Enantioselective Catalysis in the Excited State

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The creation of chirality is one of the most fundamental challenges in synthetic organic chemistry. Our group has worked for some time on enantioselective catalytic photochemical reactions based on triplet energy transfer[1,2] and on chromophore activation.[3,4] The first approach is based on a triplet energy transfer by hydrogen-bonding chiral catalysts, which in turn are derived from a previously described template. The second approach relies on the use of Brønsted or Lewis acids, which change the photophysical properties of the chromophore and ideally allow for a selective excitation in the chiral environment which they provide. The presentation provides a summary of our key findings and discusses in detail the latest results in the area of photochemical deracemization.[5,6]

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