Stanford

Srijit Mukherjee

Postdoctoral Scholar, Chemistry

Bio

HONORS AND AWARDS

- T-32 Biophysics Training Grant, National Institutes of Health and University of Colorado at Boulder (2018-2020)
- Graduate Teaching Award, Department of Chemistry, University of Colorado at Boulder (2017)
- Prof. SN Kaul Gold Medal, IISER Mohali (2016)
- Inspire Fellowship, Government of India, DST (2011-2016)

STANFORD ADVISORS

- Steven Boxer, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Magnetic resonance control of spin-correlated radical pair dynamics in vivo.** *Nature*
  Burd, S. C., Bagheri, N., Condon, A. F., Ingaramo, M., Mondal, S., Dowlatshahi, D. P., Summers, J. A., Mukherjee, S., York, A. G., Wakatsuki, S., Boxer, S. G., Kasevich, M.
  2026
- **Dark-State-Mediated Photobleaching in mCherry-Based Red Fluorescent Proteins.** *The journal of physical chemistry letters*
  Manna, P., Hix, M. A., Mukherjee, S., Walker, A. R., Jimenez, R.
  2026
- **Electrostatic insights into X-H•••π interactions (X = C, N, O, S) through the vibrational Stark effect**
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  CELL PRESS.2026: 341a
- **Who's really in charge? Dissecting directional electric fields in enzyme catalysis**
  Mukherjee, S., Fried, S. D. E., Mathews, I. I., Boxer, S. G.
  CELL PRESS.2026: 50a-51a
- **Interplay of electrostatics and conformational dynamics in dihydrofolate reductase catalysis**
  Fried, S. D. E., Mukherjee, S., Mathews, I. I., Boxer, S. G.
  CELL PRESS.2026: 51a
- **Magnetic-resonance control of spin-correlated radical pair dynamics in a transgenic animal**
  Bagheri, N., Burd, S. C., Condon, A. F., Ingaramo, M., Mondal, S., Dowlatshahi, D. P., Summers, J. A., Mukherjee, S., York, A. G., Wakatsuki, S., Boxer, S. G., Kasevich, M.
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- **Covalent Drug Binding in Live Cells Monitored by Mid-Infrared Quantum Cascade Laser Spectroscopy: Photoactive Yellow Protein as a Model System.** *Journal of the American Chemical Society*
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- **Electrostatic atlas of non-covalent interactions built into metal-organic frameworks.** *Nature chemistry*
  Ji, Z., Mukherjee, S., Andreo, J., Sinelshchikova, A., Peccati, F., Jiménez-Osés, G., Wuttke, S., Boxer, S. G.
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- **Covalent Drug Binding in Live Cells Monitored by Mid-IR Quantum Cascade Laser Spectroscopy: Photoactive Yellow Protein as a Model System.** *bioRxiv : the preprint server for biology*
  Mukherjee, S., Fried, S. D., Hong, N. Y., Bagheri, N., Kozuch, J., Mathews, I. I., Kirsh, J. M., Boxer, S. G.
  2025

- **Magnetic resonance control of reaction yields through genetically-encoded protein:flavin spin-correlated radicals in a live animal.** *bioRxiv : the preprint server for biology*
  Burd, S. C., Bagheri, N., Ingaramo, M., Condon, A. F., Mondal, S., Dowlatshahi, D. P., Summers, J. A., Mukherjee, S., York, A. G., Wakatsuki, S., Boxer, S. G., Kasevich, M.
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- **Detection of covalent drug binding in live cells using a quantum cascade laser and nitrile-labeled amino acids**
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- **Cartography of electric fields in enzyme catalysis**
  Mukherjee, S., Fried, S. D. E., Mao, Y., Boxer, S. G.
  CELL PRESS.2025: 372A

- **Environment- and Conformation-Induced Frequency Shifts of C-D Vibrational Stark Probes in NAD(P)H Cofactors.** *The journal of physical chemistry letters*
  Fried, S. D., Mukherjee, S., Mao, Y., Boxer, S. G.
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- **Influence of Fluorescence Lifetime Selections and Conformational Flexibility on Brightness of FusionRed Variants.** *The journal of physical chemistry letters*
  Mukherjee, S., Douglas, N., Jimenez, R.
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- **Conformational Dynamics of mCherry Variants: A Link between Side-Chain Motions and Fluorescence Brightness** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Mukherjee, S., Manna, P., Douglas, N., Chapagain, P. P., Jimenez, R.
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- **Directed Evolution of a Bright Variant of mCherry: Suppression of Nonradiative Decay by Fluorescence Lifetime Selections.** *The journal of physical chemistry. B*
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- **Characterizing dark state kinetics and single molecule fluorescence of FusionRed and FusionRed-MQ at low irradiances.** *Physical chemistry chemical physics : PCCP*
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- **Photophysical Engineering of Fluorescent Proteins: Accomplishments and Challenges of Physical Chemistry Strategies.** *The journal of physical chemistry. B*
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- **Enrichment of rare events using a multi-parameter high throughput microfluidic droplet sorter.** *Lab on a chip*
  Hung, S. T., Mukherjee, S., Jimenez, R.
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- **Fluorescence Enhancement of Tb-3(+) in the Tb3+-Trimesic Acid-Gd3+ Complex: Role of Polynuclear Structures** *CHEMISTRYSELECT*
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