DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE
SEMINAR SERIES
SPRING 2022

DATE: WEDNESDAY, MARCH 23, 2022

LOCATION:
WEBEX
https://njit.webex.com/njit/j.php?MTID=ma36b5af243ef3dd95226eac2f4812268

TIME: 1:00PM-2:20PM

GUEST SPEAKER

Dr. Gregory C. Fu
Department of Chemistry and Chemical Engineering,
California Institute of Technology
Pasadena, CA

TOPIC

Nucleophilic Substitution Reactions:
A Radical Alternative to S_N1 and S_N2 Reactions

ABSTRACT

Classical methods for achieving nucleophilic substitutions of alkyl electrophiles (S_N1 and S_N2) have limited scope and are not generally amenable to enantioselective variants that employ readily available racemic electrophiles. In this presentation, I will describe how the combination of radical chemistry and transition-metal catalysis has opened the door to addressing the challenges of reactivity and of enantioselectivity in nucleophilic substitution reactions of secondary and tertiary alkyl electrophiles.

BIO

Prof. Greg Fu received a B.S. degree in 1985 from MIT, where he worked in the laboratory of Prof. K. Barry Sharpless. After earning a Ph.D. from Harvard in 1991 under the guidance of Prof. David A. Evans, Prof. Fu spent two years as a postdoctoral fellow with Prof. Robert H. Grubbs at Caltech. In 1993, he returned to MIT, where he served as a member of the faculty from 1993–2012. In 2012, he was appointed the Altair Professor of Chemistry at Caltech. Prof. Fu is currently the Norman Chandler Professor of Chemistry at Caltech.

The current research interests of the Fu laboratory include metal-catalyzed coupling reactions and the design of chiral catalysts. In particular, the group is focused on the development of nickel-catalyzed enantioselective cross-couplings of alkyl electrophiles and on photoinduced, copper-catalyzed carbon–heteroatom bond-forming reactions (collaboration with the laboratory of Prof. Jonas Peters).

Prof. Fu received the Corey Award of the American Chemical Society (ACS) in 2004, the Mukaiyama Award of the Society of Synthetic Organic Chemistry of Japan in 2006, the Award for Creative Work in Synthetic Organic Chemistry of the ACS in 2012, and the H. C. Brown Award of the ACS in 2018. He is a member of the American Academy of Arts and Sciences (2007) and of the National Academy of Sciences (2014).

Seminar Coordinator:
Dr. Genoa Warner – grw4@njit.edu
Dr. Amir Varkouhi - amir.k.varkouhi@njit.edu