

## 2021-2022 POCC Lecture Series

February 24, 2022, 7:30 PM

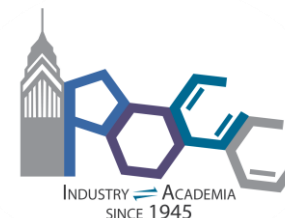
*Virtual reception to start prior to the seminar at 7 PM*

Prof. Song Lin  
Cornell University

*Amping Up Organic Synthesis with Electrochemistry*

Virtual Seminar by Zoom ([LINK](#))

The Philadelphia Organic  
Chemist's Club



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**Abstract:** Owing to its many distinct characteristics, electrochemistry represents an attractive approach to discovering new reactions and meeting the prevailing trends in organic synthesis. In particular, electrocatalysis—a process that integrates electrochemistry and small-molecule catalysis—has the potential to substantially improve the scope of synthetic electrochemistry and provide a wide range of useful transformations. In the past few years, we developed a new catalytic approach that combines electrochemistry and redox-metal catalysis for the functionalization of alkenes. This talk details our design principle underpinning the development of electrocatalytic alkene difunctionalization and hydrofunctionalization with a particular emphasis on enantioselective electrocatalysis. In addition, our recent forays into electrophotocatalysis will be discussed, in which we harness the power of both electricity and light to access catalytic species with exceptionally high oxidizing or reducing potentials. Finally, the application of deep reduction electrochemistry in the context of alkene functionalization and cross coupling reactions will be discussed, wherein the combination of electrochemistry and physical organic chemistry principles leads to previous challenging organic transformations.

**Bio:** Song Lin grew up in Tianjin, China. He obtained his B.S. degree from Peking University in 2008, where he carried out undergraduate research with Zhangjie Shi. In 2008, he embarked his graduate studies at Harvard University working under the direction of Eric Jacobsen on organocatalysis. Song then carried out postdoctoral studies with Chris Chang at UC Berkeley on electrocatalytic CO<sub>2</sub> reduction. In the summer of 2016, Song moved to Ithaca to start his independent career at Cornell University, where he is currently an Associate Professor. Song has received several early career awards, including Alfred P. Sloan Fellowship, Cottrell Scholar Award, ONR Young Investigator Award, Lilly Research Award, Camille Dreyfus Teacher-Scholar Award, NSF CAREER Award, and MIT Technology Review Innovators Under 35. He has served on the Early Career Advisory Board of several journals including ACS Catalysis and Chemistry—A European Journal and is currently Vice Chair of the Division of Organic and Biological Electrochemistry at the Electrochemical Society.