K. LI, M.-L. LI, Q. ZHANG, S.-F. ZHU*, Q.-L. ZHOU* (NANKAI UNIVERSITY AND THE COLLABORATIVE INNOVATION CENTER OF CHEMICAL SCIENCE AND ENGINEERING, TIANJIN, P. R. OF CHINA)

Highly Enantioselective Nickel-Catalyzed Intramolecular Hydroalkenylation of N- and O-Tethered 1,6-Dienes to Form Six-Membered Heterocycles

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**Category**

**Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions**

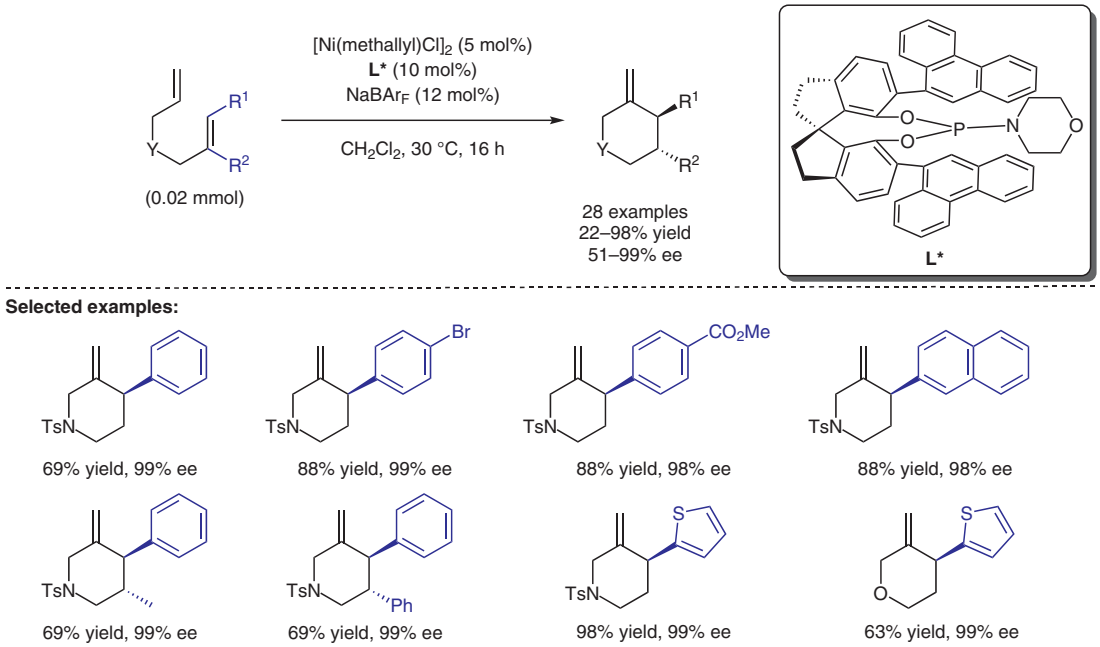
**Key words**

**nickel catalysis**

**hydroalkenylation**

**piperidines**

# Asymmetric Nickel-Catalyzed Intramolecular Hydroalkenylation




**Significance:** Nickel catalysis has been explored in recent years as a cost-effective alternative to palladium. Zhu, Zhou, and co-workers report the enantioselective nickel-catalyzed isomerizations of dienes to yield chiral piperidines or tetrahydropyrans, which are found in a number of natural products and drug structures.

**Comment:** The reaction was proposed to involve a nickel-hydride intermediate, which was generated through β-hydride elimination of the alkyl nickel species. The approach was successful with a variety of substituents on the olefin, and all the reactions proceeded with high enantioselectivities.

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