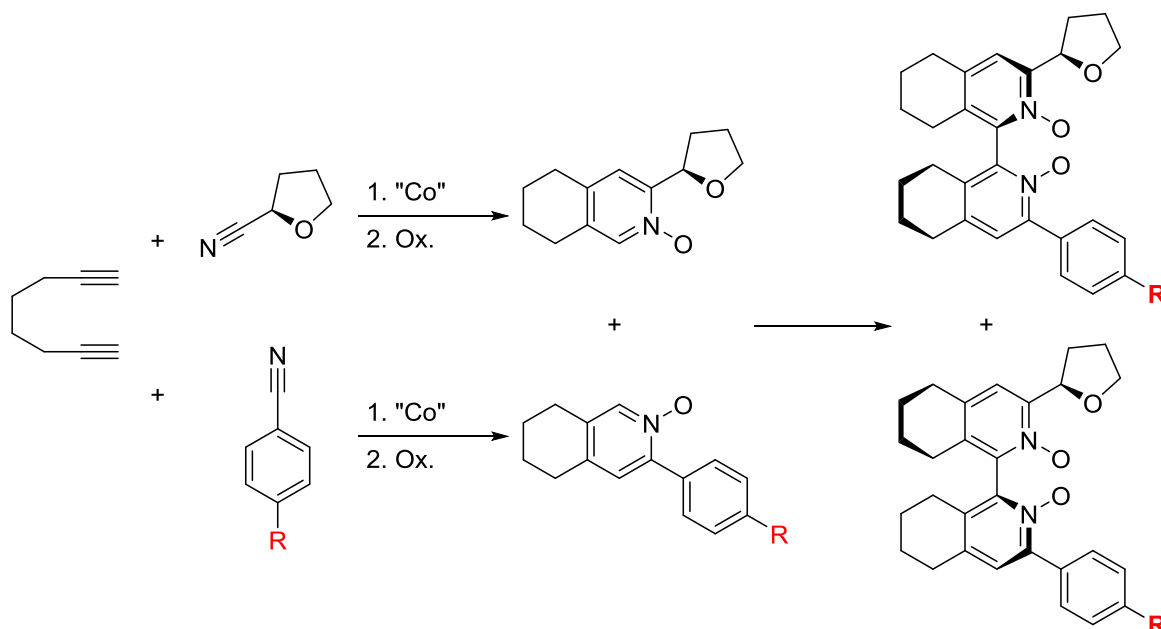


## Abstract

1,1'-Bis(tetrahydroisoquinoline)-*N,N'*-dioxides represent a class of strong Lewis bases, which are used in organocatalysis for allylation of aldehydes.

In this master thesis new chiral unsymmetrically substituted 1,1'-bis(tetrahydroisoquinoline)-*N,N'*-dioxides were prepared by a simple three-step synthesis (scheme 1). The first step of this approach was cyclotrimerization of octa-1,7-diyne with nitriles providing tetrahydroisoquinolines, which were oxidized to corresponding *N*-oxides. In final step two different *N*-oxides were subjected to oxidative coupling reaction, which produced unsymmetrically 3,3'-disubstituted 1,1'-bis(tetrahydroisoquinoline)-*N,N'*-dioxides. The main advantages of this method are short reaction times and easy availability of the starting materials.

Scheme 1



The catalytic activity and asymmetric induction of these new *N,N'*-dioxides were explored in allylation of aldehydes by allyltrichlorosilane in different solvents.

Key words: organocatalysis, allylation, *N,N'*-dioxide, cyclotrimerization