

REMOTE ENANTIOCONTROL WITH 1-AZAHELICENES Norito Takenaka, University of Miami

An essential aim in the design of chiral catalysts is to create a well-differentiated chiral environment in the vicinity of the reaction site. However, each chirality type (central, axial, planar, and helical)¹ has its inherent structural features and thus provides unique synthetic accessibilities to catalysts, leading to different approaches in the method development. We were intrigued by the inherently chiral framework (π -wall) of helicene, and were able to demonstrate its effectiveness in the context of asymmetric organocatalysis,^{2,3} details of which will be discussed. While most of organocatalysts available today mimic an enzyme in terms of simultaneous multi-functional activations, our helicene-derived catalysts mimic the exceedingly large steric screening effect of an enzyme with rigid, yet tunable, stereochemistry.