

Organocatalytic Strategies for the Synthesis of Organophosphorus compounds

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Our efforts to apply organocatalytic strategies to the synthesis of organophosphorus compounds will be described. We have investigated the use of enantiopure organocatalysts for the synthesis of P-stereogenic compounds. Such compounds are of interest as catalysts and ligands for asymmetric catalysis, and in medicinal chemistry.

We have synthesized a range of hydrogen-bonding catalysts,[1] including ureas, thioureas and squaramides and tested their capacity to act in various asymmetric manifolds, including Arbuzov-type reactions. Some excellent levels of enantioselectivity have been achieved using an anion-binding strategy.[2]

References

[1] A. G. Doyle, E. N. Jacobsen, *Chem. Rev.* **2007**, *107*, 5713-5743.

[2] K. Brak, E. N. Jacobsen, *Angew. Chem. Int. Ed.*, **2013**, *52*, 534-561.