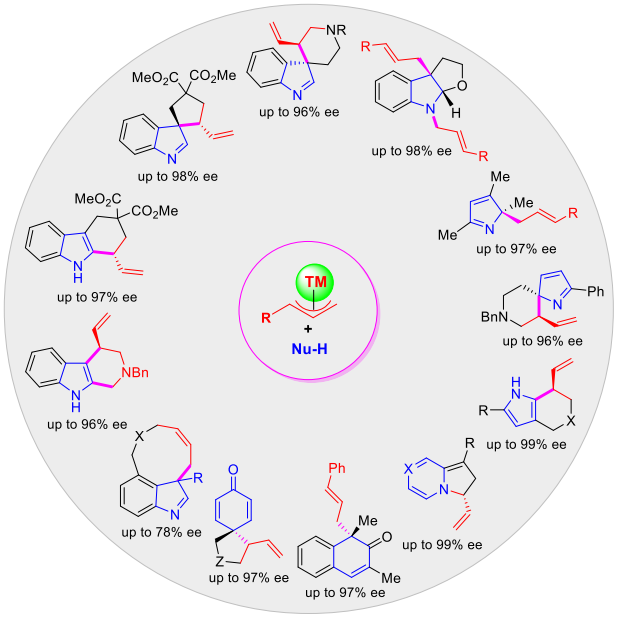
Recent Progress on Catalytic Asymmetric Dearomatization Reactions

Shu-Li You

State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences
345 Lingling Lu, Shanghai 200032, China
E-mail: slyou@sioc.ac.cn

Dearomatization reactions are widely recognized as powerful methods for the synthesis of highly functionalized three-dimensional structures from simple planar aromatic compounds. Among those, catalytic asymmetric dearomatization (CADA) reactions are very attractive due to the abundance and ready availability of aromatic compounds and the direct access to enantiopure polycycles and spirocycles offered by them. That latter are frequently the key motifs in biologically active natural products and pharmaceuticals. However, due to the extra stability of "aromaticity" of the arenes, their dearomatization reactions with good enantioselective control has been a great challenge. In this talk, we present our recent results toward the development of catalytic asymmetric dearomatization reactions. The dearomatization reactions of indoles, pyrroles, phenols, naphthols, and pyridines have been achieved, affording various highly functionalized heterocycles bearing all-carbon quaternary chiral centers in most of the cases. These results provide not only the efficient synthesis of highly enantioenriched spiro- or polycycles, but also a novel concept in asymmetric catalysis.



References:

1. You, S.-L. (**2016**) *Asymmetric Dearomatization Reactions*, Wiley-VCH.

CURRICULUM VITAE – SHU-LI YOU

PERSONAL

Date & Place of Birth	April, 1975, Henan, China
Work Address	State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences 345 Lingling Lu, Shanghai 200032, China
Telephone	+86 21 54925085
Fax	+86 21 54925087
E-mail:	slyou@sioc.ac.cn
Home Page:	http://shuliyou.sioc.ac.cn

EDUCATION

B.Sc.	Nankai University, 1992-1996
Ph.D.	Shanghai Institute of Organic Chemistry, 1996-2001
Postdoctoral Fellow	The Scripps Research Institute, 2001-2004

ACADEMIC CAREER

PI	Genomics Institute of the Novartis Research Foundation, 2004-2006
Professor	State Key Laboratory of Organometallic Chemistry, SIOC, 2006-present

QUALIFICATIONS AND AWARDS

(1) AstraZeneca Excellence in Chemistry Award, **2011**
(2) Chinese Academy of Sciences Young Scientist Award, **2014**
(3) Roche Chinese Young Investigator Award, **2014**
(4) The Chinese Chemical Society Young Chiral Chemistry Award, **2014**
(5) WuXi PharmaTech Life Science and Chemistry Award, **2014**
(6) RSC Merck Award, **2015**
(7) Ho Leung Ho Lee Foundation Prize for Scientific and Technological Innovation, **2016**
(8) 2017/2018 Novartis Chemistry Lectureship, **2017**

RESEARCH INTERESTS

1) Asymmetric catalysis
2) Methodology for organic synthesis
3) Synthesis of biologically active compounds