Dipobrato Sarbapalli

(217) 979-1550 • dipto032@gmail.com • linkedin.com/in/dipto032/ • dipto032.github.io

EDUCATION

University of Illinois at Urbana Champaign (UIUC) *Urbana-Champaign, IL*
Doctor of Philosophy in Materials Science and Engineering, GPA: 3.90/4.00 *May 2023 (expected)*
Focus: Use of graphene to study interfaces in Li-ion and redox flow batteries

University of Illinois at Urbana Champaign (UIUC) *Urbana-Champaign, IL*
Master of Science in Civil Engineering, GPA: 4.00/4.00 *May 2018*
Focus: Nucleation seeding for controlling kinetics of inorganic aluminosilicate binder (geopolymer) reactions

HONORS

- Honorable mention, Link Foundation Energy Fellowship (9/120 applicants) (June 2021)
- Best Poster Award, SEAC Poster session, PITTCON, Chicago (Feb 2020)
- DAAD-RISE Professional Fellowship for internship with BASF at Ludwigshafen, Germany (March 2017)
- Outstanding Teaching Assistant for CEE 300 – Behavior of Materials (Spring 2018)
- Outstanding & Excellent Teaching Assistant for CEE 401 – Concrete Materials (Fall 2016, 2017)

WORK EXPERIENCE

BASF, Ludwigshafen, Germany || Superviser: Dr. Tobias Umbach *Summer 2017*

- Used atomic force microscopy to measure adhesion of paint and adhesive polymer particles to inorganic fillers like calcium carbonate, mica, silica and iron oxide
- Applied numerical models to treat experimental data on Mathematica to quantify adhesion

RESEARCH EXPERIENCE

Department of Chemistry, UIUC || Adviser: Dr. Joaquín Rodríguez-López *Fall 2018 - Present*

- Studying the role of O, N-surface modified graphene anodes on Li^+ ion intercalation using cyclic voltammetry (CV), electrochemical impedance spectroscopy (EIS), potentiostatic titration technique (PITT) and XPS
- Collaborating in the development of an *in-situ* identification of oxygen evolution from NMC and LCO Li-ion battery cathodes using Scanning Electrochemical Microscopy (SECM)
- Characterizing interfacial processes affecting redox-flow battery performance with SECM and COMSOL simulations, in collaboration with the Joint Center for Energy Storage Research (JCESR)

SELECT PUBLICATIONS

1. D. Sarbapalli, A. Mishra, and J. Rodríguez-López. "Pt/Polypyrrole Quasi-References Revisited: Robustness and Application in Electrochemical Energy Storage Research" *Anal. Chem.* **2021**. (Submitted)
2. T. S. Watkins*****, D. Sarbapalli*****, M. J. Counihan*****, A. S. Danis, J. Zhang, L. Zhang, K. R. Zavadil, and J. Rodríguez-López. *J. Mater. Chem. A* **2020**, *8*, 15734–15745. DOI: 10.1039/D0TA00836B
3. J. Hui, Z. T. Gossage, D. Sarbapalli, K. Hernández-Burgos, and J. Rodríguez-López. *Anal. Chem.* **2019**, *91*, 60–83. DOI:10.1021/acs.analchem.8b05115

SELECT SKILLS

Programming Languages & Packages: Python, Matlab, Mathematica, OriginPro, COMSOL, ImageJ, AutoCAD 2D, VESTA, CasaXPS, TOPAS, Illustrator

Materials Characterization: Scanning Electron Microscopy, X-Ray Diffraction, X-Ray Photoelectron Spectroscopy, Infrared and Raman Spectroscopy, Isothermal Calorimetry, Atomic Force Microscopy

Google Scholar: https://bit.ly/3c9oQqC List of Publications