



2018–2019 POCC Lecture Series

January 31, 2019, 7:30 PM

6:30 reception in the Nobel Hall

Women in Chemistry Lecture at the POCC

Sponsored by Merck

Prof. Tianning Diao

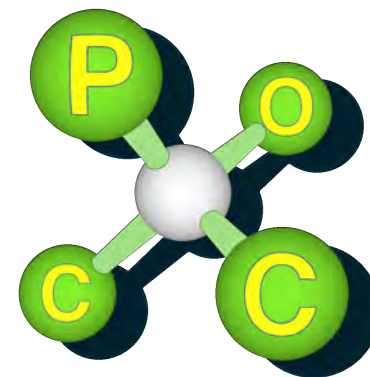
New York University

*Stereoselective Alkene Carbofunctionalization
via Radical Pathways*

Carolyn Hoff Lynch Lecture Hall

Chemistry Building, University of Pennsylvania

The Philadelphia
Organic Chemist's
Club



POCClub.org

Tianning Diao is an Assistant Professor of Chemistry at New York University (NYU). She received her Ph.D. in Chemistry from the University of Wisconsin–Madison in 2012 under the supervision of Prof. Shannon Stahl. After conducting her postdoctoral research with Prof. Paul Chirik at Princeton University, she joined the faculty of NYU in 2014. Her group addresses challenges in organic synthesis and sustainable energy research by developing new catalytic reactions. Rational catalyst design is based on a fundamental understanding of reaction mechanisms. .

Abstract: Alkenes are versatile functional groups that are employed in some of the most successful asymmetric catalytic transformations. We develop enantioselective 1,2-dicarbofunctionalization and hydrofunctionalization reactions of alkenes to access molecules with intricate substitution patterns while introducing stereocenters. We demonstrate that the new methods can be readily applied to prepare molecules with important bio-activity, such as α,α,β -triarylated ethane scaffolds. The use of reducing conditions with alkyl and aryl halides as the coupling partners avoids stoichiometric organometallic reagents and tolerates a broad range of functional groups. Mechanistic studies reveal that the use of Ni catalysts initiates radical formation and leads to unconventional enantio-determining steps..