

Reaction Mechanism

(CHEM-563)

Online Lecture-7 (Week-3)

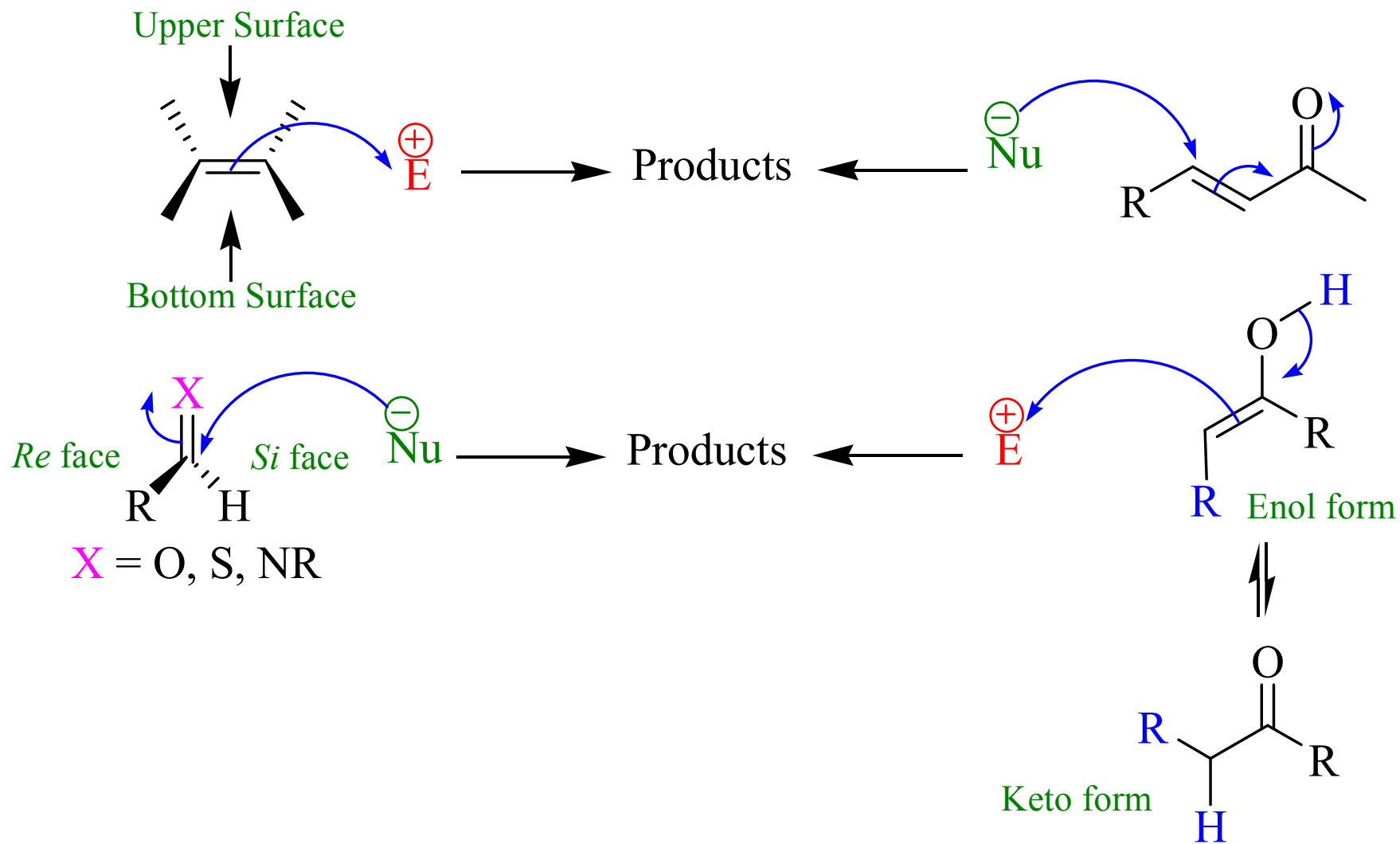
Dr Abdul Rauf Raza

(Associate Professor)

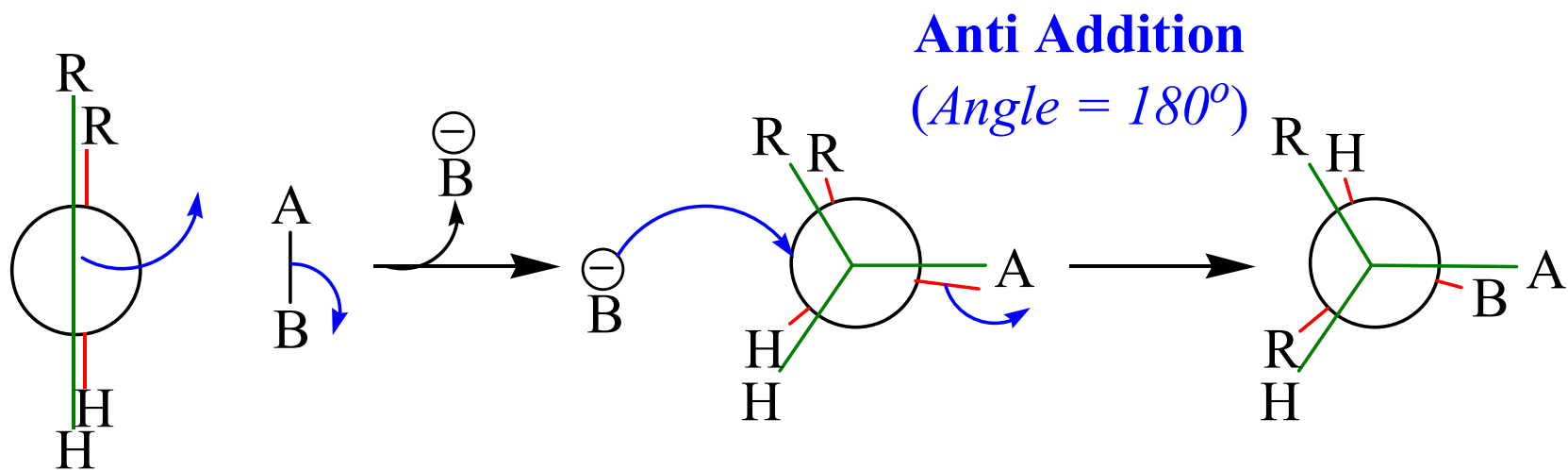
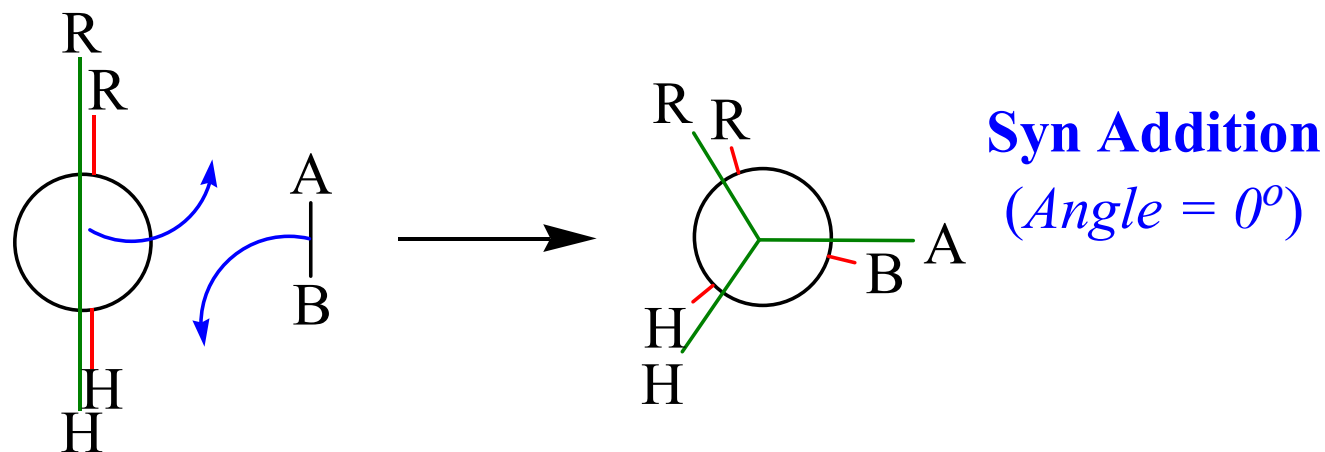
Department of Chemistry

University of Sargodha, Sargodha

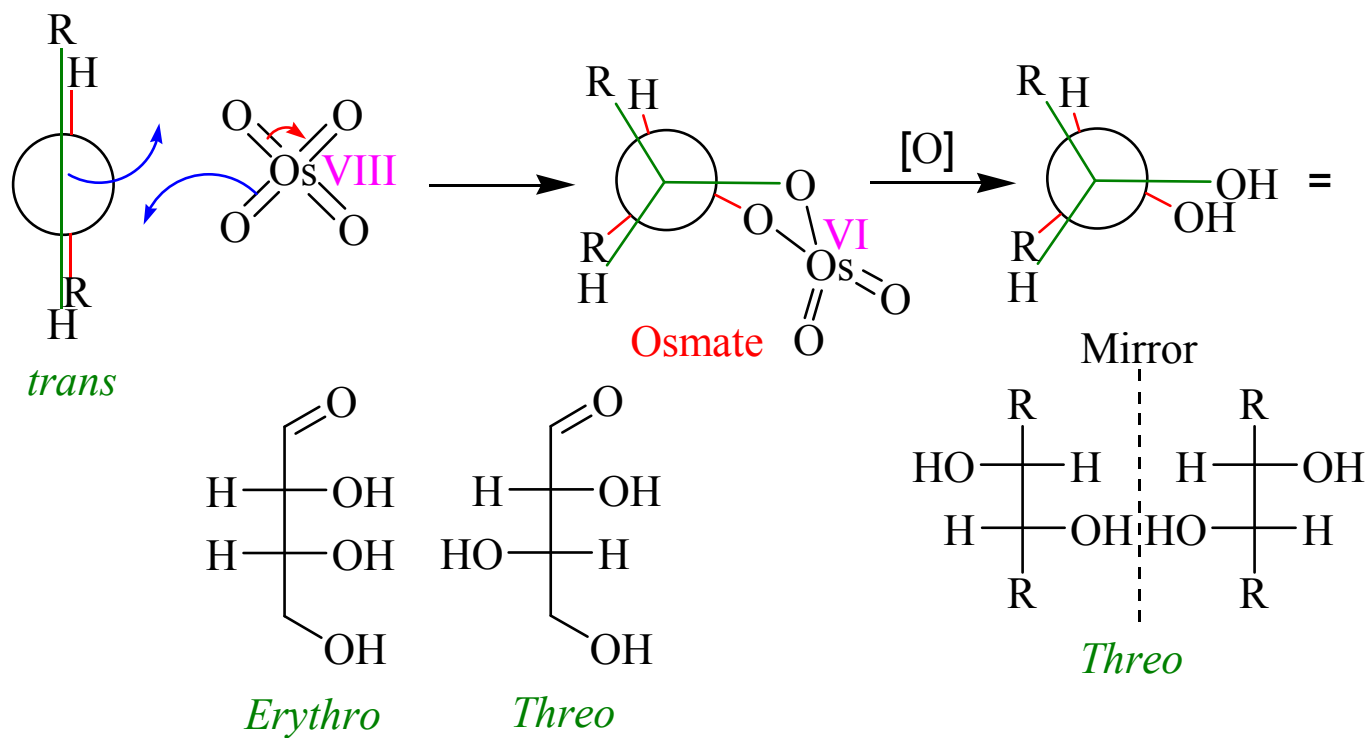
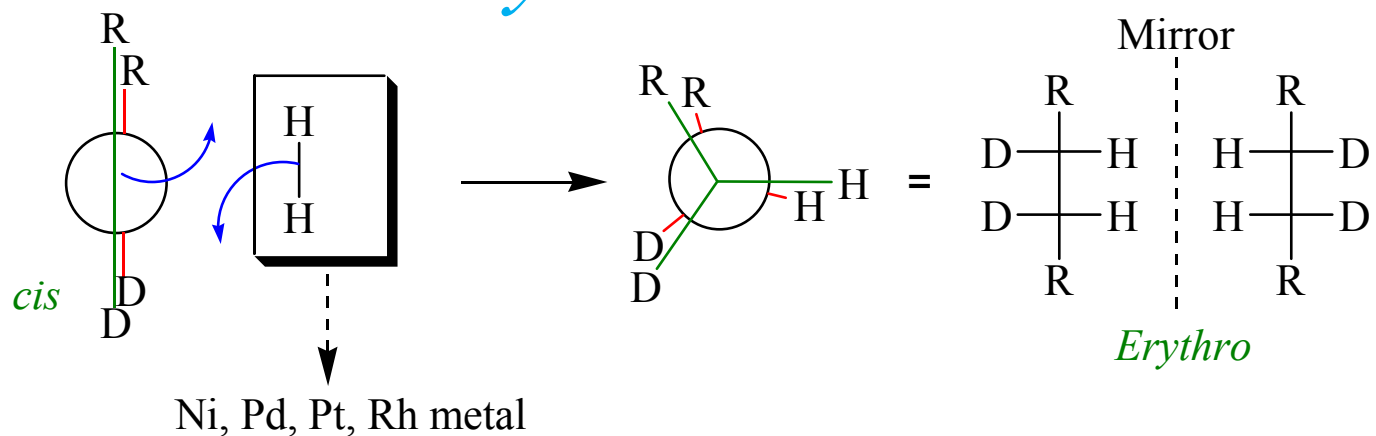
Addition Reactions



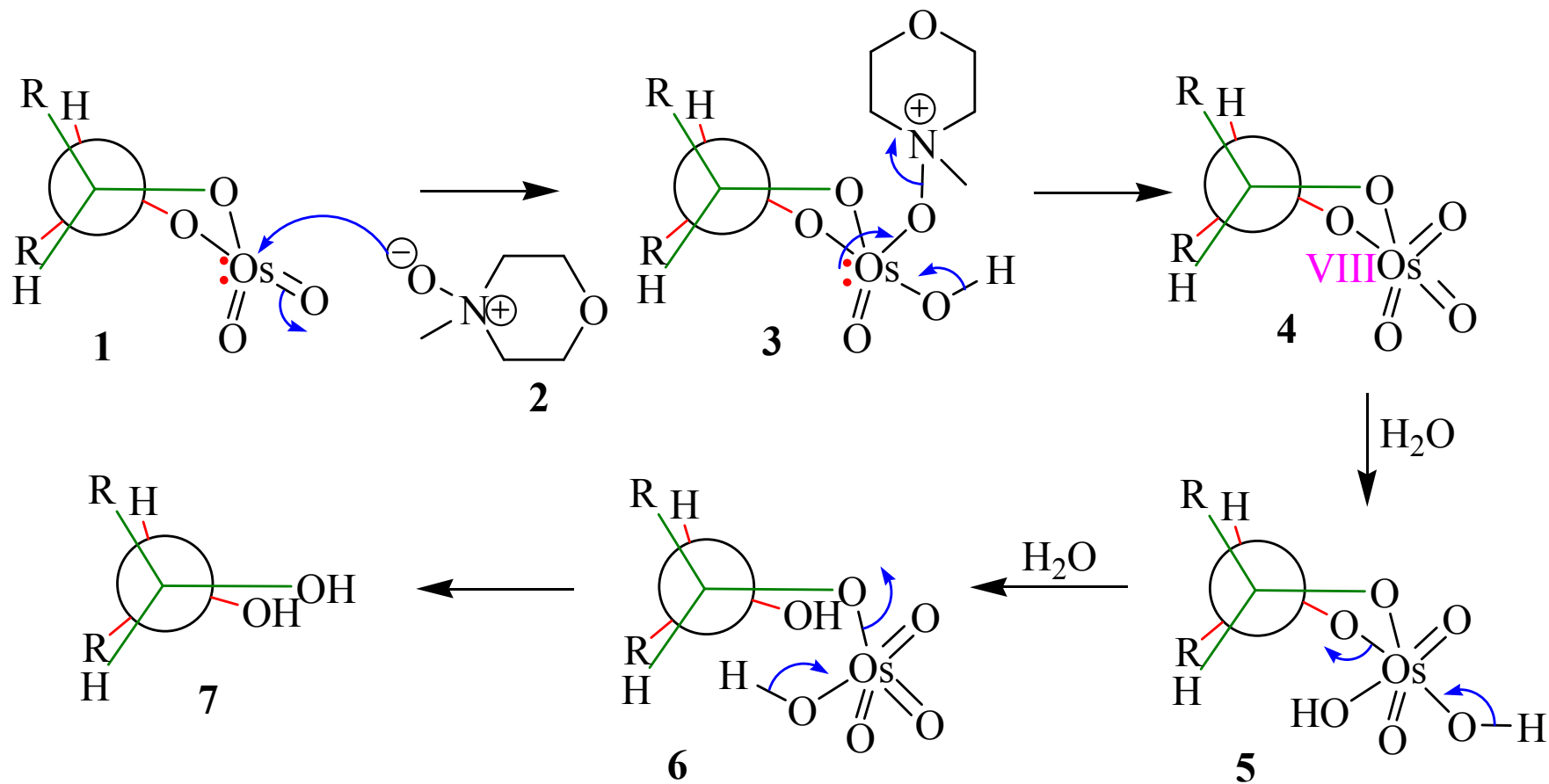
Mode of Additions



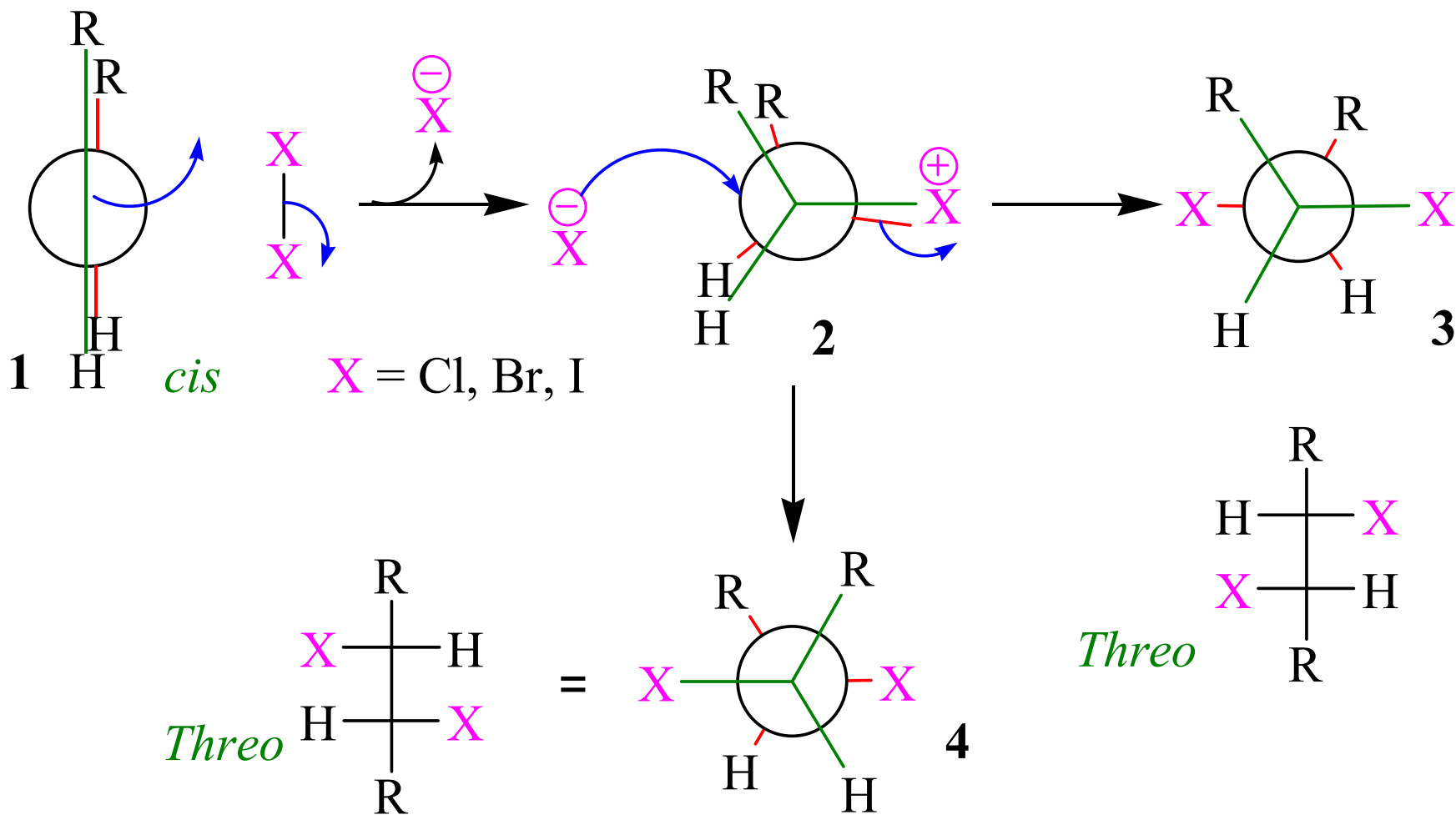
Syn Additions



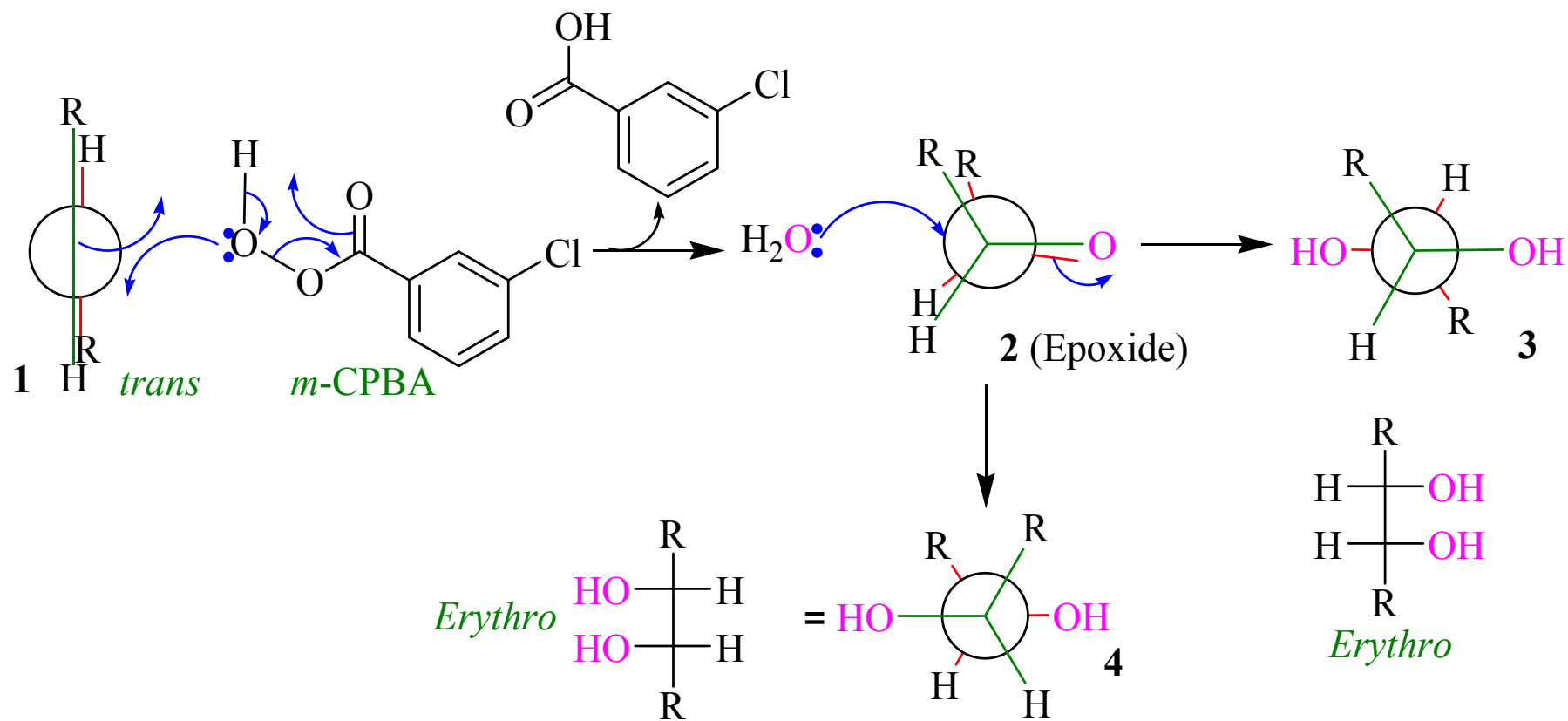
Syn Additions (Oxidation of Osmate)



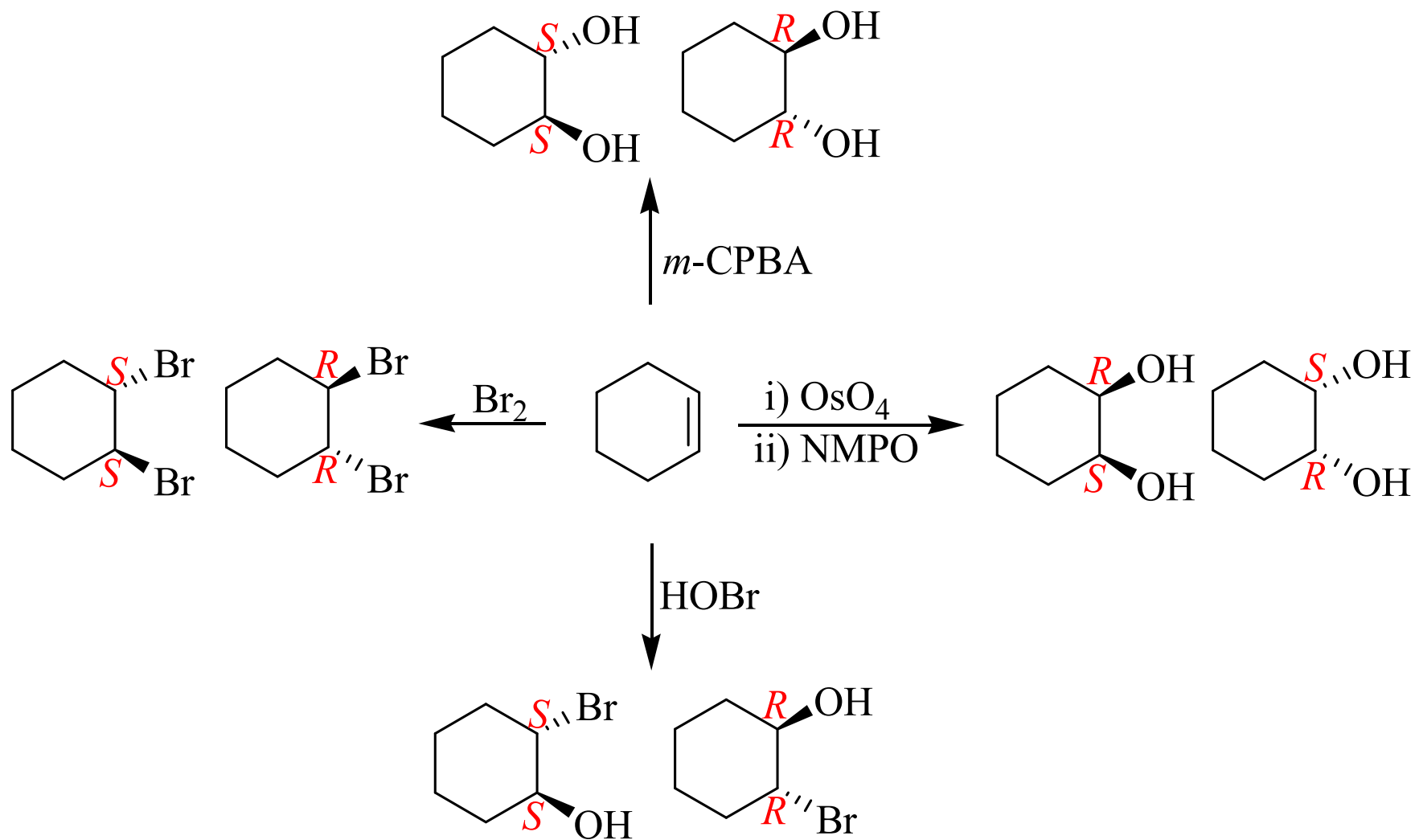
Anti Addition



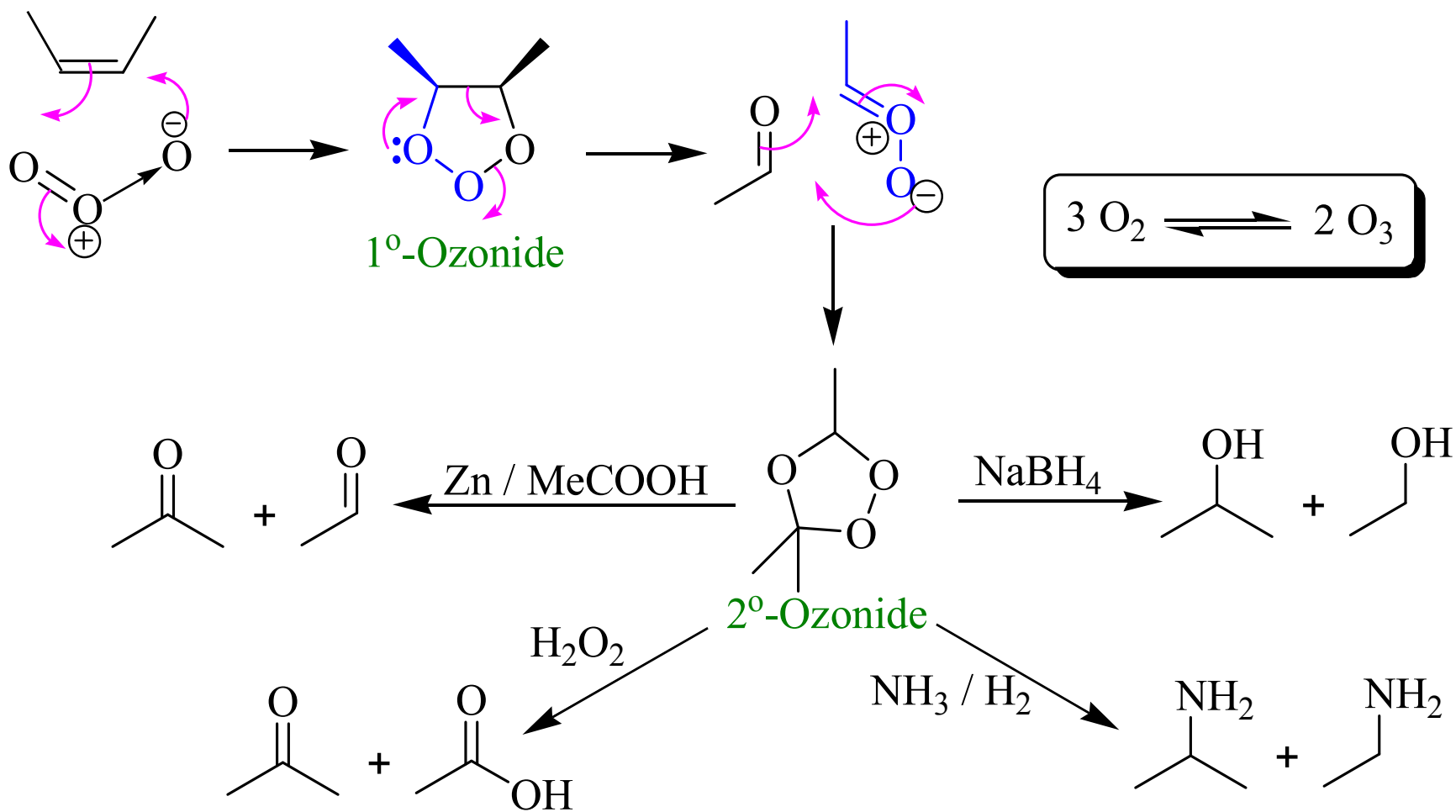
Anti Addition



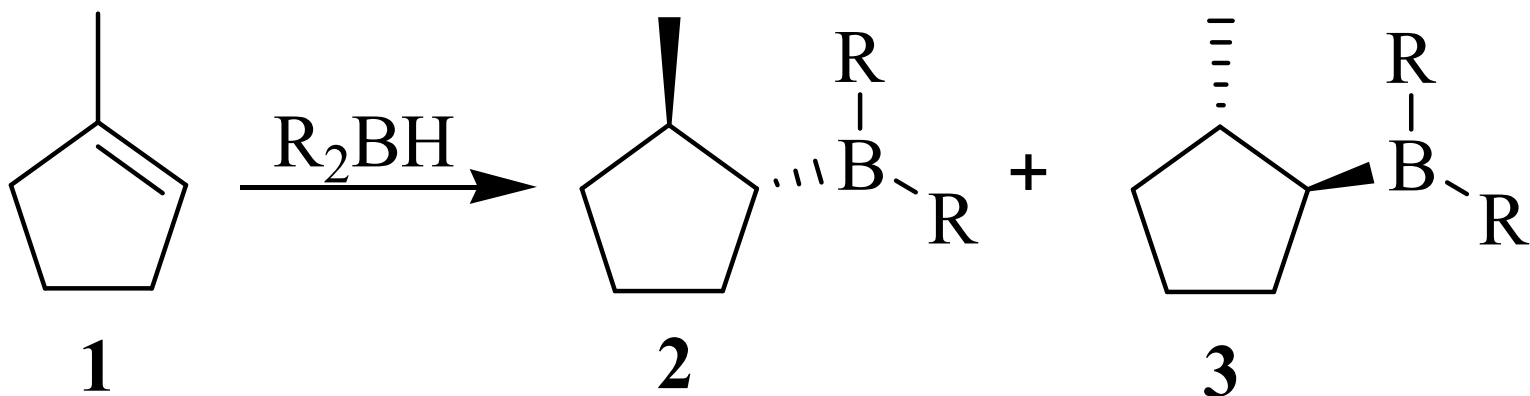
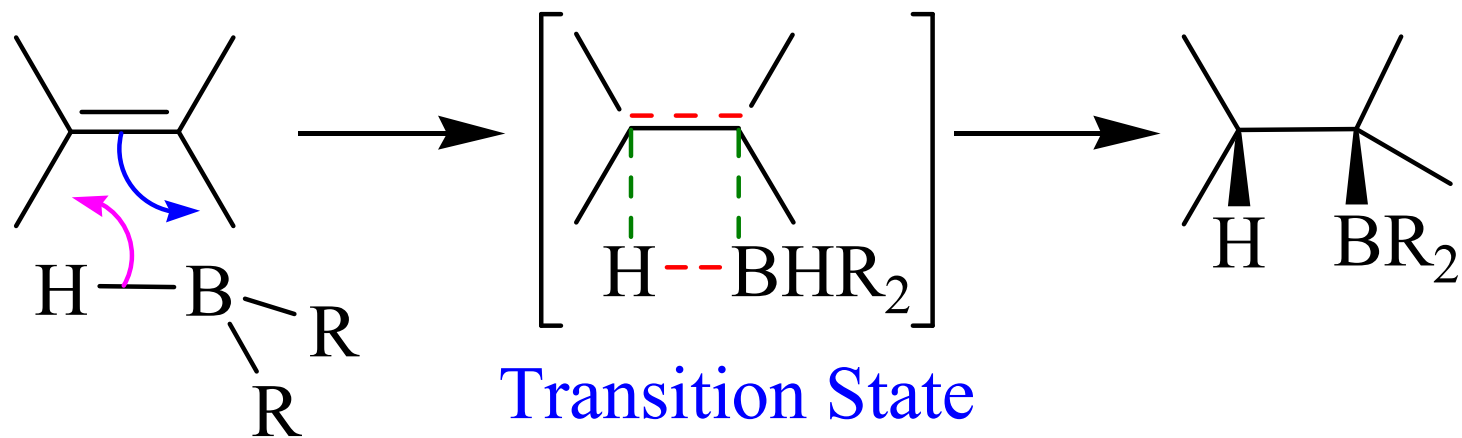
Syn vs Anti Addition



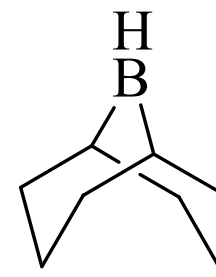
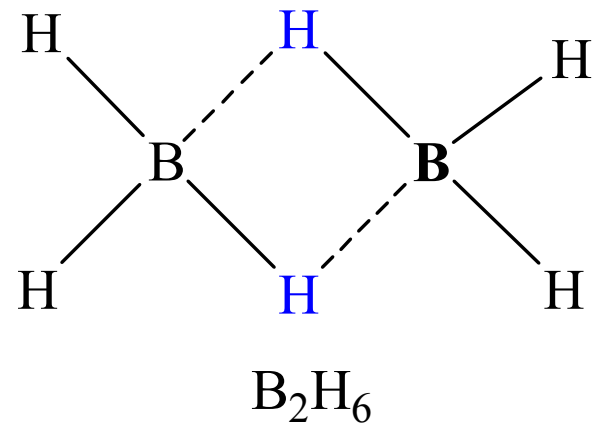
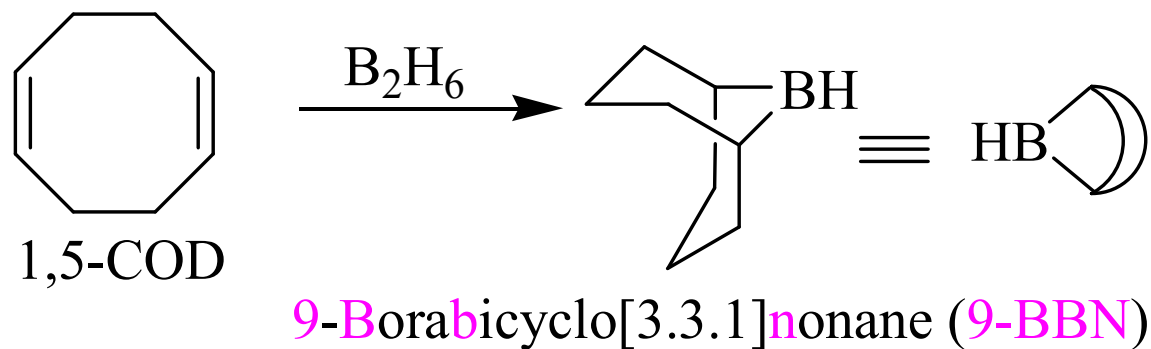
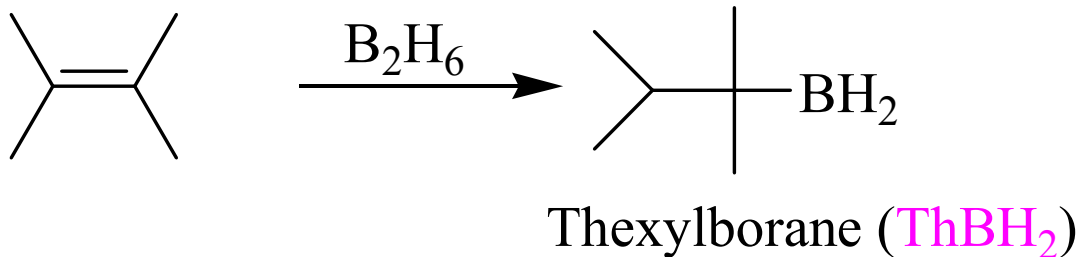
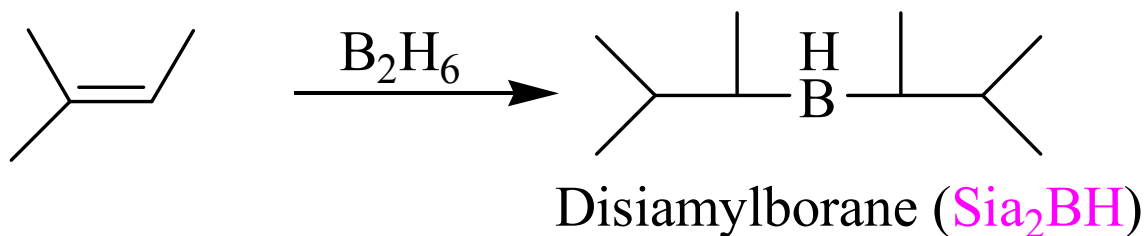
Ozonolysis (*Syn* Addition)



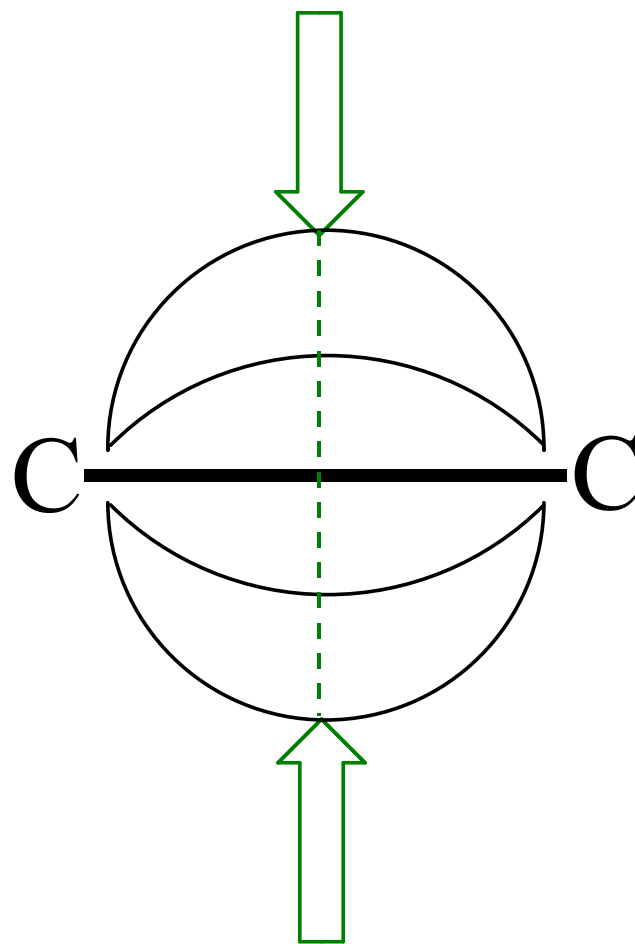
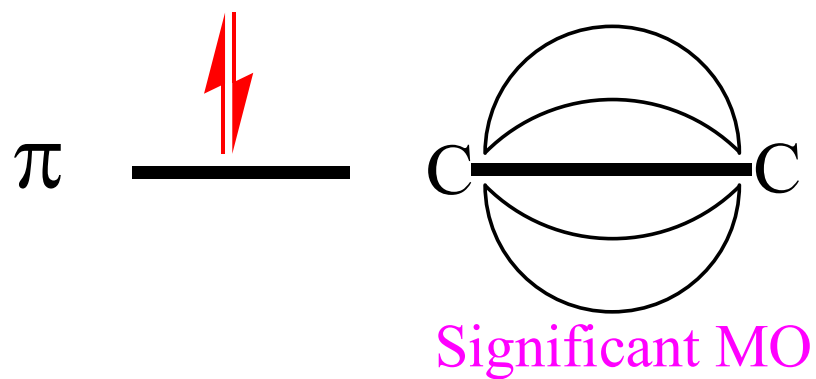
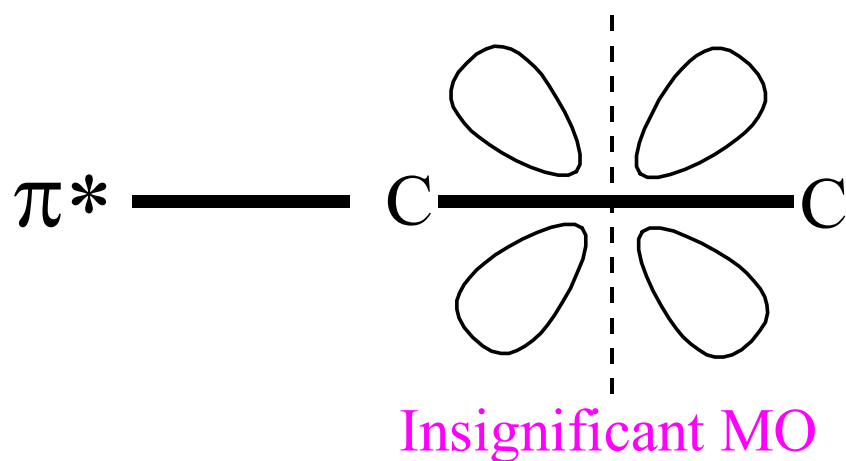
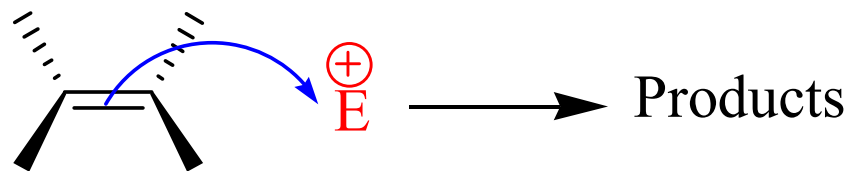
Hydroboration (*Syn* Addition)



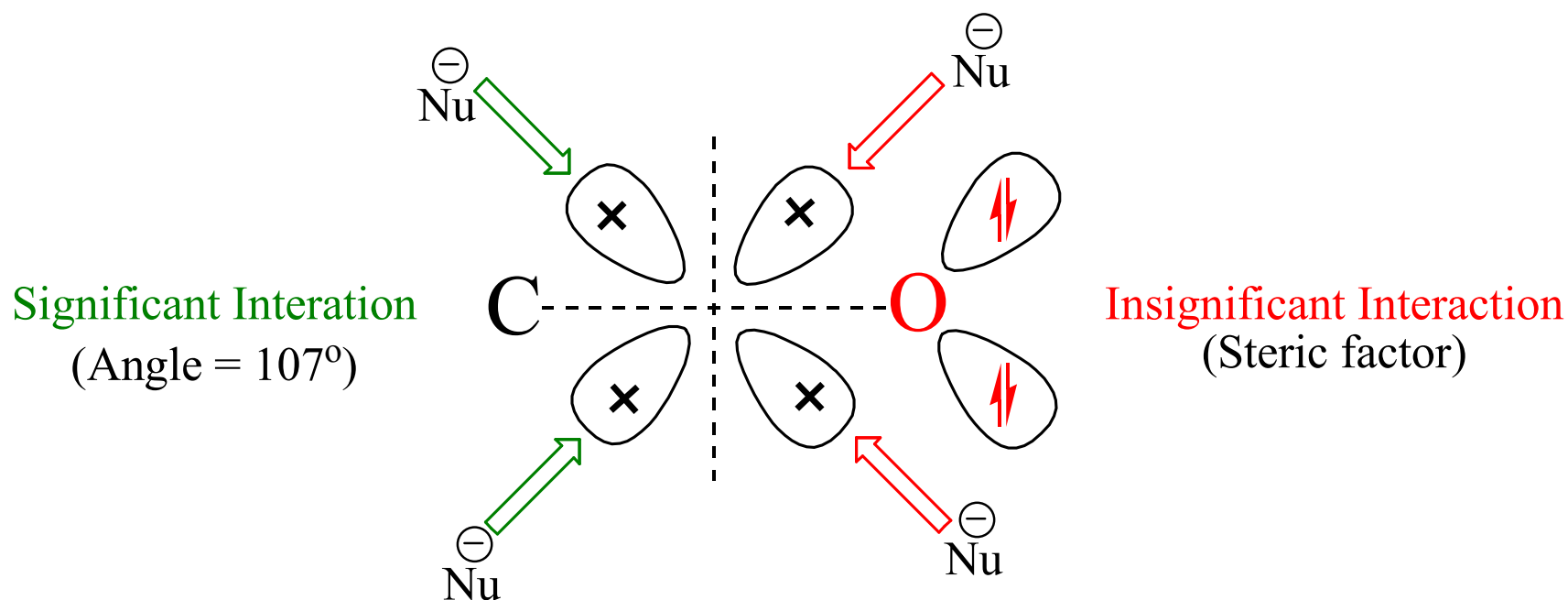
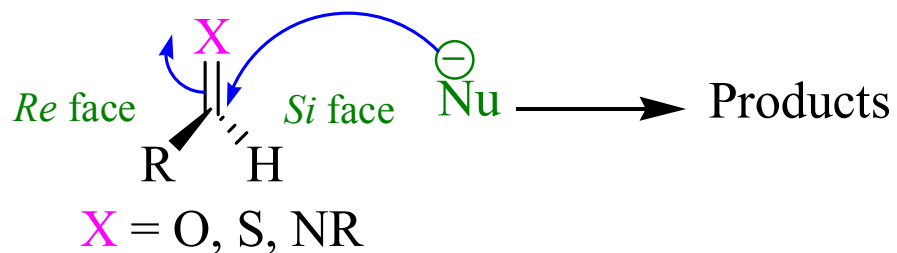
Preparation of OrganoB



Molecular Orbital Approach (C=C)

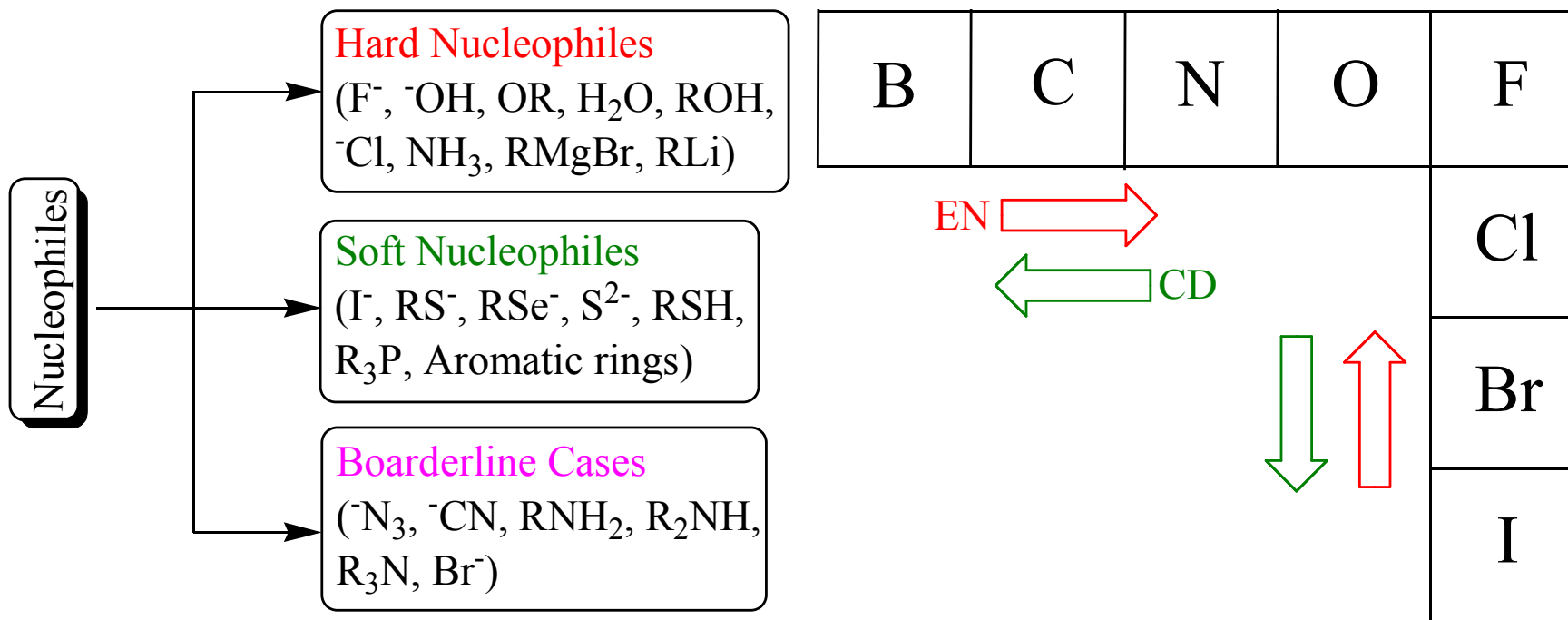


Molecular Orbital Approach (C=O)

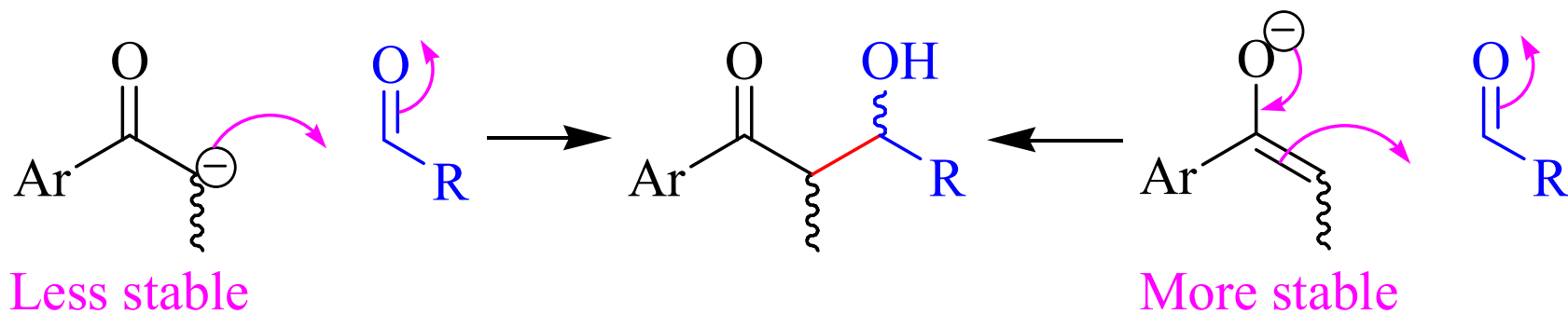
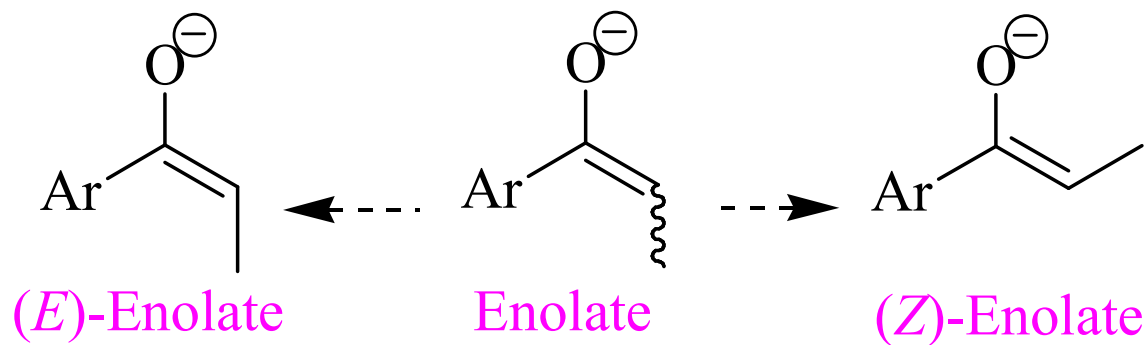
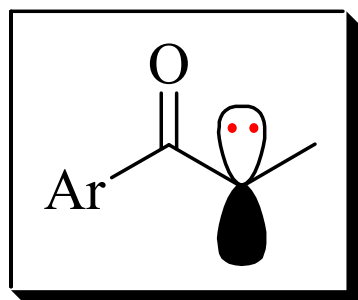
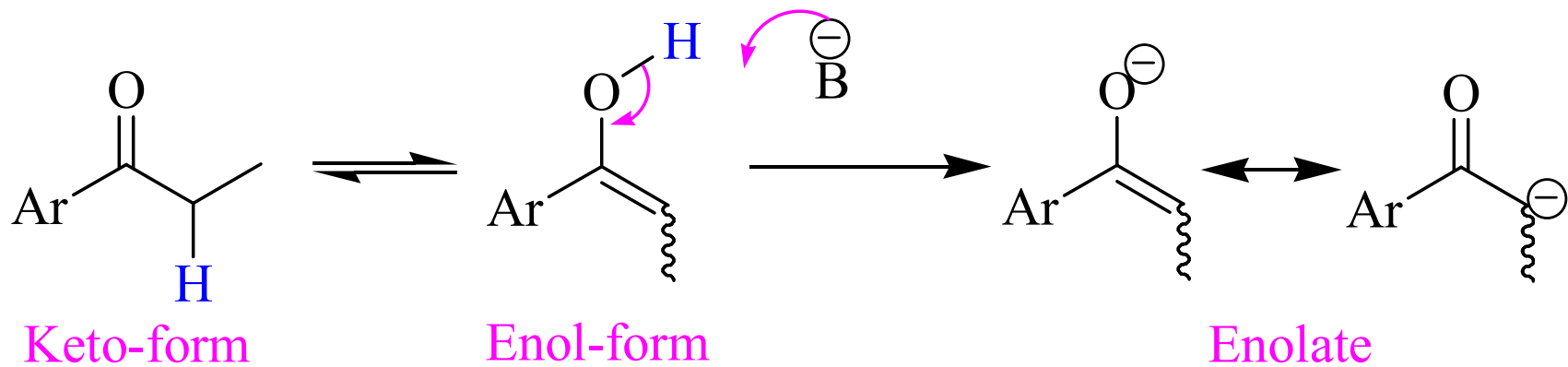


Nucleophiles

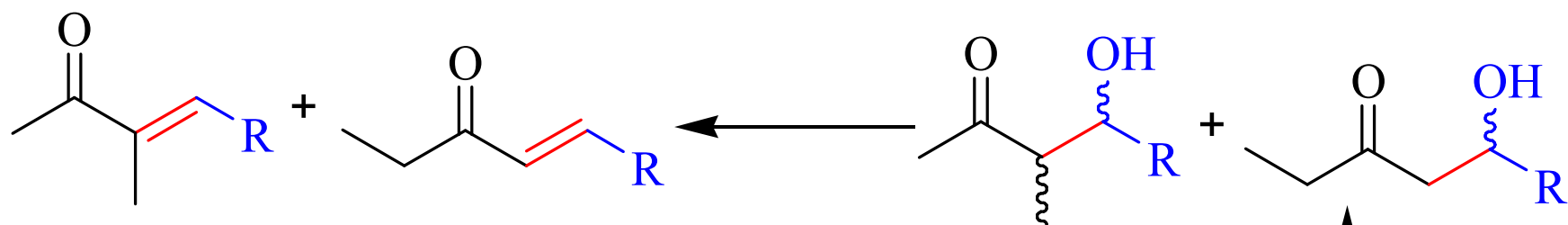
Such soft bases (electron pair donors), which carries a -ve charge or a non-bonding electron pair on a low electronegative atom with low charge density are called Nucleophiles.



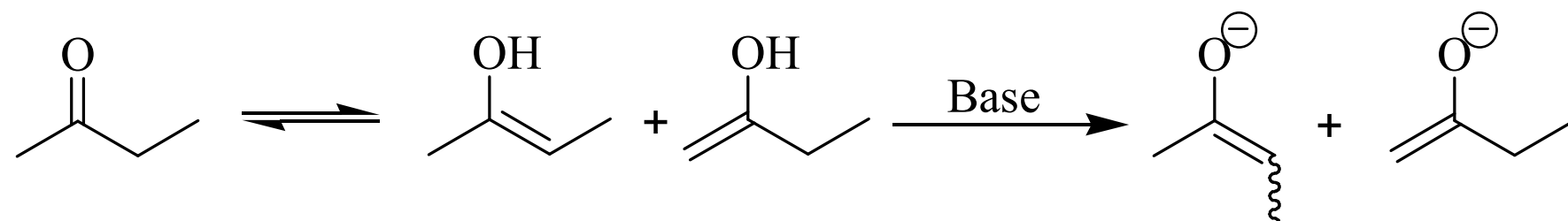
Enolization



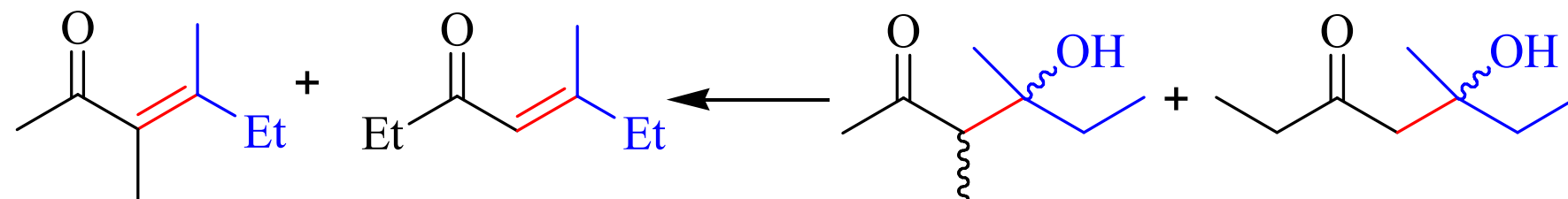
Aldol Reaction



Cross-Aldol Condensation



Self-Aldol Condensation



Suggested Reading

- i) Chapter 19 (Page 446 to 447)
- ii) Chapter 20 (Page 449 to 459)
of “Organic Chemistry” by Clayden, J;
Greeves, N; Warren, S., 2nd Edition, Oxford
University Press, England (2008)