2025-1학기

화학과 Colloquium Seminar

Asymmetric Catalytic Reactions for the Synthesis of Organic Material

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○ **일시 : 2025. 05. 29. (목) 16:00**

○ **장소 : 5호관 506호**

○ **초록**

The synthesis of useful organic materials using catalysts is a pivotal area of research in organic chemistry and materials science. Catalysts, both homogeneous and heterogeneous, play crucial roles in enhancing the efficiency and selectivity of chemical reactions, leading to more sustainable and economical processes.
Our group has developed prolinol derived chiral oxazaborolidinium ion (COBI) as a Lewis acid. They have been proven as effective catalysts for various asymmetric reactions with diazo compounds. Especially, nucleophilic 1,4-addition of diazo compounds and chemoselective ring-closure afforded an efficient approach to cyclopropanes; and their tandem rearrangements provided four- five and seven-membered cyclic compounds with excellent stereoselectivity. Recently, we applied this COBI to visible-light photoredox initiated radical 1,2-addition for the synthesis of β-amino alcohol derivatives. We also developed a series of novel L-proline derived amine bifunctional organocatalysts (PU and PHU), which were successfully applied to the asymmetric Michael addition reactions of β-nitroolefins. In this talk, our recent endeavors of organocatalytic reactions will be presented.

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