Stanford



Sabyasachi Sarkar

Postdoctoral Scholar, Biology

Bio

BIO

Sabyasachi Sarkar is a postdoctoral scholar in the Department of Biology at Stanford University, working in the laboratory of Prof. Judith Frydman. He earned his Ph.D. in Bioinorganic Chemistry from the Indian Institute of Technology Kanpur (IIT Kanpur), where his research focused on synthetic di- and multiheme systems to understand iron spin states, long-range electronic communication, redox behavior, and cooperativity in multimetallic architectures.

He subsequently pursued postdoctoral research with Prof. Judith P. Klinman at the University of California, Berkeley, investigating protein dynamics, kinetic isotope effects and hydrogen tunneling in biological systems.

Currently, in the Frydman laboratory at Stanford, his research focuses on understanding the molecular mechanisms of protein folding mediated by the eukaryotic chaperonin TRiC/CCT using biophysical methods.

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Heart Association (2026 - present)
- Member, Biophysical Society (2025 - present)
- Member, American Chemical Society (2023 - present)

STANFORD ADVISORS

- Judith Frydman, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Highly Responsive Self-Healing and Degradable Piezoelectric Soft Machines** *ADVANCED MATERIALS*
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- **Unusually Stable Synthetic Diheme Bis-Fe(IV)oxo: An Intermediate in Diheme Enzymes MauG and BthA.** *Journal of the American Chemical Society*
  Samanta, D., Sarkar, S., Singh, D., Samanta, S., Manna, S., Dubey, K. D., Dey, A., Shaik, S., Rath, S. P.
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- **Unravelling the Relaxation Pathway and Excited State Dynamics of Ruthenium(II) Polypyridyl Complexes Incorporating Phosphorus-Based Monodentate Ligands** *CHEMISTRY-A EUROPEAN JOURNAL*
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- **Unusual Stabilisation of Remarkably Bent Tetra-Cationic Tetra-radical Intermolecular Fe(III) μ-Oxo Tetranuclear Complexes** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
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- **Binuclear complexes with single M-F-M bridge (M: Fe, Mn, and Cu): A critical analysis of the impact of fluoride for isoelectronic hydroxide substitution** *COORDINATION CHEMISTRY REVIEWS*
  Sarkar, S., Khan, F., Guchhait, T., Rath, S.
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- **Cooperativity in Diiron(III)porphyrin Dication Diradical-Catalyzed Oxa-Diels-Alder Reactions: Spectroscopic and Mechanistic Insights** *ACS CATALYSIS*
  Sarkar, S., Sarkar, P., Samanta, D., Pati, S. K., Rath, S.
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- **Highly Oxidized Cobalt Porphyrin Dimer: Control of Spin Coupling via a Bridge** *INORGANIC CHEMISTRY*
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- **Long-Range Intramolecular Spin Coupling through a Redox-Active Bridge upon Stepwise Oxidations: Control and Effect of Metal Ions.** *Inorganic chemistry*
  Pandit, Y. A., Shah, S. J., Usman, M., Sarkar, S., Garribba, E., Rath, S. P.
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- **Ferromagnetic Coupling in Oxidovanadium(IV)-Porphyrin Radical Dimers** *INORGANIC CHEMISTRY*
  Singh, A., Usman, M., Sarkar, S., Sciortino, G., Kumar, D., Garribba, E., Rath, S.
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- **Stepwise oxidations of a nickel(ii)-iron(iii) heterobimetallic porphyrin dimer: structure, spectroscopic and theoretical investigation** *DALTON TRANSACTIONS*
  Kumar, A., Banerjee, S., Sarkar, S., Rath, S.
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- **Probing Bis-FeIV MauG: Isolation of Highly Reactive Radical Intermediates.** *Chemistry (Weinheim an der Bergstrasse, Germany)*
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- **Cyclic Bis-porphyrin-Based Flexible Molecular Containers: Controlling Guest Arrangements and Supramolecular Catalysis by Tuning Cavity Size** *CHEMISTRY-A EUROPEAN JOURNAL*
  Mondal, P., Sarkar, S., Rath, S.
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