Asymmetric Brønsted Acid Catalysis: Acetals & Confined Catalysts

Asymmetric Brønsted acid catalysis, in particular with chiral phosphoric acid type catalysts, is one of the most successful fields of organocatalysis.\textsuperscript{1,2} We present a rational design and development of confined chiral acids featuring extremely tight chiral pockets, and demonstrate their application in asymmetric catalysis.\textsuperscript{3} These catalysts are designed to tackle current challenges with reactions that include transitions states of small volume and/or loosely organized transition states. The development of several acid catalyzed reactions for asymmetric synthesis of acetals will be described.