

Sarbajit Banerjee, FRSC, FInstP

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(A) PROFESSIONAL PREPARATION:

St. Stephen's College, University of Delhi	Delhi, India	Chemistry	B.Sc. (Hons.), 2000
State University of New York at Stony Brook	Stony Brook, New York	Chemistry	Ph.D., August 2004
Columbia University	New York City, New York	Applied Physics	Post-doc., 2004-2007

(B) APPOINTMENTS:

2025-present: **Full Professor**, Department of Chemistry and Applied Biosciences, ETH Zürich
 2025-present: **Laboratory Head** for Laboratory for Battery Science, Paul Scherrer Institute, Switzerland
 2023-2024: **Associate Dean for Strategic Research Initiatives**, College of Arts and Science, Texas A&M University
 2022-2024: **Executive Director**, Reconfigurable Electronic Materials Inspired by Nonlinear Neuron Dynamics, a DOE Energy Frontier Research Center, Texas A&M Engineering Experiment Station
 2020-2024: **Davidson Chair in Science**, Department of Chemistry, Texas A&M University
 2020-2024: **Chancellor EDGES Fellow**, Texas A&M University System
 2017-2020: **Davidson Professor of Science**, Department of Chemistry, Texas A&M University
 2015-2024: **Professor**, Department of Materials Science and Engineering, Texas A&M University
 2014-2024: **Professor**, Department of Chemistry, Texas A&M University
 2013-2014: **Co-Director**, New York State Center of Excellence in Materials Informatics at the University at Buffalo
 2012-2014: **Associate Professor**, Department of Chemistry, University at Buffalo, State University of New York
 2007-2012: **Assistant Professor**, Department of Chemistry, University at Buffalo, State University of New York
 2004-2007: **Postdoctoral Research Scientist**, Nanoscale Science and Engineering Center and Department of Applied Physics and Applied Mathematics, Columbia University
 2000-2004: **Research Associate**, Materials Science Department (now restructured as the Condensed Matter and Materials Physics Department), Brookhaven National Laboratory

(C) SELECTED RECENT AWARDS:

Vanadium Award	Institute of Materials, Minerals, and Mining	29 June, 2023
Association of Former Students Distinguished Achievement Award in Graduate Mentoring	Association of Former Students at Texas A&M University	March 25, 2022
Edith and Peter O'Donnell Award in Science	The Academy of Medicine, Engineering, and Science of Texas	December 8, 2021
Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences	American Chemical Society	November 3, 2021
Special Creativity Extension Award	National Science Foundation	March 3, 2021
NASA Innovative Advanced Concepts (NIAC) Fellow	National Aeronautics and Space Administration	February 25, 2021
Special Creativity Extension Award	National Science Foundation	12 May 2020
Fellow of the Institute of Physics	Institute of Physics	22 December 2017
Beilby Medal and Prize <i>Awarded for work of exceptional practical significance in chemical engineering, applied materials science, energy efficiency or a related field by a researcher under the age of 40.</i>	Royal Society of Chemistry; Institute of Materials, Minerals, and Mining; Society for Chemical Industry	12 July 2016
Fellow of the Royal Society of Chemistry	Royal Society of Chemistry (UK)	29 March 2016
Rosenhain Medal and Prize	Institute of Materials, Minerals, and	1 April 2015

Awarded for contributions to materials science by a researcher under the age of 40	Mining (UK)	
Scialog Research Fellowship	Research Corporation for Science Advancement	15 May 2013
Journal of Physical Chemistry C Lectureship Award	American Chemical Society (ACS) Division of Physical Chemistry	26 February 2013
MIT Technology Review TR35 (Top 35 Innovators Under the Age of 35) Award	MIT Technology Review	21 August 2012
Cottrell Scholar Award	Research Corporation for Science Advancement	1 November 2010
ExxonMobil Solid-State Chemistry Faculty Fellowship	ACS Division of Inorganic Chemistry	1 March 2010
CAREER Award	National Science Foundation	1 July 2009

(D) SELECTED PUBLICATIONS: 270 publications total. 12 issued patents. [Complete List of Publications](#)

h-index: 66

Total citations: >16,500

i-10 index: 221

- (1) J. Ponis, N. Jerla, G. Agbaworvi, S. Beltran, N. Kumar, K. Ashen, J. Li, E. Wang, M. Smeaton, F. Jardali, S. Chakraborty, P. J. Shamberger, K. Jungjohann, C. Weiland, C. Jaye, L. Ma, D. Fischer, J. Guo,* G. Sambandamurthy,* X. Qian,* S. Banerjee,* Atomistic Origins of Conductance Switching in an ϵ -Cu_{0.9}V₂O₅ Neuromorphic Single Crystal Oscillator. *Journal of the American Chemical Society* **2024**, DOI: 10.1021/jacs.4c11968.
- (2) Y. Luo, J. V. Handy, T. Das, J. D. Ponis, R. Albers, Y.-H. Chiang, M. Pharr, B. J. Schultz, L. Gobbato, D. C. Brown, S. Chakraborty,* S. Banerjee.* Effect of Pre-Intercalation on Li-Ion Diffusion Mapped by Topochemical Single-Crystal Transformation and Operando Investigation. *Nature Materials* **2024**, 23, 960–968; DOI: 10.1038/s41563-024-01842-y.
- (3) J. V Handy, W. Zaheer, R. Albers, G. Agbaworvi, T. D Boyko, V. Bakhmoutov, N. Bhuvanesh, S. Banerjee,* Protecting Groups In Insertion Chemistry: Site-Selective Positioning Of Lithium Ions In Intercalation Hosts. *Matter* (Cell Press) **2023**, 6, 1125-1139. <https://doi.org/10.1016/j.matt.2023.01.028>
- (4) Y. Luo, S. Rezaei, D. A. Santos, Y. Zhang, J. V. Handy, L. Carrillo, B. J. Schultz, L. Gobbato, M. Pupucevski, K. Wiaderek, H. Charalambous, A. Yakovenko, M. Pharr, B.-X. Xu,* and S. Banerjee,* Cation reordering instead of phase transitions: Origins and implications of contrasting lithiation mechanisms in 1D ζ - and 2D α -V₂O₅. *Proceedings of the National Academy of Sciences of the United States of America* **2022**, 119, e2115072119.
- (5) P. Schofield, A. Bradicich, R. M Gurrola, Y. Zhang, T. D Brown, M. Pharr, P. J Shamberger,* S. Banerjee,* Harnessing the Metal–Insulator Transition of VO₂ in Neuromorphic Computing. *Advanced Materials*, **2022**, 2205294.
- (6) Y. Luo, Y. Bai, A. Mistry, Y. Zhang, D. Zhao, S. Sarkar, J. V. Handy, S. Rezaei, A. Chuang, L. Carrillo, K. Wiaderek, M. Pharr, K. Xie, P. P. Mukherjee,* B.-X. Xu,* and S. Banerjee,* Effect of Crystallite Geometries on Electrochemical Performance of Porous Intercalation Electrodes by Multiscale Operando Investigation, *Nature Materials* **2022**, 21 (2), 217-227 <https://doi.org/10.1038/s41563-021-01151-8> (featured as cover).
- (7) M. Udayakantha, J. V. Handy, R. Davidson, J. Kaur, G. Villalpando, L. Zuin, S. Chakraborty, S. Banerjee,* Halide Replacement with Complete Preservation of Crystal Lattice in Mixed-Anion Lanthanide Oxyhalides. *Angewandte Chemie International Edition* **2021**, 60, 15582-15589 DOI: 10.1002/anie.202104231.
- (8) J. V. Handy, Y. Luo, J. L. Andrews, N. Bhuvanesh, S. Banerjee,* An Atomic View of Cation Diffusion Pathways from Single-Crystal Topochemical Transformations. *Angewandte Chemie International Edition* **2020**, 59, 16385-16392, DOI: 10.1002/anie.202005513.
- (9) D. G Sellers, E. J Braham, R. Villarreal, B. Zhang, A. Parija, T. D Brown, T. Alivio, H. Clarke, L. De Jesus, L. Zuin, D. Prendergast, X. Qian,* R. Arroyave,* P. J Shamberger,* S. Banerjee,* An Atomic Hourglass and Thermometer Based on Diffusion of a Mobile Dopant in VO₂. *Journal of the American Chemical Society*, **2020**, 142, 15513–15526.
- (10) W. Zaheer, J. L. Andrews, A. Parija, F. Hyler, C. Jaye, C. Weiland, Y.-S. Yu, D. Shapiro, D. Fischer, J. Guo, J. M. Velázquez, and S. Banerjee,* Reversible Room-Temperature Fluoride-Ion Insertion in a Tunnel-Structured Transition Metal Oxide Host. *ACS Energy Letters* **2020**, 5, 2520–2526.