ICReDD International Seminar Series

Prof. Dr. Robert Phipps (University of Cambridge/United Kingdom)

New Catalysts and Strategies for Enantioselective Hydrogen Atom Transfer



Place: 2F Seminar Room,
Frontier Research in Applied Sciences Building,
Faculty of Engineering, Hokkaido University

Time: Friday, 27 November 2026
16:30-18:00

Abstract: Hydrogen Atom Transfer is an important elementary chemical process and is utilised extensively in the design of methodology based on radical mechanism, but it is still very difficult to carry out in an enantioselective manner. We have developed catalysts, readily derived from the Cinchona alkaloid family of natural products, which can achieve enantioselectivity during hydrogen atom abstraction by virtue of their privileged chiral amine structure. The catalyst, following single-electron oxidation, can abstract hydrogen atoms adjacent to alcohols and promote a variety of enantioselective radical reactions involving alcohols, including desymmetrisation, deracemization and descrambling of isomeric diol mixtures. The lecture will discuss these advances and other work related to enantioselective radical chemistry.

A seminar organized by the
Ito Group (WPI-ICReDD, Hokkaido University)