

PINCER AND CARBONYL RUTHENIUM COMPLEXES FOR TRANSFER HYDROGENATION REACTIONS

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The transfer hydrogenation (TH) catalyzed by ruthenium complexes is a cost-effective and environmentally benign way for the reduction of carbonyl compounds. On account of the reversibility of the TH process, ruthenium catalysts have attracted a great deal of interest for a number of C-H activation organic transformations. To improve the catalytic activity and to retard decomposition, the design of suitable chelating and non-innocent ligands appears crucial.

We report here the preparation of pincer, carbonyl and acetate ruthenium complexes (Figure 1), displaying high productivity for the TH of carbonyl compounds^[1-3], including flavanones and biomass-derived molecules (5-HMF, ethyl levulinate). The alkylation of amines with alcohols^[4] and the preliminary results on the photochemical TH of carbonyl compounds are also presented.

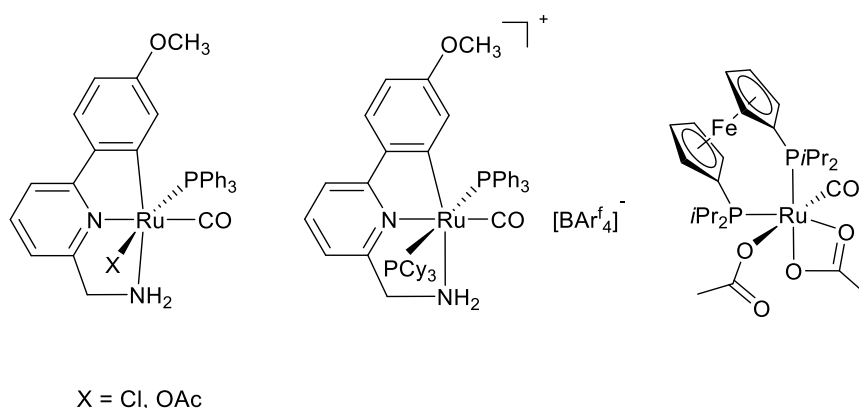


Figure 1. Pincer, carbonyl and acetate ruthenium complexes

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