



SEMINARIO DI DIPARTIMENTO

(Gruppo Chimica Organica)

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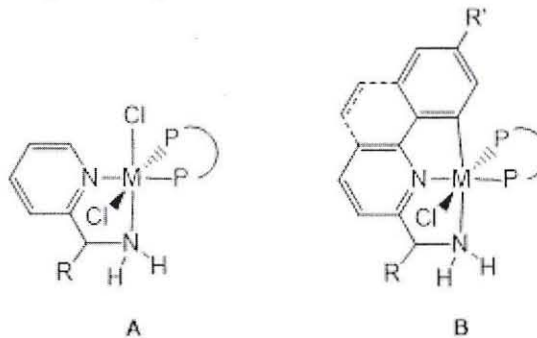
Martedì 12 Aprile 2016 (aula IV NEC, ore 10.00)

Proponenti: Dott. Andrea Lapi, Dott. Mauro Bassetti

MULTITASKING RUTHENIUM AND OSMIUM CATALYSTS FOR HYDROGENATION vs. DEHYDROGENATION REACTIONS

The asymmetric transfer hydrogenation (TH) and hydrogenation (HY) of carbonyl compounds are practical routes for the preparation of valuable chiral alcohols. The reverse dehydrogenation (DHY) of alcohols is a useful process for the synthesis of carbonyl compounds without the use of oxidants and it is a key step for hydrogen borrowing reactions. In order to achieve selective transformations, the design of efficient catalysts is a crucial issue for applications, which require metal complexes in low amount.

Highly active Ru and also Os catalysts for TH, HY and DHY reactions have been obtained with ligands based on the 2-(aminomethyl)pyridine motif (**A**). More productive catalysts are those with the pincer terdentate CNN ligands showing a metal-carbon σ -bond (**B**), achieving TOF and TON values up to 10^6 h^{-1} and 10^5 , respectively.



M = Ru, Os