The obvious facts and deceptions of photoredox reactions

Seminar

Monday,
April 22, 2024

3:00 – 4:00 p.m.

Beaupre Center,
Room 105

Photoredox catalysis is transforming modern synthetic chemistry. Expensive, hard to handle stoichiometric reagents can be replaced by short-lived excited states using a visible light absorbing photocatalyst. While the scope of photoredox methods has grown at an exceptional pace, mechanistic and kinetic understanding has lagged behind. An overarching goal of research in the Swierk group is to provide a solid mechanistic foundation for reactions that are successful but poorly understood. This talk will describe how a combination of transient absorption spectroscopy, electrochemical methods, steady state photochemical measurements, and kinetic modeling can be used to map out the reaction mechanisms and kinetics of photoredox reactions, using prototypical photoredox reactions as examples. The importance of quantum yield and, by extension mechanistic studies, will be discussed and highlighted as key criteria for translating photoredox catalysis to scale.

John Swierk
Assistant Professor
Department of Chemistry
Binghamton University

THE UNIVERSITY OF RHODE ISLAND

Department of Chemistry

Spring 2024 Seminar Series

Host: **Dugan Hayes**
Associate Professor
dugan@uri.edu
401-874-5516 (office)
617-785-4633 (mobile)