

Lecture “Modern Synthetic Methods”

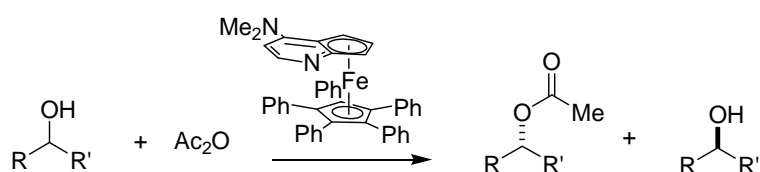
Take-home messages from Week 12

3.3.2. Electrophile activation

III) Non-metallic electrophile activation

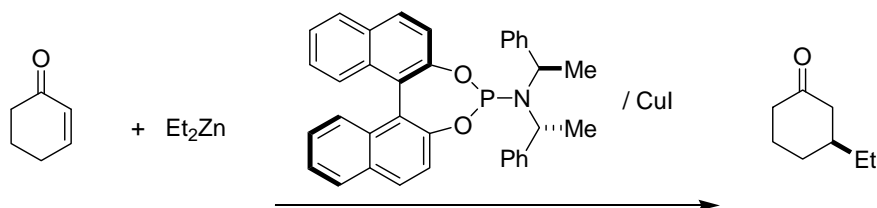
- Concept similar to chiral auxiliary approach

- Examples:** a) Baylis-Hillman reaction employing chiral bases (quinidine)
b) Chiral DMAP-derivative for kinetic resolution of secondary alcohols

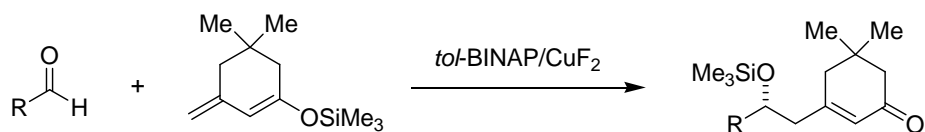


3.3.3. Nucleophile activation

- Addition of RM to carbonyls:** - Background reaction need to be controlled
- Copper-catalyzed Michael additions



- Mukaiyama-Aldol:** - Transmetalation of silyl enol ether to chiral metallic catalyst
- Turnover efficient in case of **soft** metal centers (i.e. Cu, Pd)



3.3.4. Double activation of nucleophile and electrophile

- Addition of Et_2Zn to benzaldehyde:** - Very well studied reaction
- Mostly at least two metal centers involved
- Push-pull mechanism
- Non-linear effects

