

Designer Acids for Asymmetric Synthesis

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Lewis and Brønsted acids can be utilized as more effective tool for chemical reactions by sophisticated engineering (Designer acids). Needless to say, the ultimate goal of such “designer acids” is to achieve high reactivity, selectivity, and versatility. Yet, the full potential of acid catalysts is not realized. One possible solution to capture such abilities may be to apply “combined acids system” to the catalyst design. Particularly, the concept of combined acids, which can be classified into Brønsted acid assisted Lewis acid (BLA), Lewis acid assisted Lewis acid (LLA), Lewis acid assisted Brønsted acid (LBA), and Brønsted acid assisted Brønsted acid (BBA), will be very useful tool for the design of asymmetric catalysis, because such combined acids will bring out their inherent reactivity by associative interaction, and also more organized structure, which allows to secure the effective asymmetric environment.

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