

## **Asymmetric Counteranion Directed Catalysis (ACDC): A General Approach to Enantioselective Synthesis**

Benjamin List, Max-Planck-Institut für Kohlenforschung,  
Mülheim an der Ruhr, Germany  
list@mpi-muelheim.mpg.de

Most chemical reactions proceed via charged intermediates or transition states. Such “polar reactions” can be influenced by the counterion, especially if conducted in organic solvents, where ion pairs are inefficiently separated by the solvent. Although asymmetric catalytic transformations involving anionic intermediates with chiral, cationic catalysts have been realized, analogous versions of inverted polarity with reasonable enantioselectivity, despite attempts, only recently became a reality. In my lecture I will present the development of this concept, which is termed asymmetric counteranion-directed catalysis (ACDC) and illustrate its generality with examples from organocatalysis, transition metal catalysis, and Lewis acid catalysis.