Epoxidations and hydroperoxidations of a,b-unsaturated ketones : an approach through asymmetric organocatalysis

Reisinger, Corinna, author

Abstrak

In this thesis, Corinna documents her methodology, using primary amine salts as catalysts, and hydrogen peroxide as an inexpensive and environmentally benign oxidant. She describes the unprecedented and powerful catalytic asymmetric hydro peroxi dation of α,β-enones, a process which produces optically active five-membered cyclic peroxyhemiketals in a single operation. She also proves the versatility and synthetic value of the cyclic peroxyhemiketals by converting them into highly enantioenriched acyclic and cyclic aldol products. Currently, these cyclic aldol products are inaccessible by any other synthetic means. Furthermore, cyclic peroxyhemiketals are precursors to optically active 1,2-dioxolanes which are of biological relevance.