

Martin Wills:



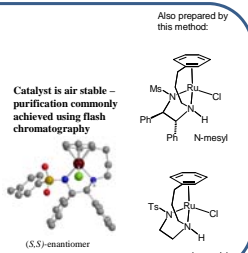
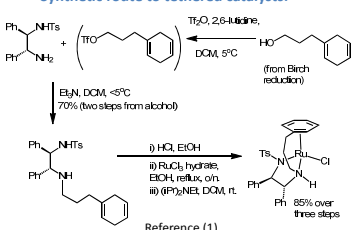
3C tethered complexes



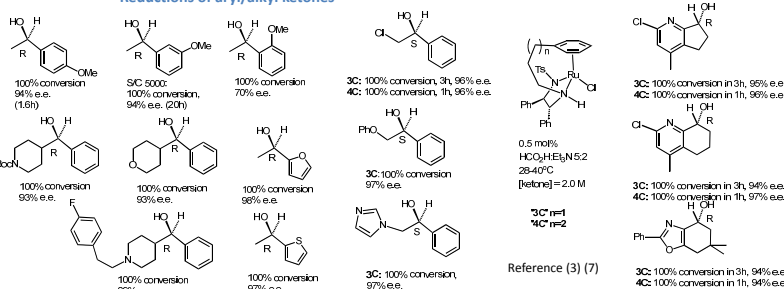
This poster contains a summary of recent work on the synthesis of ruthenium and iron complexes and their applications to asymmetric reductions of ketones.

## Section 1: Ruthenium complexes:

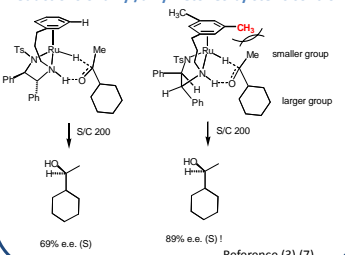
### Synthetic route to tethered catalysts:



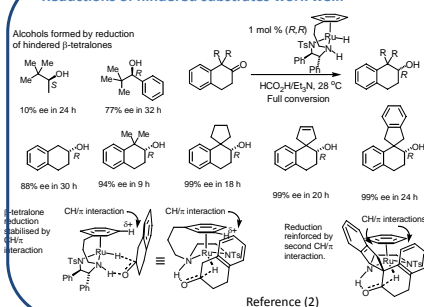
### Reductions of aryl/alkyl ketones



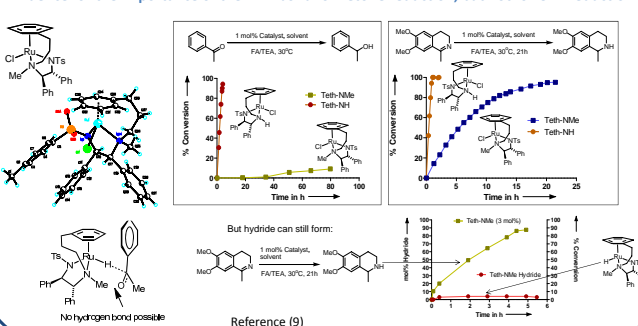
### Reductions of alkyl/alkyl ketones by steric control:



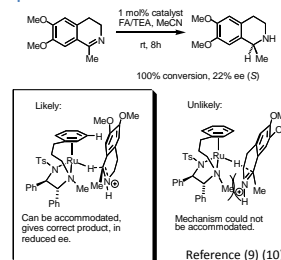
### Reductions of hindered substrates work well:



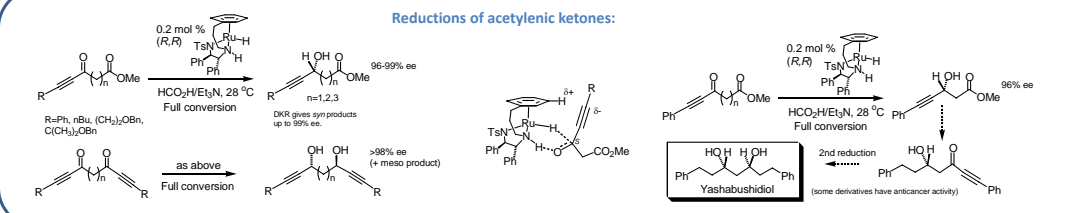
### Evidence for the importance of the N=H bond for ketone reduction, but not for C=N reduction:



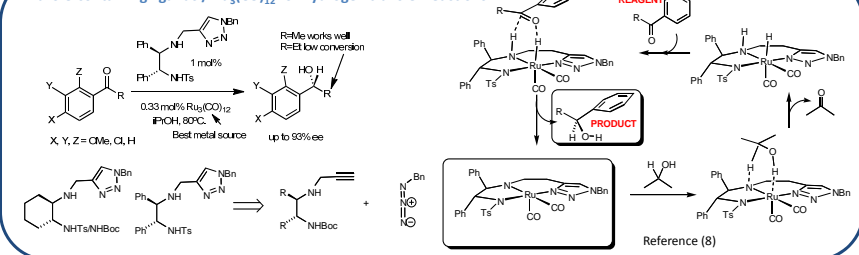
### Reductions of imines are probably via an open transition state



### Reductions of acetylenic ketones:

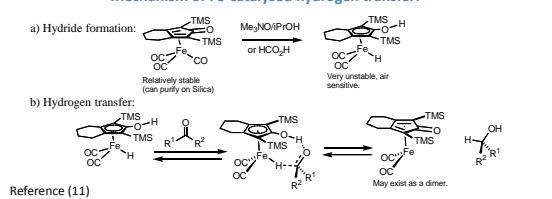


### Triazole-containing ligands / $\text{Ru}_2(\text{CO})_{12}$ for hydrogen transfer reactions.

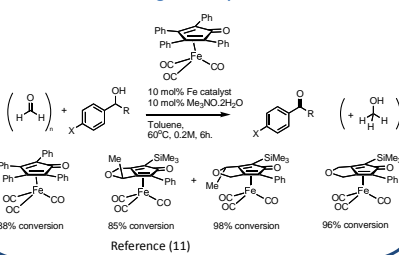


## Section 2: Iron complexes:

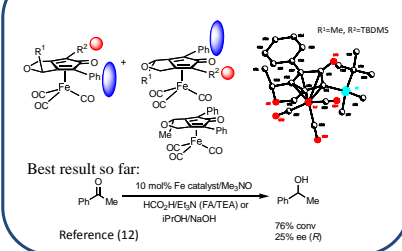
### Mechanism of Fe-catalysed hydrogen transfer:



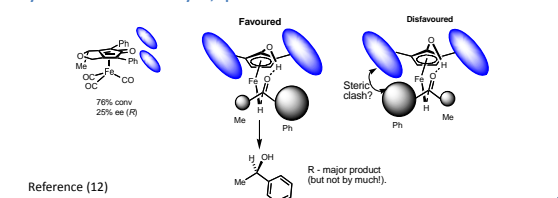
### Alcohol oxidation using iron complexes.



### Asymmetric Fe-Shvo catalysts:



### Asymmetric Fe-Shvo catalysts; speculated reduction stereochemical control.



### References:

#### Ruthenium

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#### Iron

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### ACKNOWLEDGEMENTS

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