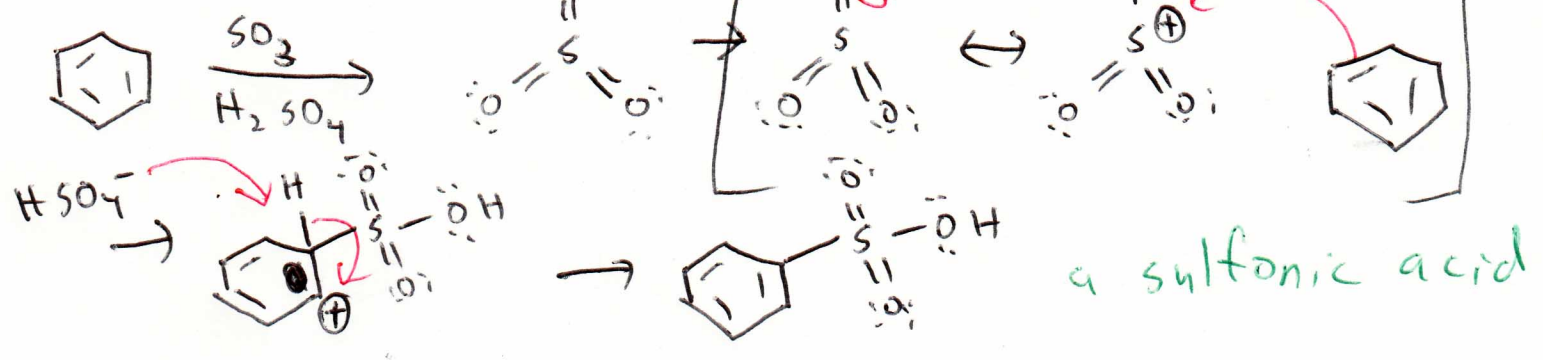
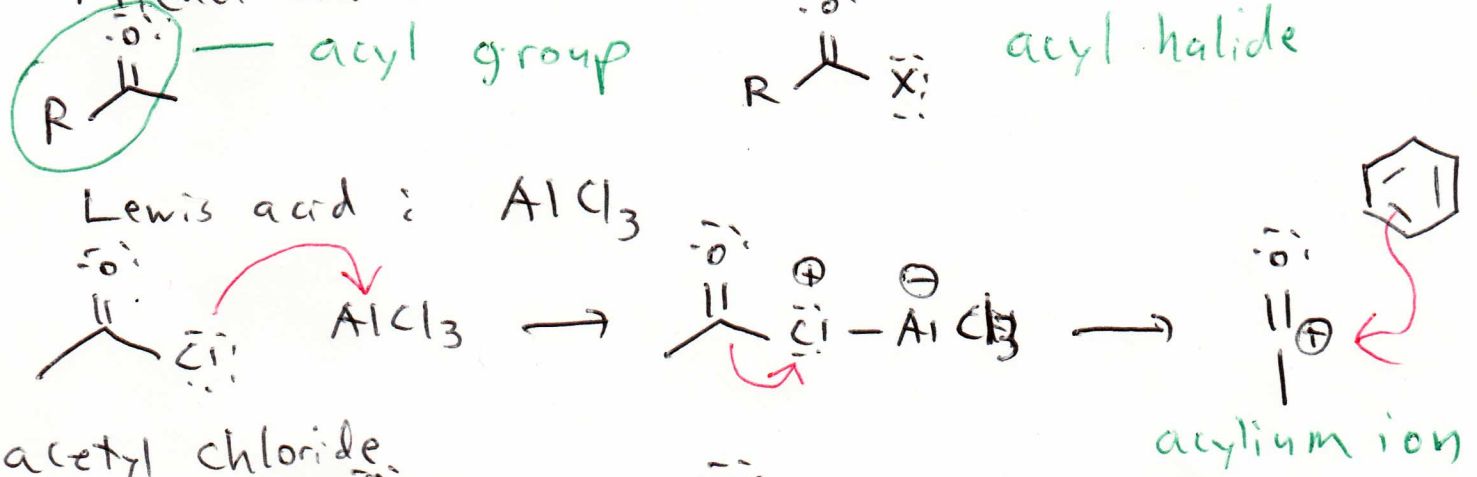


3/15/12

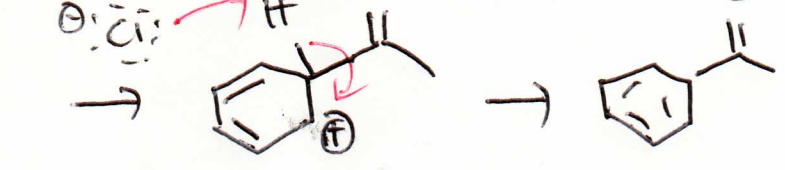
Sulfonation



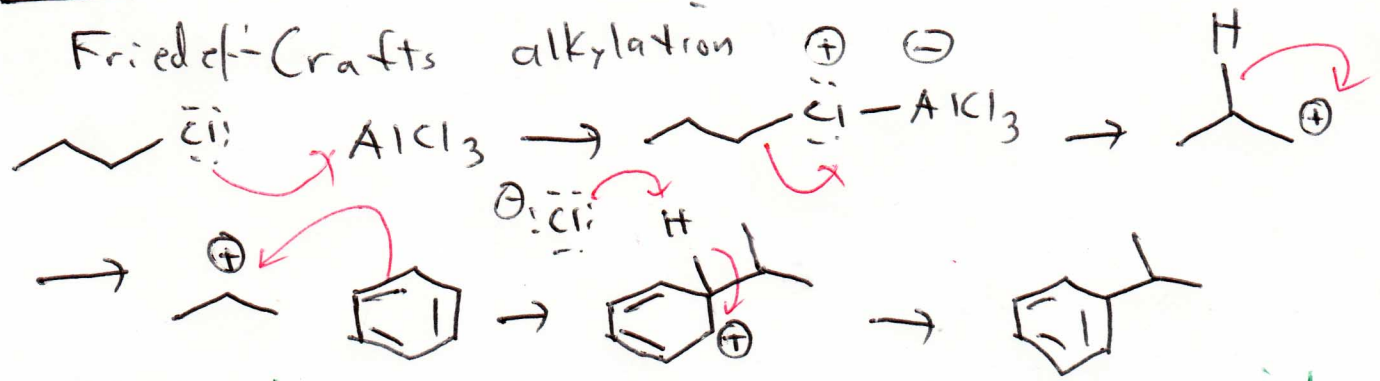
Friedel-Crafts acylation



acetyl chloride

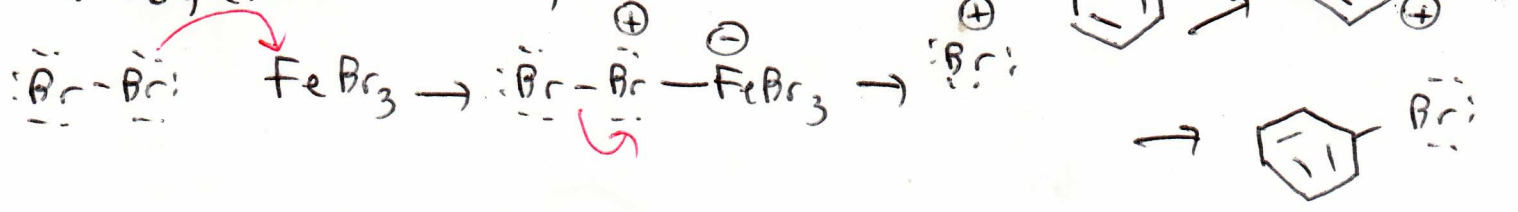


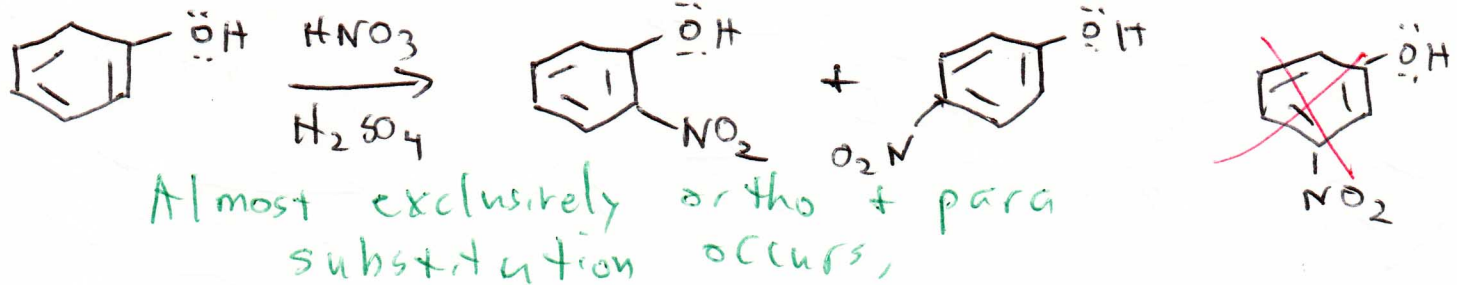
Friedel-Crafts alkylation



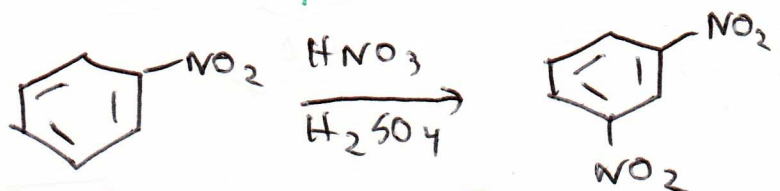
* Carbocation rearrangement is possible in Friedel-Crafts alkylation.

Halogenation (Cl₂, or Br₂)

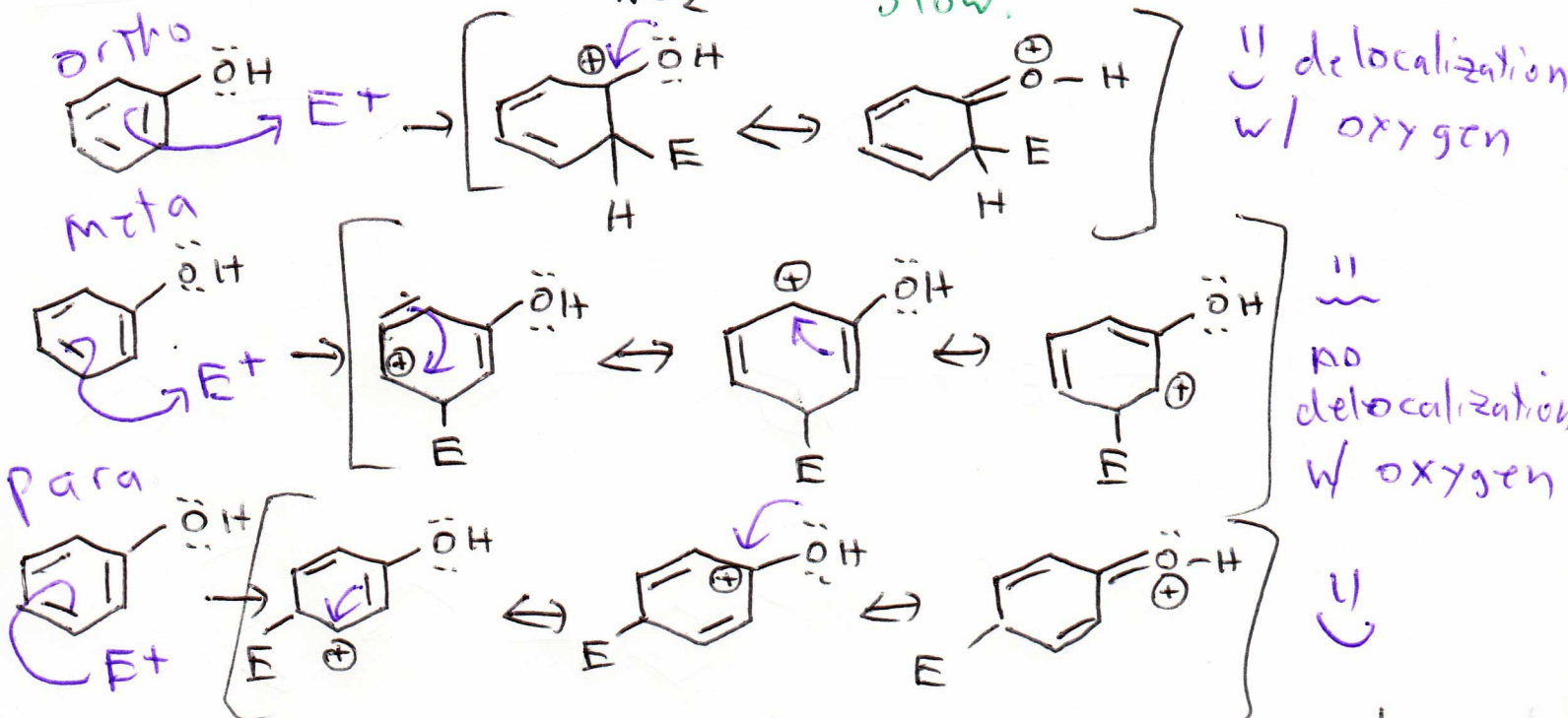




Fast.

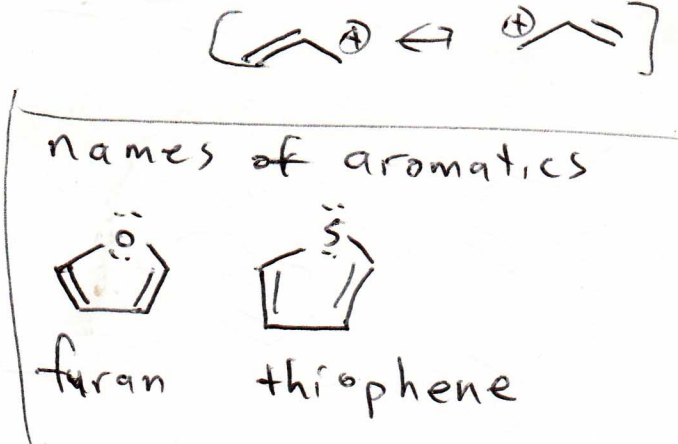
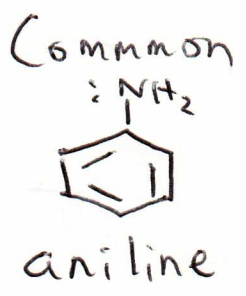


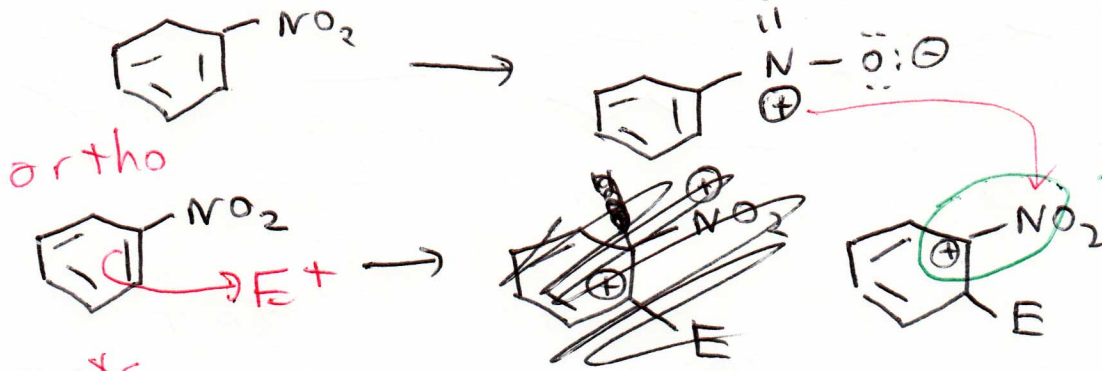
Meta only product that forms in large proportion, slow.



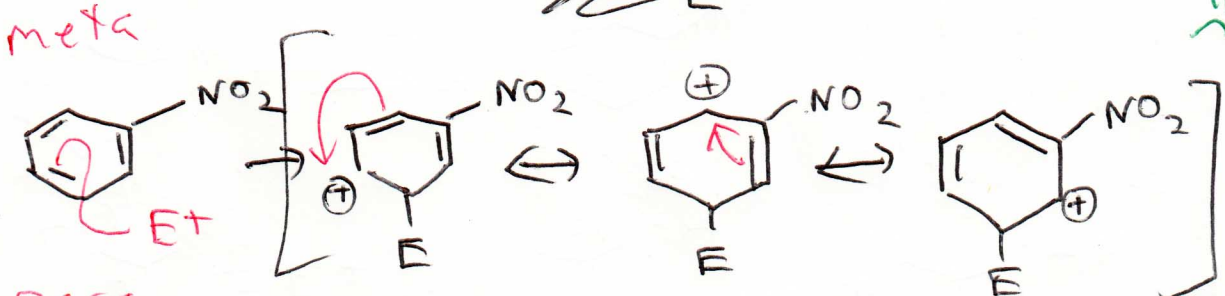
Because the intermediates formed by adding to the ortho + para positions allows for delocalization of the \oplus off of the ring, substitution @ the ortho + para positions is more favorable \rightarrow

ortho/para directors

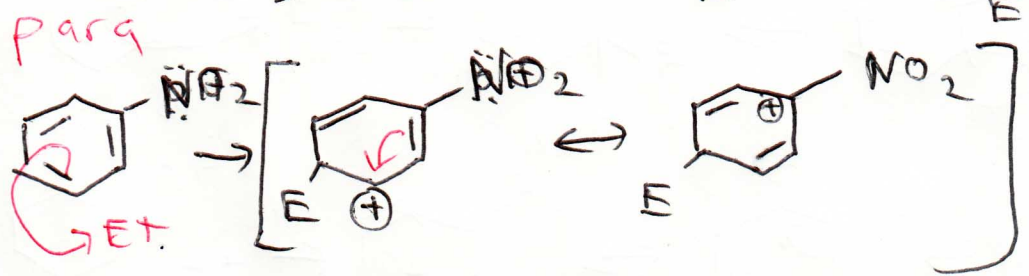




two \oplus charges right next to each other
 !! !!!



Two \oplus not neighboring



2 \oplus adjacent

Because the intermediate formed by adding to the ortho + para positions causes an unfavorable charge interaction, substitution occurs at the meta position instead \rightarrow meta directors