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(C) PROFESSIONAL HISTORY:

2022-present: **Executive Director**, Reconfigurable Electronic Materials Inspired by Nonlinear Neuron Dynamics, a DOE Energy Frontier Research Center Texas A&M Engineering Experiment Station

2020-present: **Davidson Chair in Science**, Department of Chemistry, Texas A&M University

2020-present: **Chancellor EDGES Fellow**, Texas A&M University System

2017-2020: **Davidson Professor of Science**, Department of Chemistry, Texas A&M University

2015-present: **Professor**, Department of Materials Science and Engineering, Texas A&M University

2014-present: **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, The State University of New York.

2007-2012: **Assistant Professor**, Department of Chemistry, University at Buffalo, The 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

2001-2004: **Graduate Research Assistant**, Department of Chemistry, State University of New York at Stony Brook

2000-2001: **Teaching Assistant**, Department of Chemistry, State University of New York at Stony Brook

Education

St. Stephen's College, University of Delhi	Chemistry	B.Sc. (Hons.), 2000
State University of New York at Stony Brook (Ph.D. Advisor: Prof. Stanislaus S. Wong)	Chemistry	Ph.D., August 2004
Columbia University (Advisor: Prof. Irving P. Herman)	Applied Physics & Applied Mathematics	August 2004—August 2007

Research Interests

1. Solid-state inorganic materials exhibiting unusual chemical bonding motifs and electronic instabilities
2. Spectroscopy and chemical imaging of the electronic structure of 2D materials, nanomaterials, and interfaces

3. Developing metal—organic syntheses for the rational growth of metal oxide and oxyhalide nanocrystals
4. Functional nanocomposites and thin films with an emphasis on corrosion inhibition and lightweighting

Publications

- 242)** Nicholas I Cool, Saul Perez-Beltran, Jingxiang Cheng, Natalia Rivera-Gonzalez, Daniel Bronner, Elbert Wang, Umme Zakira, Mehdi Farahbakhsh, Kai-Wei Liu, Jia-Lin Hsu, Bjorn Birgisson, Sarbajit Banerjee, Matrix transformation of lunar regolith and its use as a feedstock for additive manufacturing. *iScience* **2023**, *26*, 106382.
- 241)** Tiffany E Sill, Wasif Zaheer, Caroline G Valdes, Victor H Balcorta, Lacey Douglas, Torrick Fletcher Jr, Sarah Steiger, Neil S Spinner, Stanislav V Verkhoturov, Viswanathan Kalyanaraman, Nikhil Verghese, Matt Pharr, Kapil Sheth, Rachel D Davidson, Sarbajit Banerjee. Mechanistic origins of corrosion protection of aluminum alloys by graphene/polyetherimide nanocomposite coatings. *npj Materials Degradation* **2023**, *7*, 35. 11
- 240)** Dexin Zhao, Aniket Patel, Aaron Barbosa, Marcus H Hansen, Ainiu L Wang, Jiaqi Dong, Yuwei Zhang, Tejas Umale, Ibrahim Karaman, Patrick Shamberger, Sarbajit Banerjee, Matt Pharr, Kelvin Y Xie, A reference-area-free strain mapping method using precession electron diffraction data, *Ultramicroscopy* **2023**, *247*, 113700.
- 239)** Joseph V Handy, Wasif Zaheer, Ryan Albers, George Agbeworvi, Teak D Boyko, Vladimir Bakhmoutov, Nattamai Bhuvanesh, Sarbajit Banerjee, Protecting Groups In Insertion Chemistry: Site-Selective Positioning Of Lithium Ions In Intercalation Hosts. *Matter* **2023**, <https://doi.org/10.1016/j.matt.2023.01.028>.
- 238)** Nicholas I Cool, Randall James, Parker Schofield, Joseph V Handy, Mukul Bhatia, Sarbajit Banerjee,* Tunnel-Structured ζ -V₂O₅ as a Redox-Active Insertion Host for Hybrid Capacitive Deionization. *ACS Applied Materials & Interfaces* **2023**, *15*, 1554–1562.
- 237)** David A Santos, Shahed Rezaei, Delin Zhang, Yuting Luo, Binbin Lin, Ananya R Balakrishna, Bai-Xiang Xu, Sarbajit Banerjee,* Chemistry–mechanics–geometry coupling in positive electrode materials: a scale-bridging perspective for mitigating degradation in lithium-ion batteries through materials design. *Chemical Science* **2023**, *14*, 458-484.
- 236)** Yuwei Zhang, Cole Fincher, Rebeca M Gurrola, Wilson Serem, Dexin Zhao, Jungho Shin, Sarbajit Banerjee, Kelvin Xie, Patrick Shamberger, Matt Pharr, Strategic Texturation of VO₂ Thin Films for Tuning Mechanical, Structural, and Electronic Couplings during Metal-Insulator Transitions. *Acta Materialia* **2023**, *242*, 118478.
- 235)** Amir Mehtab, Sarbajit Banerjee, Yuanbing Mao, Tokeer Ahmad, Type-II CuFe₂O₄/Graphitic Carbon Nitride Heterojunctions for High-Efficiency Photocatalytic and Electrocatalytic Hydrogen Generation. *ACS Applied Materials & Interfaces* **2022**, *14*, 44317-44329.
- 234)** Fernando A Soto, Perla B Balbuena,* Sarbajit Banerjee, Lei Fang, Emulating synaptic behavior in surface-functionalized MoS₂ through modulation of interfacial charge transfer via external stimuli. *Physical Chemistry Chemical Physics* **2022**, *24*, 24116-24122.
- 233)** Nicholas I Cool, Carlos A Larriuz, Randall James, Jaime R Ayala, Anita, Mohammed Al-Hashimi, Sarbajit Banerjee,* Thermochromic Fenestration Elements Based on the Dispersion of Functionalized VO₂ Nanocrystals within a Polyvinyl Butyral Laminate. *ACS Engineering Au* **2022**, DOI: 10.1021/acsengineeringau.2c00027 (featured as cover).
- 232)** Parker Schofield, Adelaide Bradicich, Rebeca M Gurrola, Yuwei Zhang, Timothy D Brown, Matt Pharr, Patrick J Shamberger,* Sarbajit Banerjee,* Harnessing the Metal—Insulator Transition of VO₂ in Neuromorphic Computing. *Advanced Materials* 2205294.
- 231)** David A Santos, Justin L Andrews,* Binbin Lin, Luis R De Jesus, Yuting Luo, Savannah Pas, Michelle A Gross, Luis Carillo, Peter Stein, Yu Ding, Bai-Xiang Xu,* Sarbajit Banerjee,* Multivariate hyperspectral data analytics across length scales to probe compositional, phase, and strain heterogeneities in electrode materials. *Patterns* **2022**, 100634.

- 230) Natalia Rivera-Gonzalez, Aayushi Bajpayee, Jakob Nielsen, Umme Zakira, Wasif Zaheer, Joseph Handy, Tiffany Sill, Bjorn Birgisson, Mukul Bhatia, Sarbajit Banerjee,* Textured Ceramic Membranes for Desilting and Deoiling of Produced Water in the Permian Basin. *iScience* **2022**, *25*, 105063.
- 229) Parker Schofield, Yuting Luo, Delin Zhang, Wasif Zaheer, David Santos, George Agbeworvi, John D Ponis, Joseph V Handy, Justin L Andrews, Erick J Braham, Ananya Renuka Balakrishna,* Sarbajit Banerjee,* Doping-Induced Pre-Transformation to Extend Solid-Solution Regimes in Li-Ion Batteries. *ACS Energy Letters* **2022**, *7*, 3286–3292.
- 228) Nicholas I Cool, Diane G Sellers, Mohammed Al-Hashimi, Sarbajit Banerjee,* Near-Ambient Nanocomposite Thermochromic Fenestration Elements from Post-Encapsulation-Annealed Tungsten-Alloyed Vanadium (IV) Oxide Nanocrystals. *ACS Applied Energy Materials* **2022**, *5*, 4829-4839. 12
- 227) Parker Schofield, Erick J Braham, Baiyu Zhang, Justin L Andrews, Hayley K Drozdick, Dexin Zhao, Wasif Zaheer, Rebeca M Gurrola, Kelvin Xie, Patrick J Shamberger, Xiaofeng Qian,* Sarbajit Banerjee,* Decoupling the metal–insulator transition temperature and hysteresis of VO₂ using Ge alloying and oxygen vacancies. *Chemical Communications* **2022**, *58*, 6586-6589 (featured as the cover).
- 226) Rachel D Davidson,* Thomas E O’Loughlin, Theodore EG Alivio, Soon-Mi Lim, Sarbajit Banerjee,* Thermodynamics of Wettability: A Physical Chemistry Laboratory Experiment. *Journal of Chemical Education* **2022**, *99*, 2689–2696 (featured as the cover).
- 225) Binbin Lin, Nima Emami, David A Santos, Yuting Luo, Sarbajit Banerjee,* Bai-Xiang Xu,* A Deep Learned Nanowire Segmentation Model Using Synthetic Data Augmentation. *npj Computational Materials* **2022**, *8*, 88.
- 224) Bailey Phillips, Hengyu Lin, Peiran Wei, Chenxuan Li, Mingzhen Zhao, Joseph Handy, Sarbajit Banerjee, Hung-Jue Sue, Emily Pentzer, Mohammed Al-Hashimi, Hong-Cai Zhou, Lei Fang,* Inverse Emulsion-Crosslinked Cyclodextrin Polymer Nanoparticles for Selective Adsorption and Chemiresistive Sensing of BTEX. *Materials Today Chemistry* **2022**, *24*, 100915.
- 223) Umme Zakira, Aayushi Bajpayee, Matt Pharr, Sarbajit Banerjee, Bjorn Birgisson,* Grid Nanoindentation on Calcium Sulfoaluminate (CSA)-Kaolinite Pastes. *Construction and Building Materials* **2022**, *335*, 127523/1-10.
- 222) Joseph V Handy, Justin L Andrews, Saul Perez-Beltran, Daniel R Powell, Ryan Albers, Luisa Whittaker-Brooks, Nattamai Bhuvanesh, **Sarbajit Banerjee,*** A “Li-Eye” View of Diffusion Pathways in a 2D Intercalation Material from Topochemical Single-Crystal Transformation. *ACS Energy Letters* **2022**, *7*, 1960-1962.
- 221) Joseph V Handy, Justin L Andrews, Baiyu Zhang, Doyun Kim, Nattamai Bhuvanesh, Qing Tu, Xiaofeng Qian, and **Sarbajit Banerjee,*** Topochemical Stabilization and Single-Crystal Transformations of a Metastable 2D γ -V₂O₅ Intercalation Cathode. *Cell Reports Physical Science* **2022**, *3*, 100712/1-16.
- 220) Lacey D. Douglas, Natalia Rivera-Gonzalez, Nicholas Cool, Aayushi Bajpayee, Malsha Udayakantha, Guan-Wen Liu, Anita, **Sarbajit Banerjee,*** A Materials Science Perspective of Midstream Challenges in the Utilization of Heavy Crude Oil. *ACS Omega* **2022**, *7*, 1547–1574.
- 219) Joseph V. Handy, Wasif Zaheer, Arianna RM Rothfuss, Caitlin R McGranahan, George Agbeworvi, Justin L Andrews, Karoline E García-Pedraza, John D Ponis, Jaime R Ayala, Yu Ding, David F Watson,* **Sarbajit Banerjee,*** Lone but Not Alone: Precise Positioning of Lone Pairs for the Design of Photocatalytic Architectures. *Chemistry of Materials* **2022**, *34*, 1439-1458.
- 218) Aayushi Bajpayee, Natalia Rivera-Gonzalez, Erick J Braham, Theodore Alivio, Anita, Scheherzad Alvi, Chenxuan Li, Nicholas Cool, Mohammed Al-Hashimi, Lei Fang, **Sarbajit Banerjee,*** Multiscale Textured Mesh Substrates That Glide Alcohol Droplets and Impede Ice Nucleation. *Advanced Engineering Materials*, **2022**, *24*, 2101524, DOI: 10.1002/adem.202101524
- 217) Anita, Jeffrey Bullard, **Sarbajit Banerjee,*** Chemical Transformations of Extraterrestrial Soils. *Trends in Chemistry* **2022**, *4*, 260-263, doi.org/10.1016/j.trechm.2022.01.006.
- 216) Yuting Luo, Shahed Rezaei, David A. Santos, Yuwei Zhang, Joseph V. Handy, Luis Carrillo, Brian J. Schultz, Leonardo Gobatto, Max Pupucevski, Kamila Wiaderek, Harry Charalambous, Andrey Yakovenko, Matt Pharr, Bai-Xiang Xu,* and **Sarbajit 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.
- 215) Chenxuan Li, Brian Lee, Chenxu Wang, Aayushi Bajpayee, Lacey Douglas, Bailey Phillips, Guanghua Yu, Natalia Rivera-Gonzalez, Bo-Ji Peng, Zhiyuan Jiang, Hung-Jue Sue, **Sarbajit Banerjee,*** Lei Fang,* Photopolymerized Superhydrophobic Hybrid Coating Enabled by Dual-Purpose Tetrapodal ZnO for Liquid/Liquid Separation. *Materials Horizons* **2022**, *9*, 452-461, DOI:10.1039/D1MH01672E. 13

- 214)** Adelaide Bradicich, Heidi Clarke, Erick J. Braham, Aliya Yano, Diane Sellers, **Sarbajit Banerjee**, Patrick J. Shamberger,* Probing Relaxation Dynamics and Stepped Domain Switching in Boron-Alloyed VO₂, *Advanced Electronic Materials* **2022**, 8, 2100932 <https://doi.org/10.1002/aelm.202100932>.
- 213)** Yuting Luo, Yang Bai, Aashutosh Mistry, Yuwei Zhang, Dexin Zhao, Susmita Sarkar, Joseph V. Handy, Shahed Rezaei, Andrew Chihpin Chuang, Luis Carrillo, Kamila Wiaderek, Matt Pharr, Kelvin Xie, Partha P. Mukherjee,* Bai-Xiang Xu,* and **Sarbajit 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>
- 212)** Dhananjaya Patra, Marc Comí, Xianhe Zhang, Gururaj P Kini, Malsha Udayakantha, Alexander J Kalin, **Sarbajit Banerjee**, Lei Fang, Xugang Guo, Mohammed Al-Hashimi,* Design, Synthesis and Characterization of Fused Bithiazole and Dithiophene-Based Low Bandgap Thiénylenevinylene Copolymers. *Polymer Chemistry* **2021**, 12, 5942-5951.
- 211)** Guan-Wen Liu, Yuwei Zhang, Melonie P Thomas, Ahamed Ullah, Matt Pharr,* Beth S Guiton,* **Sarbajit Banerjee**,* Negative Thermal Expansion HfV₂O₇ Nanostructures for Alleviation of Thermal Stress in Nanocomposite Coatings. *ACS Applied Materials & Interfaces* **2021**, 13, 44723-44732.
- 210)** Wasif Zaheer, George Agbeworvi, Saul Perez-Beltran, Justin L Andrews, Yierpan Aierken, Conan Weiland, Chernoy Jaye, Young-Sang Yu, David A Shapiro, Sirine C Fakra, Daniel A Fischer, Jinghua Guo, David Prendergast, **Sarbajit Banerjee**,* Lessons Learned from FeSb₂O₄ on Stereoactive Lone Pairs as a Design Principle for Anion Insertion. *Cell Reports Physical Science* **2021**, 2, 100592/1-22.
- 209)** Malsha Udayakantha, S Sameera Perera, Rachel D Davidson, Lucia Zuin, Federico A Rabuffetti,* **Sarbajit Banerjee**,* Structure-Dependent Accessibility of Phonon-Coupled Radiative Relaxation Pathways Probed by X-ray-Excited Optical Luminescence. *Journal of Physical Chemistry Letters* **2021**, 12, 12, 11170–11175.
- 208)** David A. Santos, Manish Dixit,* Pranav Pradeep Kumar, **Sarbajit Banerjee**,* Assessing the Role of Vanadium Technologies in Decarbonizing Hard-To-Abate Sectors and Enabling The Energy Transition. *iScience (Cell Press)* **2021**, 24, 103277/1-23.
- 207)** Malsha Udayakantha, Joseph V. Handy, Rachel Davidson, Jagjit Kaur, Graciela Villalpando, Lucia Zuin, Sudip Chakraborty, **Sarbajit 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.
- 206)** Anita, Wasif Zaheer, Karan Jakhar, Dion S Antao, Subodh Gupta, Sarbajit Banerjee, Powder Bed Coating of Bitumen with Asphaltenes to Obtain Solid Prills for Midstream Transportation. *Fuel* **2021**, 302, 121093/1-8.
- 205)** Yang Bai, David A. Santos, Shahed Rezaei, Peter Stein, **Sarbajit Banerjee**,* Bai-Xiang Xu,* A Chemo-Mechanical Damage Model at Large Deformation: Numerical and Experimental Studies on Polycrystalline Energy Materials. *International Journal of Solids and Structures* **2021**, 228, 111099/1-16.
- 204)** Sai Che, Chenxuan Li, Chenxu Wang, Wasif Zaheer, Xiaozhou Ji, Bailey Phillips, Guvanch Gurbandurdyev, Jessica Glynn, Zi-Hao Guo, Mohammed Al-Hashimi, Hong-Cai Zhou, **Sarbajit Banerjee**,* and Lei Fang,* Solution-Processable Porous Graphitic Carbon from Bottom-up Synthesis and Low-Temperature Graphitization. *Chemical Science* **2021**, DOI: 10.1039/D1SC01902C.
- 203)** Marc Comí, Dhananjaya Patra, Rui Yang, Zhihui Chen, Alexandra Harbuzaru, Yiming Wubulikasimu, **Sarbajit Banerjee**, Rocío Ponce Ortiz, Yao Liu, Mohammed Al-Hashimi, Alkoxy Functionalized Benzothiadiazole Based Donor–Acceptor Conjugated Copolymers for Organic Field-Effect Transistors. *Journal of Materials Chemistry C* **2021**, 9, 5113-5123.
- 202)** Anita, Wasif Zaheer, Lacey Douglas, Diane G. Sellers, Subodh Gupta, and **Sarbajit Banerjee**,* Asphaltene Microencapsulation of Bitumen as a Means of Solid-Phase Transport. *Energy & Fuels* **2021**, 35, 8, 6576–6584. 14
- 201)** Abhishek Parija, Wasif Zaheer, Junsang Cho, Theodore E. G. Alivio, Sirine C. Fakra, Mohammed Al-Hashimi, David Prendergast,* and **Sarbajit Banerjee**,* Electronic structure modulation of MoS₂ by substitutional Se incorporation and interfacial MoO₃ hybridization: Implications of Fermi engineering for electrocatalytic hydrogen evolution and oxygen evolution. *Chemical Physics Reviews* **2021**, 2, 011401.
- 200)** Binglin Guo, Theodore E. G. Alivio, Nathan A. Fleer, Mingbao Feng, Ying Li, **Sarbajit Banerjee**,* and Virender K. Sharma,* Elucidating the Role of Dissolved Organic Matter and Sunlight in Mediating the Formation of Ag–Au Bimetallic Alloy Nanoparticles in the Aquatic Environment. *Environmental Science & Technology* **2021**, 10.1021/acs.est.0c06351
- 199)** David A. Santos, Pranav Pradeep Kumar, Manish K. Dixit, **Sarbajit Banerjee**,* Building Back Better: Lessons Learned from Sichuan Earthquake on Decarbonizing China’s Construction Industry through Microalloying. *Matter* **2021**, 4, 4-9.

- 198)** Pranav Pradeep Kumar, David A. Santos, Erick J. Braham, Diane G. Sellers, **Sarbajit Banerjee**,* and Manish K. Dixit,* Punching Above its Weight: Life Cycle Energy Accounting and Environmental Assessment of Vanadium Microalloying in Reinforcement Bar Steel. *Environmental Science: Processes & Impacts* **2021**, DOI: 10.1039/D0EM00424C.
- 197)** Beth S. Guiton,* Morgan Stefik,* Veronica Augustyn,* **Sarbajit Banerjee**,* Christopher J. Bardeen,* Bart M. Bartlett,* Jun Li,* Vilma L. López-Mejías,* Leonard R. MacGillivray,* Amanda Morris,* Efrain E. Rodriguez,* Anna Cristina S. Samia,* Haoran Sun,* Peter Sutter,* and Daniel R. Talham,* Frontiers in Hybrid and Interfacial Materials Chemistry Research, *MRS Bulletin* **2020**, *45*, 951 – 964.
- 196)** Ian Johnson, Gene Nolis, Linhua Yin, Hyun Yoo, P. Parajuli, Arijita Mukherjee, Justin L. Andrews, Mario Lopez, Robert Klie, **Sarbajit Banerjee**, Brian Ingram, Saul Lapidus, Jordi Cabana, Jawwad Darr, Enhanced charge storage of nanometric ζ -V₂O₅ in Mg electrolytes. *Nanoscale* **2020**, *12*, 22150-22160.
- 195)** David Santos, Justin Andrews, Yang Bai, Peter Stein, Yuting Luo, Yuwei Zhang, Matt Pharr, Baixiang Xu,* and **Sarbajit Banerjee**,* Bending Good Beats Breaking Bad: Phase Separation Patterns in Individual Cathode Particles upon Lithiation and Delithiation. *Materials Horizons* **2020**, *7*, 3275-3290. DOI: 10.1039/D0MH01240H
- 194)** Mario Lopez, Hyun Deog Yoo, Linhua Hu, Justin L. Andrews, **Sarbajit Banerjee**, Jordi Cabana,* Does Water Enhance Mg Intercalation in Oxides? The Case of a Tunnel Framework. *ACS Energy Letters* **2020**, *5*, 3357–3361.
- 193)** Aliya Yano, Heidi Clarke, Diane G. Sellers, Erick J. Braham, Theodore E. G. Alivio, **Sarbajit Banerjee**, Patrick J. Shamberger,* Toward High-Precision Control of Transformation Characteristics in VO₂ through Dopant Modulation of Hysteresis *Journal of Physical Chemistry C*, **2020**, *124*, 21223–21231. DOI: 10.1021/acs.jpcc.0c04952
- 192)** Justin L. Andrews, Peter Stein, David A. Santos, Cody J. Chalker, Luis R. De Jesus, Rachel D. Davidson, Michelle A. Gross, Matt Pharr, James D. Batteas, Bai-Xiang Xu,* **Sarbajit Banerjee**,* Curvature-Induced Modification of Mechano-Electrochemical Coupling and Nucleation Kinetics in a Cathode Material. *Matter* **2020**, *3*, 1754-1773. DOI: 10.1016/j.matt.2020.08.030.
- 191)** Junsang Cho, Nuwanthi S. Suwandarathne, Sara Razek, Yun-Hyuk Choi, Louis F. J. Piper*, David F. Watson*, and **Sarbajit Banerjee**,* Elucidating the Mechanistic Origins of Photocatalytic Hydrogen Evolution Mediated by MoS₂/CdS Quantum-Dot Heterostructures. *ACS Applied Materials & Interfaces* **2020**, *12* (39), 43728-43740, doi.org/10.1021/acsami.0c12583.
- 190)** Bailey Phillips, **Sarbajit Banerjee**, Xinman Tu, and Lei Fang,* Electrical Vapour Sensing with Macrocyclic Molecular Receptors. *Supramolecular Chemistry* **2020**, *32*, 165-177.
- 189)** Lacey D. Douglas, Thomas E. O’Loughlin, Cody J. Chalker, Nicholas Cool, Subodh Gupta, James D. Batteas, and **Sarbajit Banerjee**,* Three-Dimensional Inverse Opal TiO₂ Coatings to Enable the Gliding of Viscous Oils. *Energy & Fuels* **2020**, *34* (11), 13606-13613. DOI: 10.1021/acs.energyfuels.0c02031. 15
- 188)** Diane G. Sellers, Erick J. Braham, Ruben Villarreal, Baiyu Zhang, Abhishek Parija, Timothy D. Brown, Theodore E. G. Alivio, Heidi Clarke, Luis R. De Jesus, Lucia Zuin, David Prendergast, Xiaofeng Qian,* Raymundo Arroyave,* Patrick J. Shamberger,* **Sarbajit 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.
- 187)** Uyen Dang, Wasif Zaheer, Wuyue Zhou, Anna Kandel, Melissa Orr, Richard W. Schwenz, Geneva Laurita, **Sarbajit Banerjee**, Robin T. Macaluso,* Lattice Anharmonicity of Stereochemically Active Lone Pairs Controls Thermochromic Band Gap Reduction of Mixed-Anion PbVO₃Cl. *Chemistry of Materials*, **2020**, *32*, 7404–7412.
- 186)** Erick J. Braham, Rachel Davidson, Mohammed Al-Hashimi, Raymundo Arroyave,* and **Sarbajit Banerjee**,* Navigating the Design Space of Inorganic Materials Synthesis using Statistical Methods and Machine Learning. *Dalton Transactions* **2020**, *49*, 11480-11488.
- 185)** Quandong Huang, Indra Ghimire, Jingyi Yang, Nathan Fler, Kin Seng Chiang, Yingying Wang, Shoufei Gao, Pu Wang, **Sarbajit Banerjee**, and Ho Wai Howard Lee,* Optical Modulation in Hybrid Antiresonant Hollow-Core Fiber Infiltrated with Vanadium Dioxide Phase Change Nanocrystals. *Optics Letters* **2020**, *45*, 4240-4243.
- 184)** Joseph V. Handy, Yuting Luo, Justin L. Andrews, Nattamai Bhuvanesh, **Sarbajit 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.
- 183)** Wasif Zaheer, Justin L. Andrews, Abhishek Parija, Forrest P. Hyler, Cherno Jaye, Conan Weiland, Young-Sang Yu, David A. Shapiro, Daniel A. Fischer, Jinghua Guo, Jesús M. Velázquez, and **Sarbajit Banerjee**,* Reversible Room-Temperature Fluoride-Ion Insertion in a Tunnel-Structured Transition Metal Oxide Host. *ACS Energy Letters* **2020**, *5*, 2520–2526.

- 182)** Nicholas Cool, Lacey Douglas, Subodh Gupta, **Sarbajit Banerjee,*** Hierarchically Textured Oleophobic Internal Coatings that Facilitate Drag Reduction of Viscous Oils in Macroscopic Laminar Flow. *Advanced Engineering Materials* **2020**, 2000333.
- 181)** Sara A. Razek, Melissa R. Popeil, Linda Wangoh, Jatinkumar Rana, Nuwanthi Suwandarathne, Justin L. Andrews, David F. Watson, **Sarbajit Banerjee,*** Louis F. J. Piper,* Designing Catalysts for Water Splitting Based on Electronic Structure Considerations. *Electronic Structure* **2020**, 2 (2), 023001. DOI: 10.1088/2516-1075/ab7d86.
- 180)** Abhishek Parija, Joseph V. Handy, Justin L. Andrews, Jinpeng Wu, Linda Wangoh, Sujay Singh, Chris Jozwiak, Aaron Bostwick, Eli Rotenberg, Wanli Yang, Sirine C.Fakra, Mohammed Al-Hashimi, G. Sambandamurthy, Louis F.J. Piper, R. Stanley Williams,* David Prendergast,* and **Sarbajit Banerjee,*** Metal-Insulator Transitions in β' -Cu_xV₂O₅ Mediated by Polaron Oscillation and Cation Shuttling. *Matter* **2020**, 2, 1166-1186. DOI: 10.1016/j.matt.2020.01.027.
- 179)** Aayushi Bajpayee, Mehdi Farah Bakhsh, Umme Zakira, Aditi Pandey, Lena Abu Ennab, Zofia Rybkowski, Manish Kumar Dixit, Paul Arthur Schwab, Negar Kalantar and Bjorn Birgisson, **Sarbajit Banerjee,*** In Situ Resource Utilization and Reconfiguration of Soils into Construction Materials for the Additive Manufacturing of Buildings. *Frontiers in Materials* **2020**, DOI: 10.3389/fmats.2020.00052.
- 178)** Rachel Davidson, Ankit Verma, David Santos, Feng Hao, Cole D. Fincher, Dexin Zhao, Vahid Attari, Parker Schofield, Jonathan Van Buskirk, Antonio Fraticelli-Cartagena, Theodore E. G. Alivio, Raymundo Arroyave, Kelvin Xie, Matt Pharr, Partha P. Mukherjee, **Sarbajit Banerjee,*** Mapping Mechanisms and Growth Regimes of Magnesium Electrodeposition at High Current Densities. *Materials Horizons* **2020**, 7, 843-854 DOI: 10.1039/C9MH01367A
- 177)** Saurabh Chauhan, Aaron Sheng, Junsang Cho, Sara Abdel Razek, Nuwanthi Suwandarathne, Matthew Y. Sfeir, Louis F. J. Piper, **Sarbajit Banerjee,*** and David F. Watson,* Type-II Heterostructures of α -V₂O₅ Nanowires Interfaced with Cadmium Chalcogenide Quantum Dots: Programmable Energetic Offsets, Ultrafast Charge Transfer, and Photocatalytic Hydrogen Evolution. *Journal of Chemical Physics* **2019**, 151, 224702.
- 176)** Nathan A Fleer, Melonie P Thomas, Justin L Andrews, Gregory R Waetzig, Oscar Gonzalez, Guan-Wen 16 Liu, Beth S Guiton,* **Sarbajit Banerjee,*** Epitaxial Stabilization versus Interdiffusion: Synthetic Routes to Metastable Cubic HfO₂ and HfV₂O₇ from the Core-Shell Arrangement of Precursors. *Nanoscale* **2019**, 44, 21354-21363.
- 175)** Justin L Andrews, David A Santos, M Meyyappan, R Stanley Williams, **Sarbajit Banerjee,*** Building Brain-Inspired Logic Circuits from Dynamically Switchable Transition-Metal Oxides. *Trends in Chemistry* **2019**, 1, 711-726 (featured as the cover article).
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