

FALL 2023 PREM-MRSEC SEMINAR



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The University of
Texas at Austin
Center for
Dynamics and
Control of Materials



How Electrolyte Composition Influences Electrocatalytic Water Splitting Activity

Jay Bender

The University of Texas at Austin

Friday, October 27, 2023 @ 1:00-2:00 PM CST

ALKEK 441A at Texas State University

Connect with me:



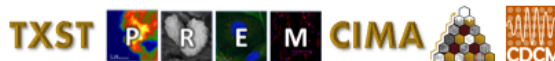
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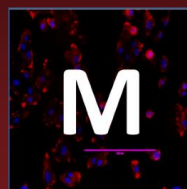
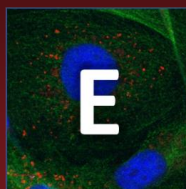
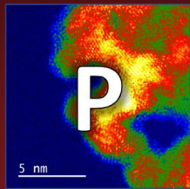
SEMINAR ABSTRACT: Electrocatalytic water splitting is a promising avenue to store intermittent renewable electricity as chemical bonds in hydrogen and oxygen molecules. Understanding the activity of electrocatalysts has traditionally been based on an analysis of the interactions between an electrode surface and adsorbed reaction intermediates. However, recent work has identified that the supporting electrolyte surrounding catalyst active sites can have a significant influence on surface chemistry. The pH of the electrolyte and presence of different electrolyte ions can strongly impact experimental reaction rates and mechanisms, but a comprehensive understanding of this phenomena is lacking. Here, I will discuss my results of combined experimental and computational studies on how pH and alkali metal cations influence the experimental reaction rates and mechanisms for the hydrogen evolution reaction and oxygen reduction reaction. These findings may help broaden our understanding of catalysis in complex media and provide insights for optimizing catalysis beyond the active site.

SPEAKER BIOGRAPHY: Jay Bender was born just outside of Boulder, Colorado. He completed his B.S. degree in Chemical & Biological Engineering at Cornell University. Currently, he is in his fourth year of the Ph.D. program in the McKetta Department of Chemical Engineering at The University of Texas at Austin under the guidance of Professors Joaquin Resasco and Delia Milliron. Jay is a recipient of UT Austin's Harry P. Whitworth Endowed Graduate Fellowship in Chemical Engineering and the NSF GRFP.

Sponsor / Contact: Mariah Gutierrez (meg246@txstate.edu)

*A Partnership Between Texas State University
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Fall 2023 PREM-MRSEC Seminar



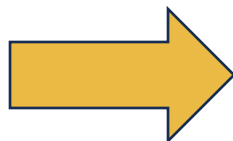
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Fall Seminar: **Friday, October 27**

Jay T. Bender, graduate student in Milliron Lab, collaborating with Rhodes Lab

Start Time	Description
11:30 am	Lunch at Pie Society 700 N Lbj Dr Ste 107, www.piesmtx.com
1:00 pm	MRSEC Seminar in ALKEK 441A [45 min presentation + 10-15 min Q&A]
2:00 pm	Lab tour of Rhodes Lab for speaker and collaborators
3:00 pm	Departure

Register Here



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