

Handouts: - Questionnaire
 - Course Outline
 - Objectives & Expectations
 - Reaction Review Sheet

Overheads: - Outline

- 1) Introductions
- 2) Course Outline & Expectations
- 2) Fill out questionnaire
- 3) Lab Schedule
- 4) Review Topics / Questions

A) What is an Electrophile?

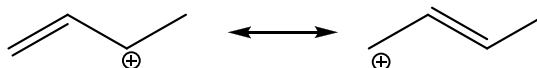
- Loves electrons
- Electron acceptor; aka acid (Bronsted or Lewis)
- H^+ , Br^+ , BH_3

B) What is a Nucleophile?

- Loves nucleus (H^+)
- Electron donor; aka base
- OH^- , Br^- , H_2O , $C=C$

C) What makes a C^+ (carbocation) stable?

- More substituted = more stable ($3^\circ > 2^\circ > 1^\circ$)
- Resonance!



D) What does  mean?

- Movement of electrons (2)



E) What is a stereospecific reaction?

- Stereoselective: one stereoisomer preferred
- Stereospecific: each isomer of reactant gives different isomer(s) of product

e.g. $E \rightarrow RR + SS$

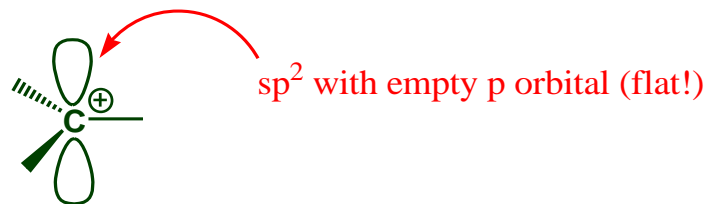
$Z \rightarrow RS + SR$

or $S \rightarrow R$ = inversion

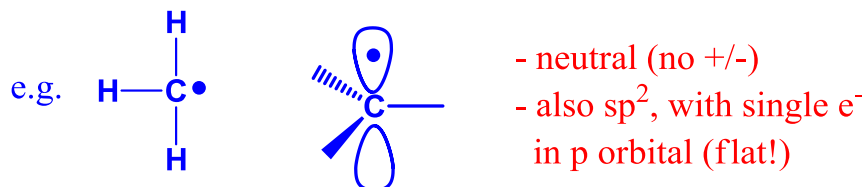
$R \rightarrow S$

Recap CHEM 241 Reactions:

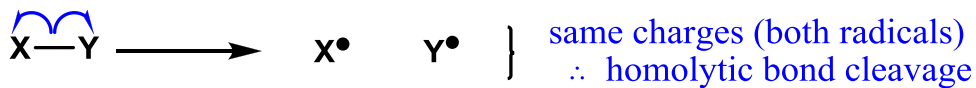
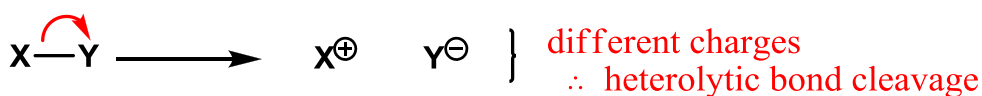
C^+ intermediate:



Radical: atom with unpaired electron



- use half arrow  to show one e^- moving

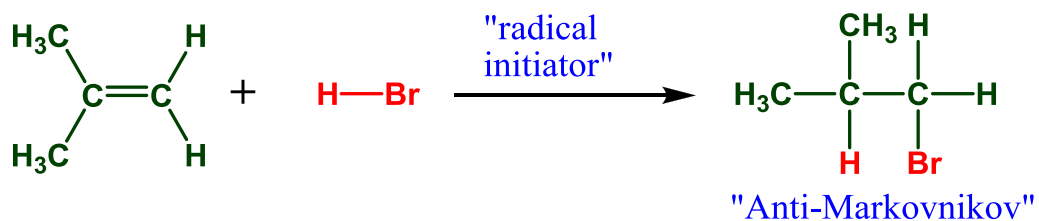


Or make a bond:

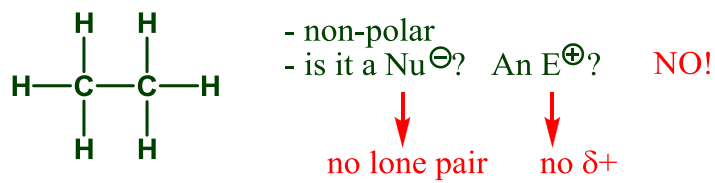


Radical Reactions:

1) Reaction of Alkenes with HBr under radical conditions

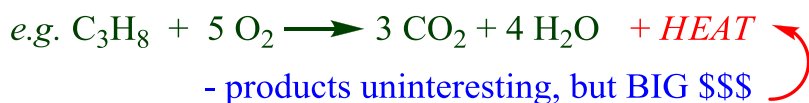


2) Reaction of Alkanes



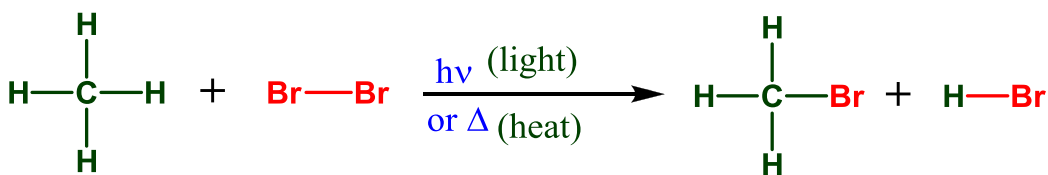
\therefore very few reactions

⇒ Combustion:

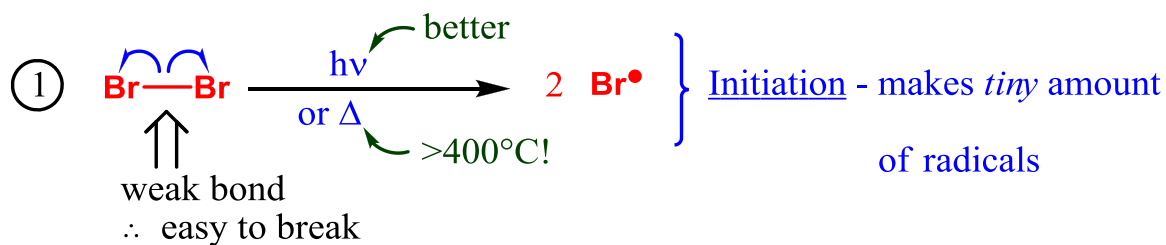


⇒ Radical Halogenation:

- reaction with Br_2 or Cl_2
- replace one H with a Br (or Cl)
- get alkyl halide, useful for many reactions (next 2 chapters!)



Mechanism: several steps!



Next up: How does radical react with the alkane?