

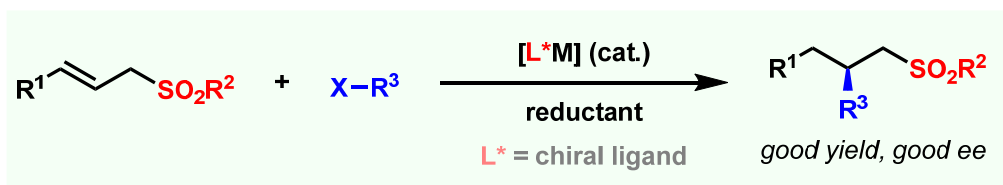
# ENANTIOSELECTIVE SYNTHESIS OF CHIRAL SULFONES BY BASE METAL-CATALYZED ASYMMETRIC CROSS-COUPLING REACTION

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Chiral sulfones are present in, and can be used as synthetic intermediates for the preparation of, many biologically active compounds and natural products.<sup>1</sup> The synthesis of chiral sulfones has attracted increased attention due to their utility as intermediates. Previous methods for the synthesis of chiral sulfones have included asymmetric arylations/alkenylations of  $\alpha$ -bromosulfones, rhodium- and organo-catalyzed asymmetric conjugate addition to unsaturated sulfones, asymmetric radical additions, and asymmetric conjugate reduction of prochiral unsaturated sulfones. Among the reported methods, metal-catalyzed asymmetric cross coupling of prochiral sulfones is of interest as one of the most straightforward approaches for chiral sulfone synthesis. However, only a few efficient catalyst systems for the preparation of chiral sulfones have been reported so far.<sup>2</sup>

Herein we describe our development of an enantioselective synthesis of chiral sulfones from readily available sulfone-derived olefins by base metal catalysis. The process enjoys mild conditions, general scope, broad functional group compatibility. The details of this reaction will be presented.



[1] Trost, B. M. Organosulfons as synthetic building blocks. *Bull. Chem. Soc. Jpn.* **1988**, *61*, 107.

[2] Choi, J.; Martín-Gago, P.; Fu, G. C. *J. Am. Chem. Soc.* **2014**, *136*, 12161.