

## New Adventures in Synthesis and Application of Silicon-Stereogenic Silanes

何川，南方科技大学化学系，副教授

2008 年获武汉大学学士学位; 2013 年获武汉大学博士学位 (导师: 雷爱文教授); 2013-2017 年在剑桥大学从事博士后研究 (Marie Curie Fellowship, 合作导师: Matthew Gaunt 教授); 2018 年至今在南方科技大学化学系工作, 独立 PI。国家特聘青年专家、国家优秀青年基金获得者、广东省珠江青年拔尖人才、深圳市海外高层次人才、深圳市优秀科技创新人才“杰青项目”获得者。2021 年获 Thieme Chemistry Journals Award 奖; 2022 年获南科大“年度青年教授奖”和“校长青年科研奖”等。独立工作以来, 研究兴趣主要集中在手性有机硅/硼化学, 电催化杂原子化学, 手性有机功能材料等。作为通讯作者, 南科大第一单位, 在 *Nat. Synth.*, *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Nat. Commun.*, *Chem* 等期刊发表 SCI 论文 30 余篇, 专利 10 余项。

### ABSTRACT

My independent research focuses on chiral organosilicon and chiral organoboron chemistry, particularly aiming to develop new synthetic methods to expedite the syntheses of silicon-stereogenic silanes and boron-stereogenic compounds with high efficiency and selectivity, and to explore their applications in asymmetric catalysis, chiral materials, and chiral bio-active molecules.

During the last five years, we have developed a series of Catalytic Asymmetric Dehydrogenative Coupling reactions for the synthesis of a wide range of Si-stereogenic silanes (Si-CADC) with high efficiency, high atomic economy, high enantioselectivity, and good structural diversity. This general Si-CADC strategy unlocks a facile platform for diverse Si-stereogenic silanes, that would find various applications in many areas.