

Partha P. Mukherjee

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(a) Professional Preparation

North Bengal University, India	Mechanical Engineering	B.S., 1997
India Institute of Technology, Kanpur, India	Mechanical Engineering	M.S., 1999
Pennsylvania State University, University Park, USA	Mechanical Engineering	Ph.D., 2007

(b) Appointments

2021 – present	Professor, School of Mechanical Engineering, Purdue University, West Lafayette, IN, USA
2017 – 2021	Associate Professor, School of Mechanical Engineering, Purdue University, USA
2017 – present	Affiliate Faculty, Energy Center, Purdue University
2017 – present	Affiliate Faculty, Computational Interdisciplinary Graduate Programs, Purdue University
2012 – 2017	Assistant Professor & Morris E. Foster Faculty Fellow, Department of Mechanical Engineering, Texas A&M University (TAMU), College Station, TX, USA
2012 – 2017	Affiliate Faculty, Institute for Scientific Computation, Texas A&M University
2014 – 2017	Affiliate Faculty, Energy Institute, Texas A&M University
2009 – 2011	Staff Scientist, Oak Ridge National Laboratory (ORNL), Oak Ridge, TN, USA
2010 – 2011	ORNL/UTK Joint Engineering Faculty, University of Tennessee – Knoxville (UTK), TN, USA
2010 – 2011	Affiliate Faculty, Mechanical Engineering, Virginia Tech, Blacksburg, VA, USA
2008 – 2009	Director’s Research Fellow, Los Alamos National Laboratory, NM, USA
2003 – 2007	Graduate Assistant, Pennsylvania State University, University Park, PA, USA
1999 – 2003	Engineer, Fluent India Pvt. Ltd. (Subsidiary of Fluent Inc./ Ansys Inc., USA), India
1997 – 1999	Research and Teaching Assistant, Indian Institute of Technology, Kanpur, India

(c) Research interest: Mesoscale physics and stochastics including electrochemical, thermal, mechanics, microstructure, and interface interactions in energy storage and conversion

(d) Publications (out of 160 journal papers; Google scholar citation: 5411; h-index: 39, i10 index: 122)

1. B. S. Vishnugopi, F. Hao, A. Verma, and P. P. Mukherjee, “Double-Edged Effect of Temperature on Lithium Dendrites,” *ACS Applied Materials and Interfaces*, **12**, 23931 (2020).
2. A. Mistry, C. Fear, R. E. Carter, C. T. Love, and P. P. Mukherjee, “Electrolyte Confinement Alters Lithium Electrodeposition,” *ACS Energy Letters*, **4**, 156 (2019).
3. F. Hao, A. Verma, and P. P. Mukherjee, “Cationic Shield Mediated Electrodeposition Stability in Metal Electrodes,” *Journal of Materials Chemistry A*, **7**, 18442 (2019).
4. D. Tewari and P. P. Mukherjee, “Mechanistic Understanding of Electrochemical Plating and Stripping of Metal Electrodes,” *Journal of Materials Chemistry A*, **7**, 4668 (2019).
5. S. P. Rangarajan, Y. Barsukov, and P. P. Mukherjee, “In Operando Signature and Quantification of Lithium Plating,” *Journal of Materials Chemistry A*, **7**, 20683 (2019).
6. F. Hao, A. Verma, and P. P. Mukherjee, “Mechanistic Insight into Dendrite-SEI Interactions for Lithium Metal Electrodes,” *Journal of Materials Chemistry A*, **6**, 19664 (2018).
7. F. Hao, A. Verma, and P. P. Mukherjee, “Mesoscale Complexations in Lithium Electrodeposition,” *ACS Applied Materials & Interfaces*, **10**, 26320 (2018).
8. A. Mistry and P. P. Mukherjee, “‘Shuttle’ in Polysulfide Shuttle: Friend or Foe?” *Journal of Physical Chemistry C*, **122**, 23845 (2018).
9. A. Mistry and P. P. Mukherjee, “Electrolyte Transport Evolution Dynamics in Lithium–Sulfur Batteries,” *Journal of Physical Chemistry C*, **122**, 18329 (2018).
10. A. Mistry and P. P. Mukherjee, “Precipitation – Microstructure Interactions in the Li-Sulfur Battery Electrode,” *Journal of Physical Chemistry C*, **121**, 26256 (2017).
11. Z. Liu and P. P. Mukherjee, “Mesoscale Elucidation of Surface Passivation in the Lithium-Sulfur Battery Cathode,” *ACS Applied Materials and Interfaces*, **9**, 5263 (2017).

12. C.-F. Chen, A. Mistry, and P. P. Mukherjee, "Probing Impedance and Microstructure Evolution in Lithium–Sulfur Battery Electrodes," *Journal of Physical Chemistry C*, **121**, 21206 (2017).
13. Z. Liu, P. Balbuena, and P. P. Mukherjee, "Revealing Charge Transport Mechanisms in Li₂S₂ for Li-Sulfur Batteries," *Journal of Physical Chemistry Letters*, **8**, 1324 (2017).
14. Z. Liu, P. Balbuena, and P. P. Mukherjee, "Hole Polaron Diffusion in the Final Discharge Product of Lithium-Sulfur Batteries," *Journal of Physical Chemistry C*, **121**, 17169 (2017).
15. C. Lopez, J. Jeevarajan, and P. P. Mukherjee, "Characterization of Lithium-Ion Battery Thermal Abuse Behavior Using Experimental and Computational Analysis," *Journal of the Electrochemical Society*, **162**, A2163 (2015).

(e) Synergistic Activities

1. Selected Presentations, Editorship, Symposium Organization:

- Invited Speaker: Electrochemical Society (ECS), American Chemical Society (ACS), The Minerals, Metals & Materials Society (TMS), Materials Research Society (MRS), American Ceramic Society, American Society for Mechanical Engineers (ASME) Meetings (2013-2020).
- Invited Speaker, *College on Multiscale Computational Modeling of Materials for Energy Applications*, The Abdus Salam International Center for Theoretical Physics (ICTP), Trieste, Italy (2016).
- Invited Speaker, *Indo-US Workshop on Multiphysics Analysis of Li-ion Batteries*, Indian Institute of Technology Bombay (IITB), Mumbai, India (2016).
- Associate Editor, ASME Journal of Electrochemical Energy Conversion and Storage (JEECS) (2017 – present)
- Guest Editor, Focus Issue – Journal of the Electrochemical Society, on "Mechano-Electrochemical Coupling in Energy Related Materials and Devices," **161**(11), (2014).
- Guest Editor, Focus Issue – JOM (TMS journal), on "Mesoscale Interplay on Li-ion Batteries and beyond" (2017).
- Guest Editor, Focus Issue – ASME Journal of Electrochemical Energy Conversion and Storage, on "Multiphysics Coupling in Energy Storage," **13**(3) (2016).
- Symposium Organizer, "Multiphysics Coupling in Energy Storage," ASME IMECE (2015).
- Symposium Organizer, "Mechano-Electrochemical Coupling in Energy Related Materials and Devices," 225th ECS Meeting (2014).

2. Symposium/Track/Session Chair: ECS; TMS; MRS; ASME meetings

3. Review Panelist/ Reviewer: NSF, DOE; ACS Petroleum Research Fund, National Research Council – Canada; (>30 journals): PNAS, Nature Communication, Joule, Chemistry of Materials, Journal of the Electrochemical Society, Electrochimica Acta, Energy and Environmental Science, Langmuir, Applied Materials and Interfaces, ACS Energy Letters, Journal of Physical Chemistry C

4. Undergraduate Education: Faculty mentor (Purdue NanoHUB Network for Computational Nanotechnology Summer Undergrad Research Program; NSF REU: Texas Center for Undergraduate Research in Energy and Propulsion); PI (TAMU Engineering Aggie Challenge program)

5. Selected Honors & Awards: Purdue College of Engineering Faculty Excellence in Early Career Research (2020); Scialog Fellow, Advanced Energy Storage, Research Corporation for Science Advancement (2017); TMS Young Leaders Professional Development Award, Functional Materials Division, The Minerals, Metals and Materials Society (TMS) (2016); Visiting Faculty Lectureship, *Multiscale Computational Modeling of Materials for Energy Applications*, International Center for Theoretical Physics (ICTP), Trieste, Italy (July, 2016); Emerging Investigator distinction: Institute of Physics journal - Materials Research Express (2016), Journal of Coordination Chemistry (2016); Engineering Genesis Award for Research, College of Engineering, Texas A&M University (TAMU) (2017); Dean of Engineering Excellence Award, College of Engineering, TAMU (2017); Morris E. Foster Faculty Fellowship, Mechanical Engineering, TAMU (2016); TEES Young Faculty Fellow Award, TAMU (2016); ECS Young Faculty Travel Grant Award, Electrochemical Society (2015); Future Leaders recognition, American Ceramic Society (2014).