

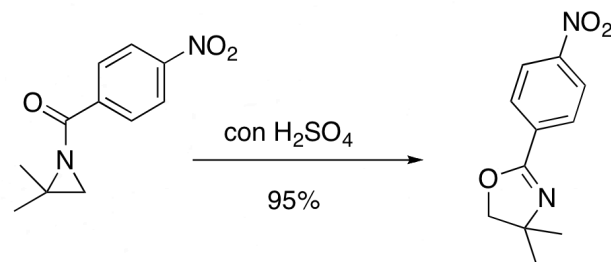
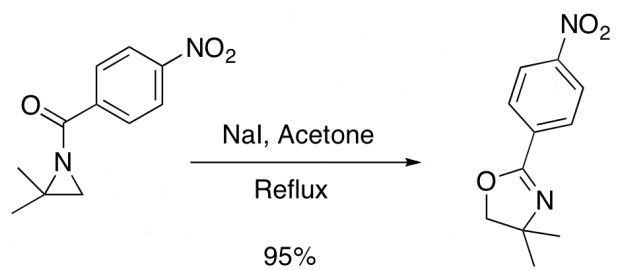
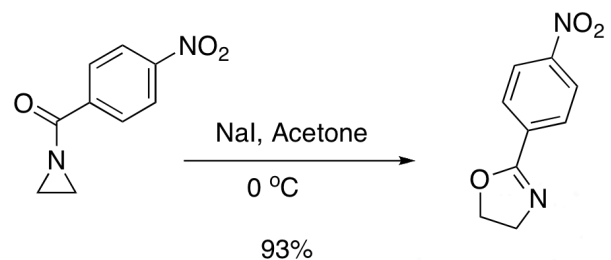
Heine reaction

Li HUANG
April 24, 2009

The chemist

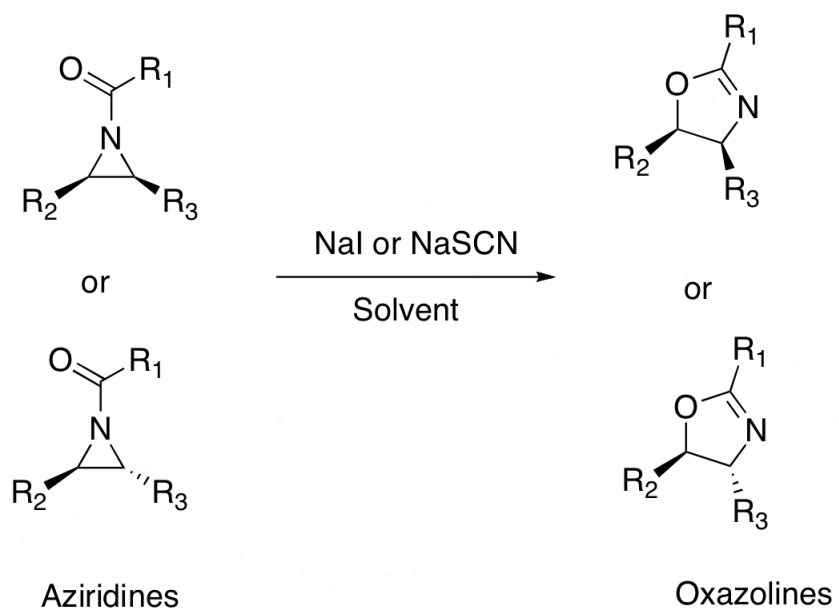
- Picture not found
- Worked in Bucknell University
- He had a lot of students

The First Time to be reported

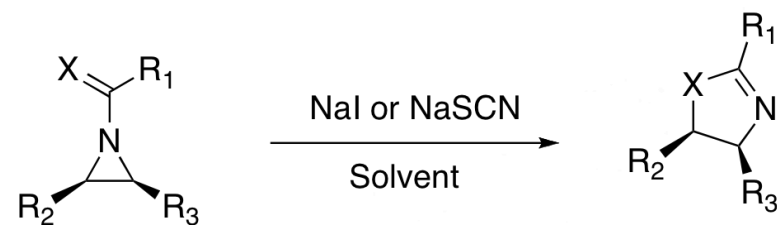


Heine, H. W.; Fetter, M. E.; Nicholson, E. M. J. Am. Chem. Soc. 1959, 81, 2202.

The reaction



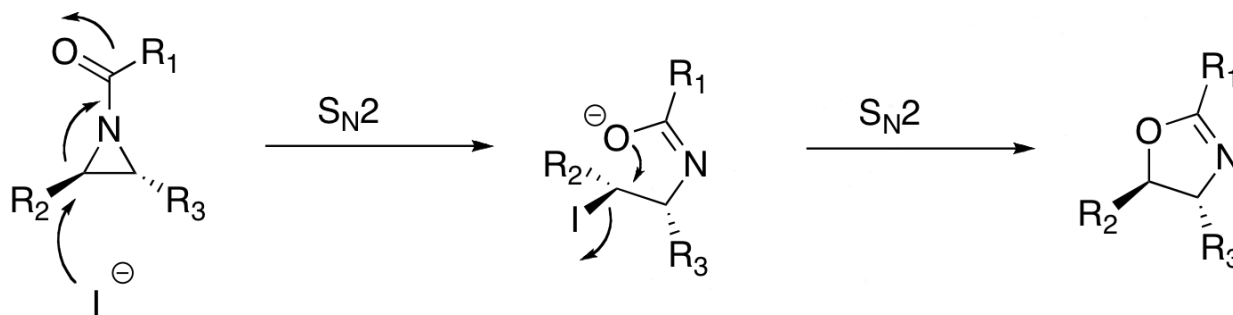
General Scheme



X: O, S, NR

Solvent: isopropanol, Acetone, Acetonitrile

Mechanism

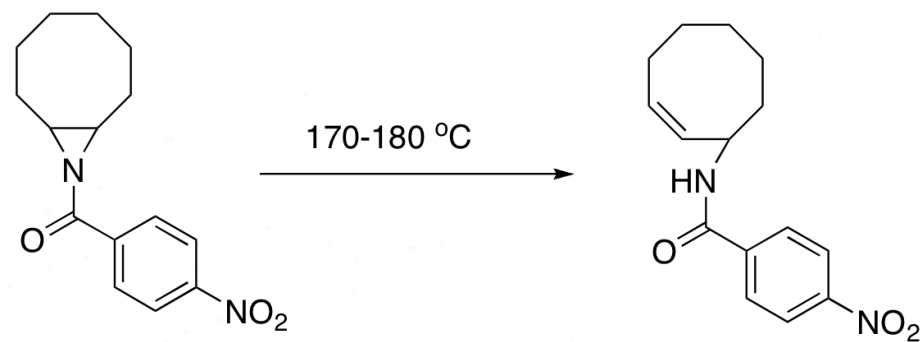
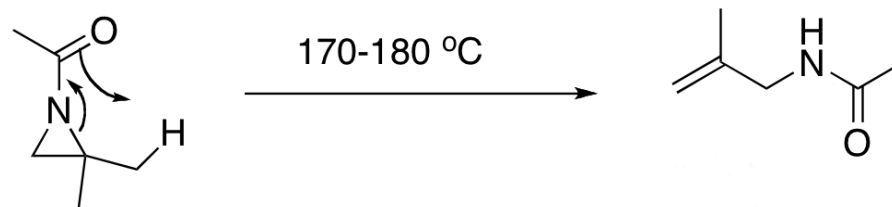


Advantages:

Aziridine ring opening under mild and neutral conditions

Stereospecific

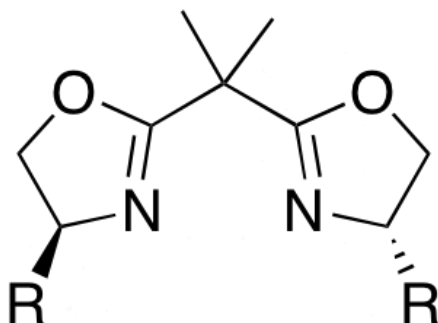
Reaction in the absence of I⁻



Heine, H. W. *Angew. Chem. Int. Ed.* 1962, 10, 528.

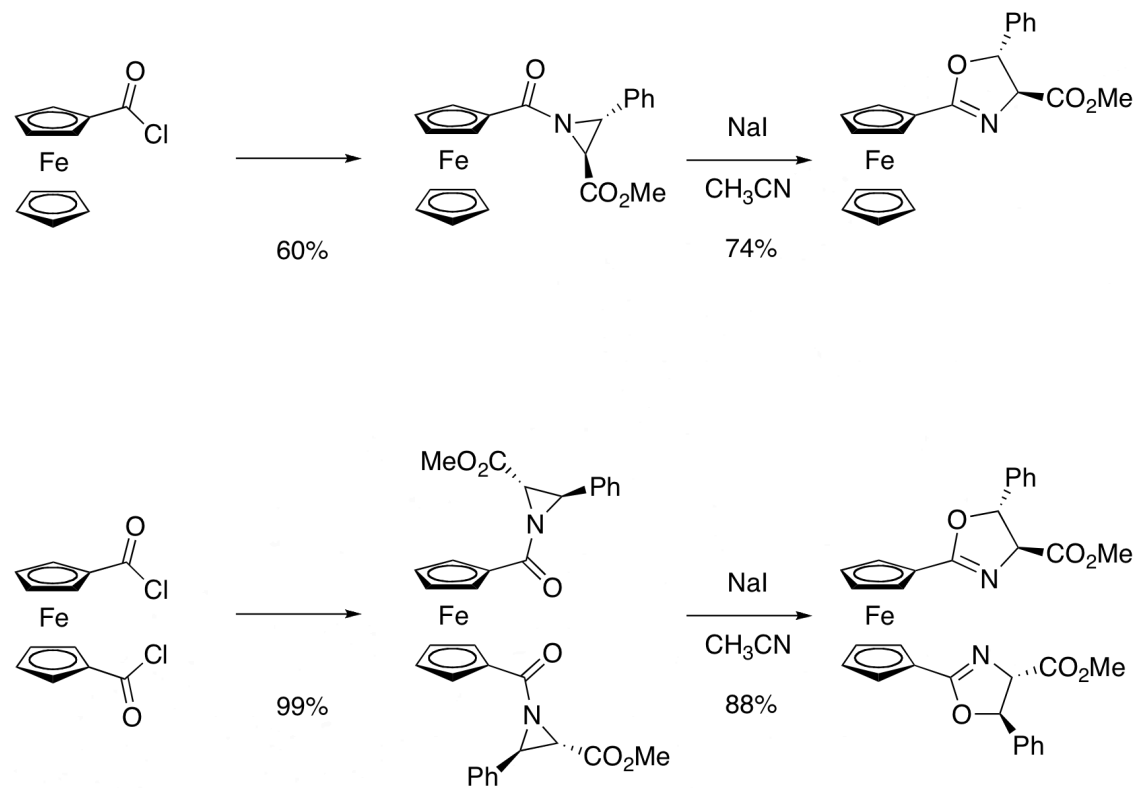
Application

Oxazolines are important motif in asymmetric catalysis.



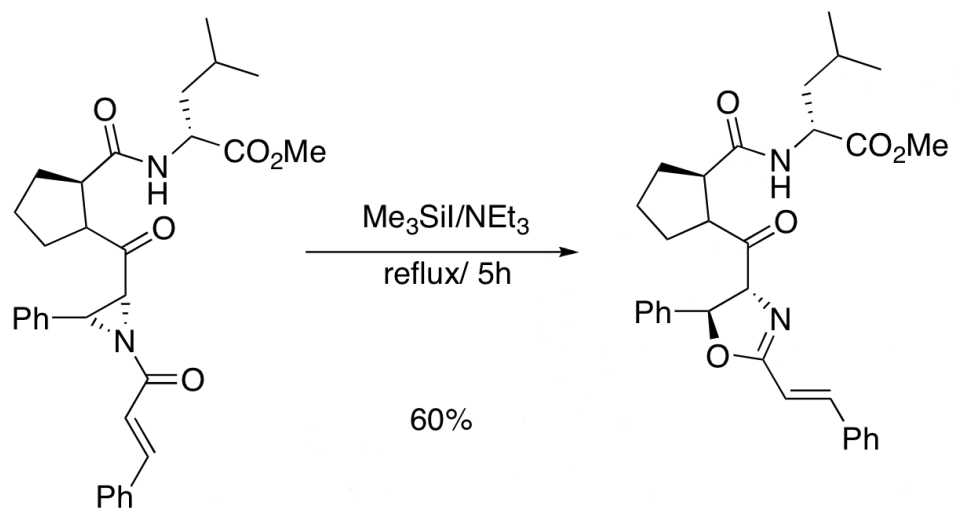
Johnston, J. Evan, D. A. *Acc. Chem. Res.* 2000, 33(6), 325.

Application



Bonini, B.F. *et al.* *Tetrahedron: Asymmetry* 2003, 14, 3321.

Application



Prabhakaran, E. N. *Tetrahedron Lett.* 2002, 43, 6461.

Thank You!

