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天然产物全合成与创新药物研究重庆市重点实验室学术报告

第三百九十八讲

报告题目： **“Escape from Flatland”: Lewis Acid-Catalyzed Reactions of Bicyclo[1.1.0]butanes (BCBs)**

报 告 人： **Akkattu T. Biju** 教授（Department of Organic Chemistry, Indian Institute of Science）

主 持 人： 张敏 教授

时　　间： **2025 年 11 月 4 日（周二）15：00**

地　　点： 药学院学术报告厅

报告人简介：

A. T. Biju received his M. Sc. from Sacred Heart College Thevara (affiliated to MG University, Kerala, India) and Ph.D. under the guidance of late Dr. Vijay Nair at the CSIR-NIIST (Formerly RRL), Trivandrum, India. Subsequently, he has been a post-doctoral fellow with Prof. Tien-Yau Luh at the National Taiwan University, Taipei and an Alexander von Humboldt fellow with Prof. Frank Glorius at the Westfälische Wilhelms-Universität Münster, Germany. In June 2011, he began his independent research career at the CSIR-National Chemical Laboratory, Pune. In June 2017, he moved to the Department of Organic Chemistry, Indian Institute of Science, Bangalore, where he is a professor presently. His research focuses on developing strategies using N-heterocyclic carbene (NHC) organocatalysis, and strain-release driven reactions of arynes, donor–acceptor cyclopropanes and bicyclobutanes.

报告简介：

The versatile reactivity of bicyclo[1.1.0]butanes (BCBs) makes them an attractive choice for synthesizing decorated cyclobutanes or functionalized bicyclic frameworks.[1] In this context, we have recently demonstrated the nucleophilic reactivity of BCBs in Lewis acid-catalyzed highly diastereoselective ring-opening reactions with naphthols.[2] Moreover, BCBs were also effectively utilized in ene reactions: in one instance, BCBs act as the ene component when reacting with in situ generated benzynes,[3] while in another case, they function as enophiles under Lewis acid catalysis with thioindolinones.[4] Additionally, the synthesis of oxabicyclo[4.1.1]octanes via Lewis acid-catalyzed (4+3) annulation with *para*-quinonemethides has also been realized.[5] Further, the Lewis acid-catalyzed reaction of BCBs with ynamides and isatogens has also been developed recently.[6,7] Finally, the use of HFIP to activate BCB for (3+3) annulation, and related reactions has been realized recently.[8-10] The construction of these highly decorated cyclic frameworks, along with the diverse reactivity patterns of BCBs, will be presented.