surfactant aggregates from laboratory to industry, (2019) 45, 6021.



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17. **P. Sar**, S. Ghosh, Y. D. Gordievskaya, K. G. Goswami, E. U. Kramarenko, P. De. pH-Induced Amphiphilicity-Reversing Schizophrenic Aggregation by Alternating Copolymers, (2019) 52, 8346.



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16. S. Malik, A. Ghosh, **P. Sar**, M. H. Mondal, K. Mahali, B. Saha, Employment of different spectroscopic tools for the investigation of chromium (VI) oxidation of acetaldehyde in aqueous micellar medium, (2017) 129, 637.



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15. S. Malik, D. Saha, M. H. Mondal, **P. Sar**, A. Ghosh, K. Mahali, B. Saha. Micellar effect on hetero-aromatic nitrogen base promoted chromic acid oxidation of 1,3-propanediol in aqueous media at room temperature, (2017) 225, 207.



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14. **P. Sar**, A. Ghosh, S. Malik, B. Saha. Selective heteroaromatic nitrogen base promoted chromium(VI) oxidation of isomeric pentanols in aqueous micellar media at room temperature, (2016) 42, 53.



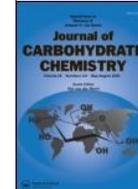
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13. S. Mandal, S. Mandal, S. K. Ghosh, **P. Sar**, A. Ghosh, R. Saha, B. Saha. A review on the advancement of ether synthesis from organic solvent to water, (2016) 6, 69605.



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12. **P. Sar**, A. Ghosh, S. Malik, B. Saha. Combined effect of promoter and surfactant on the chromium(VI) oxidation of D-ribose in aqueous media at room temperature, (2016) 35, 86.



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2015 – 2013

11. A. Ghosh, **P. Sar**, S. Malik, B. Saha. Role of surfactants on metal mediated cerium (IV) oxidation of valeraldehyde at room temperature and pressure, (2015) 211, 48.



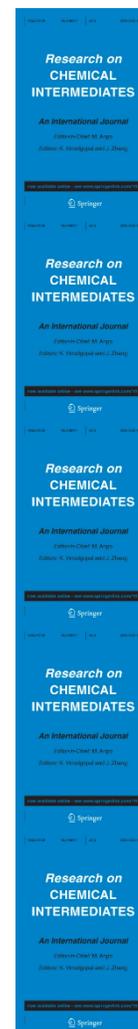
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10. A. Ghosh, P. Das, D. Saha, **P. Sar**, S. K. Ghosh, B. Saha. Rate enhancement via sodium dodecyl sulfate (SDS) encapsulation of metal-mediated cerium(IV) oxidation of D-mannitol to D-mannose at room temperature and pressure: a kinetic and mechanistic approach, (2016) 42, 2619.



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9. A. Ghosh, R. Saha, K. Mukherjee, S. K. Ghosh, **P. Sar**, S. Malik, B. Saha. Choice of suitable micellar catalyst for 2, 2'-bipyridine-promoted chromic acid oxidation of glycerol to glyceraldehyde in aqueous media at room temperature, (2015) 41, 3057.
8. **P. Sar**, A. Ghosh, S. Malik, B. Saha. Sodium dodecylsulphate-catalyzed hetero-aromatic nitrogen base-promoted chromium (VI) oxidation of 2-propenol to 2-propenal in aqueous media, (2015) 41, 10151.
7. **P. Sar**, A. Ghosh, D. Ghosh, B. Saha. Micellar catalysis of quinquivalent vanadium oxidation of methanol to formaldehyde in aqueous medium, (2015) 41, 5565.
6. **P. Sar**, A. Ghosh, B. Saha. The influence of SDS micelle on the oxidative transformation of propanol to propionaldehyde by quinquivalent vanadium in aqueous medium at room temperature, (2015) 41, 7775.
5. **P. Sar**, A. Ghosh, R. Saha, B. Saha. Micellar effect on pentavalent vanadium oxidation of formaldehyde to formic acid in aqueous acid media at room temperature, (2015) 41, 5331.
4. K. Mukherjee, A. Ghosh, R. Saha, **P. Sar**, S. Malik, B. Saha. Best combination of promoter and micellar catalyst for the rapid conversion of sorbitol to glucose, (2014) 122, 204.
3. A. Ghosh, R. Saha, K. Mukherjee, **P. Sar**, S. K. Ghosh, S. Malik, S. S. Bhattacharyya, B. Saha. Rate enhancement via micelle encapsulation for room temperature metal catalyzed Ce(IV) oxidation of p-chlorobenzaldehyde to p-chlorobenzoic acid in aqueous medium at atmospheric pressure, (2014) 190, 81.
2. R. Saha, A. Ghosh, **P. Sar**, I. Saha, S. K. Ghosh, K. Mukherjee, B. Saha. Combination of best promoter and micellar catalyst for more than kilo-fold rate acceleration in favor of chromic acid oxidation of d-galactose to d-galactonic acid in aqueous media at room temperature (2013) 116, 524.
1. A. Ghosh, R. Saha, **P. Sar**, B. Saha. Rate enhancement via micelle encapsulation for room temperature metal catalyzed Ce(IV) oxidation of formaldehyde to formic acid in aqueous medium at atmospheric pressure: A kinetic approach, (2013) 186, 122.



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