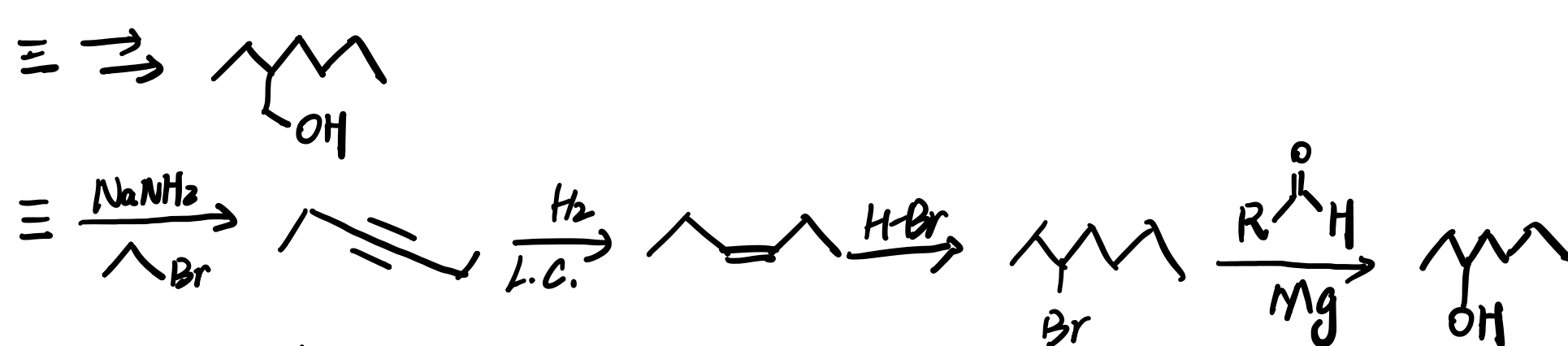


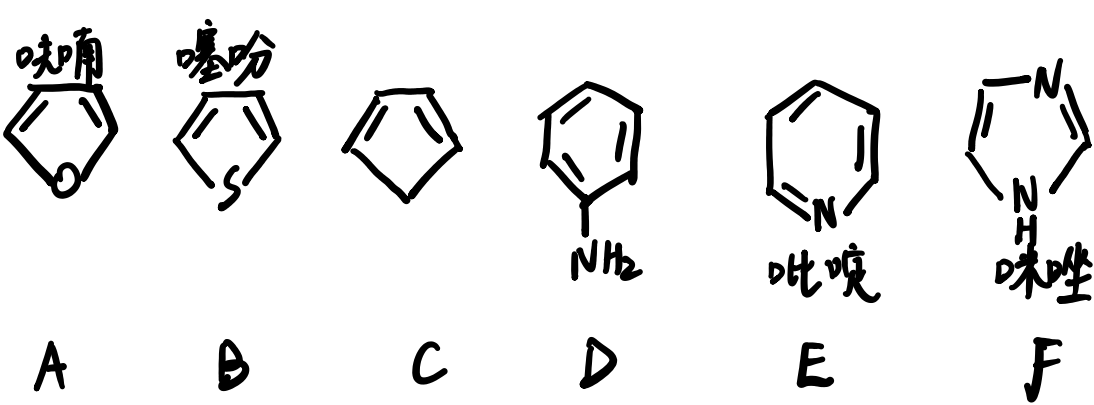


Aromaticity 芳香性

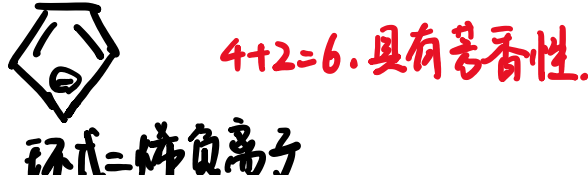
Hückel Rule

1) 环状, 平面结构 sp^2 杂化

2) $4n+2$ 电子



除C外都有芳香性



环戊二烯负离子

命名

Nomenclature

A. Monosubstituted benzenes

Ethylbenzene
 Chlorobenzene
 Nitrobenzene

The following are usually considered parent compounds:

Toluene
 Phenol
 Aniline
 Benzoic acid

phenyl 苯基
 benzyl 苄基

B. Disubstituted benzenes

邻
 间
 对

C. Polynuclear Aromatic Hydrocarbons

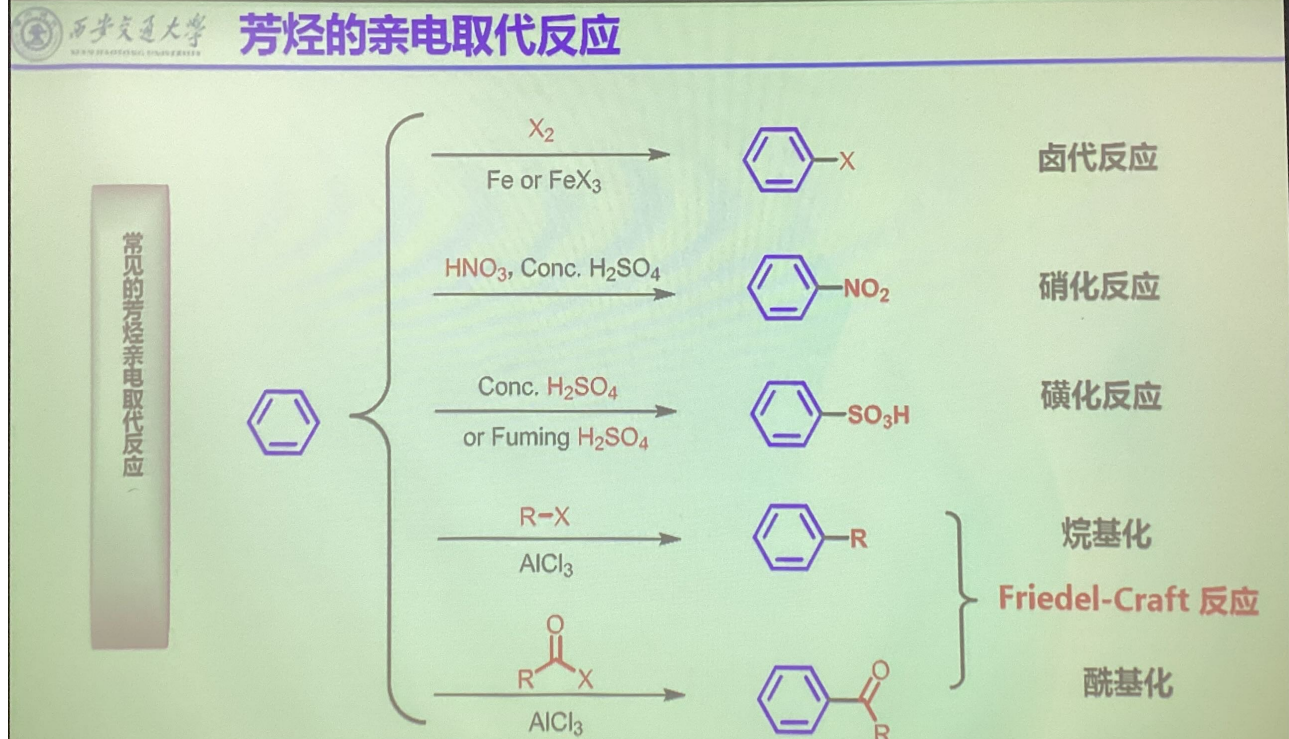
Naphthalene
 Anthracene

如果直径, 增长可以做有机导体

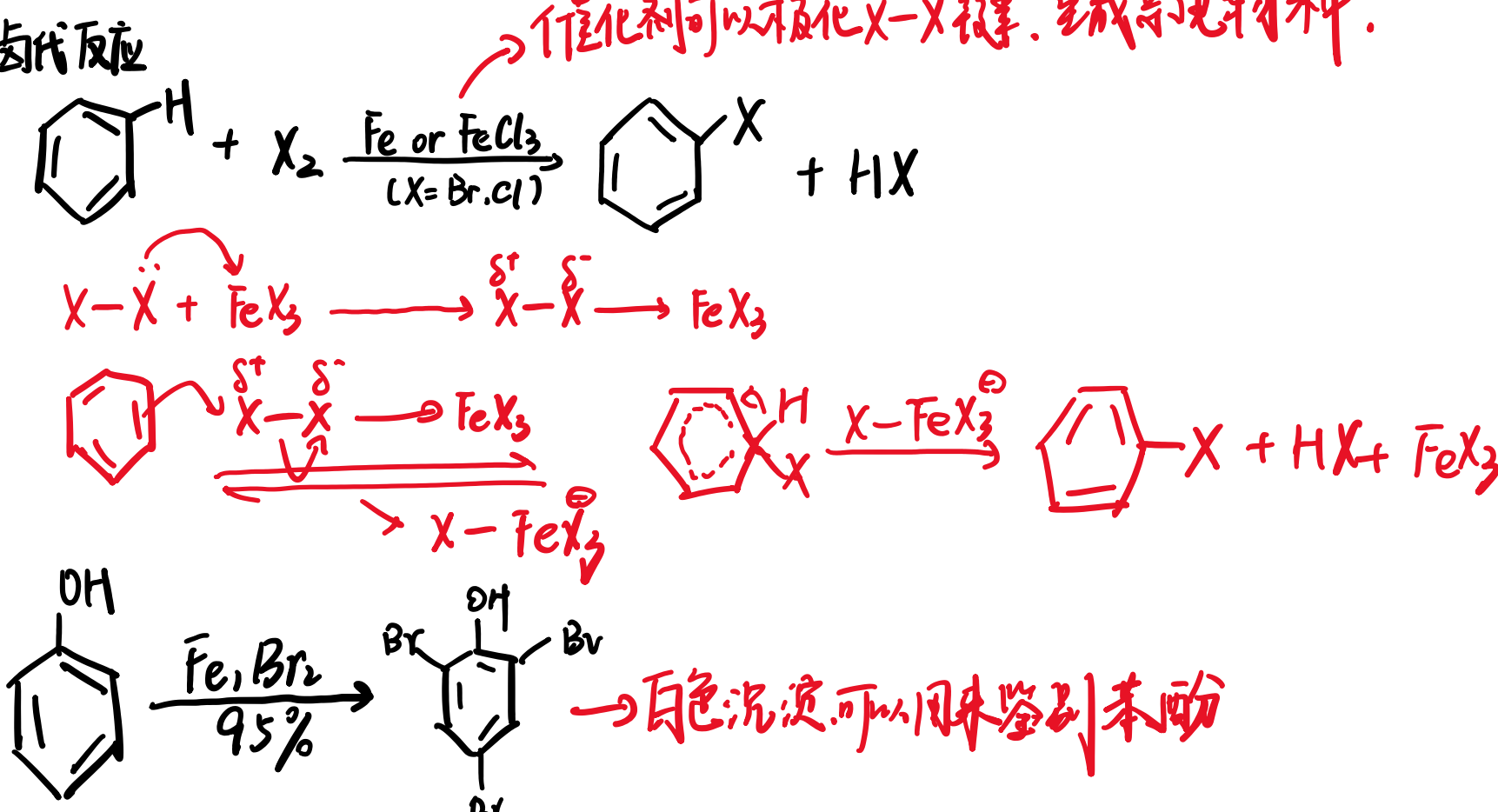
$-\text{NO}_2$ Nitro

芳烃的亲电取代反应

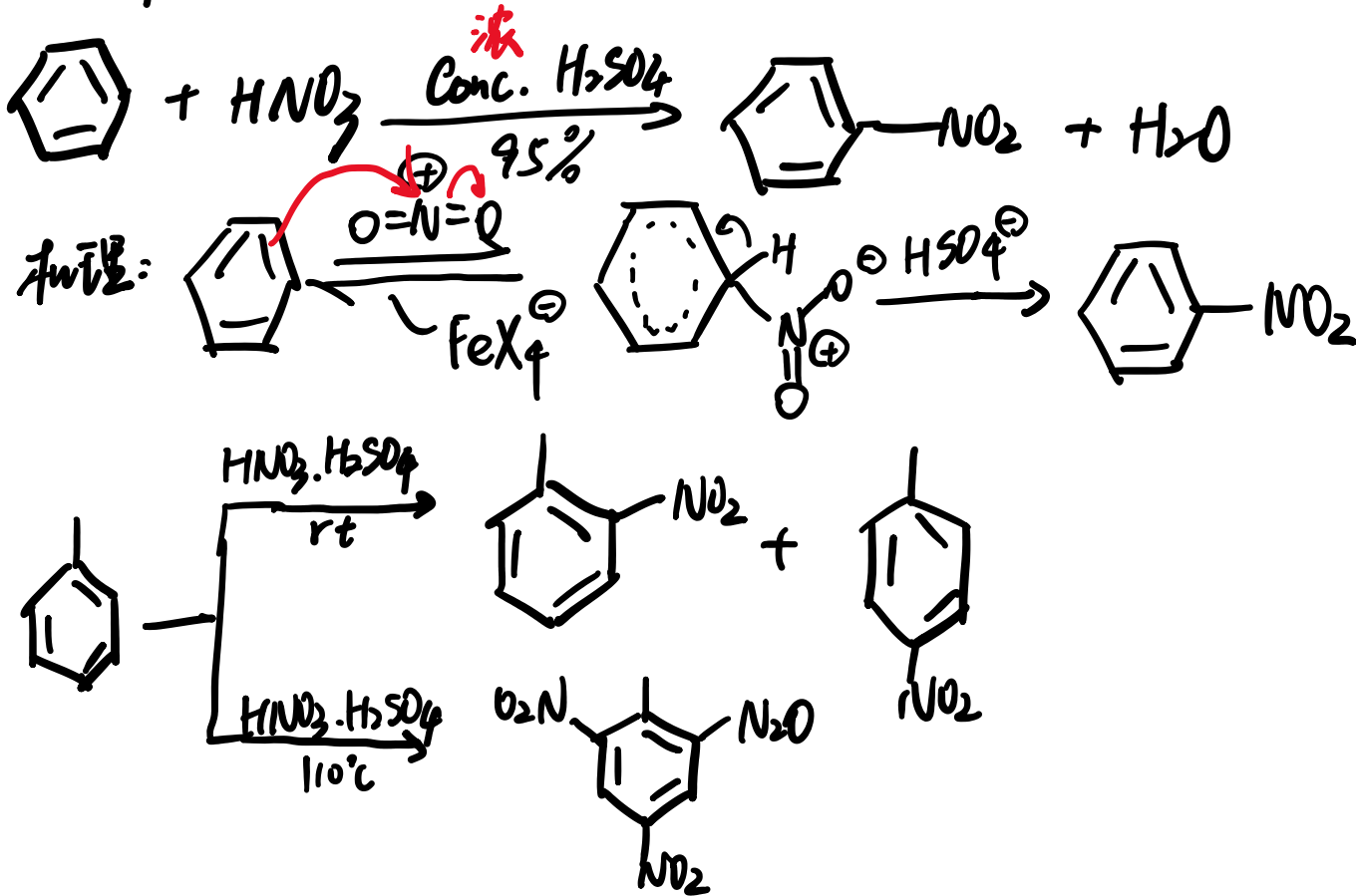
倾向发生取代反应, 不发生加成反应



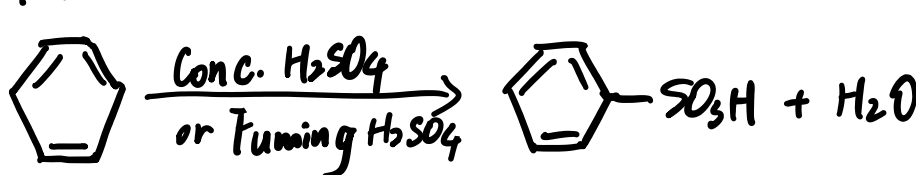
1. 卤代反应



2. 硝化反应



3. 磺化反应



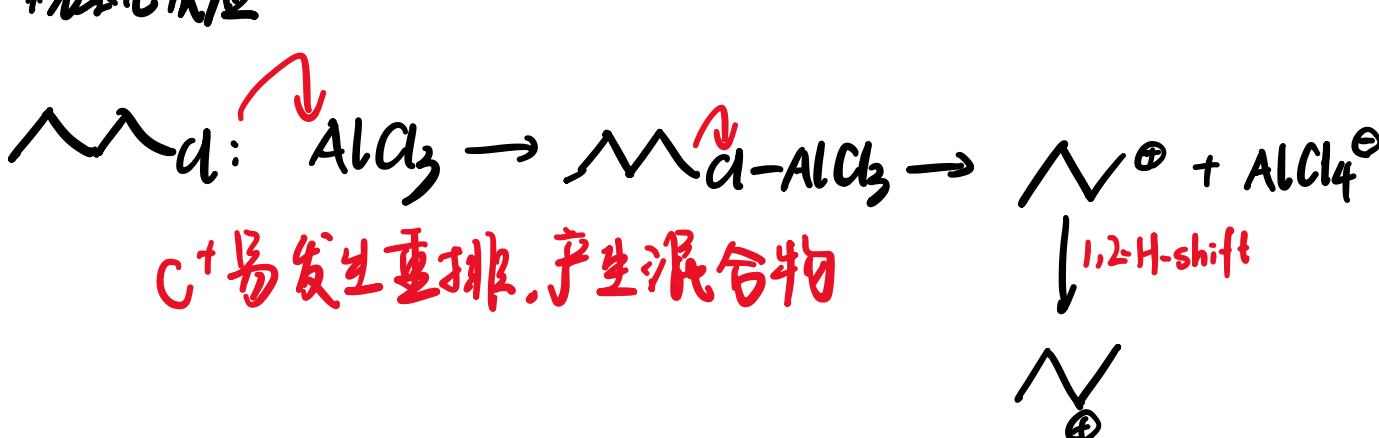
作用: 占位

Friedel-Craft

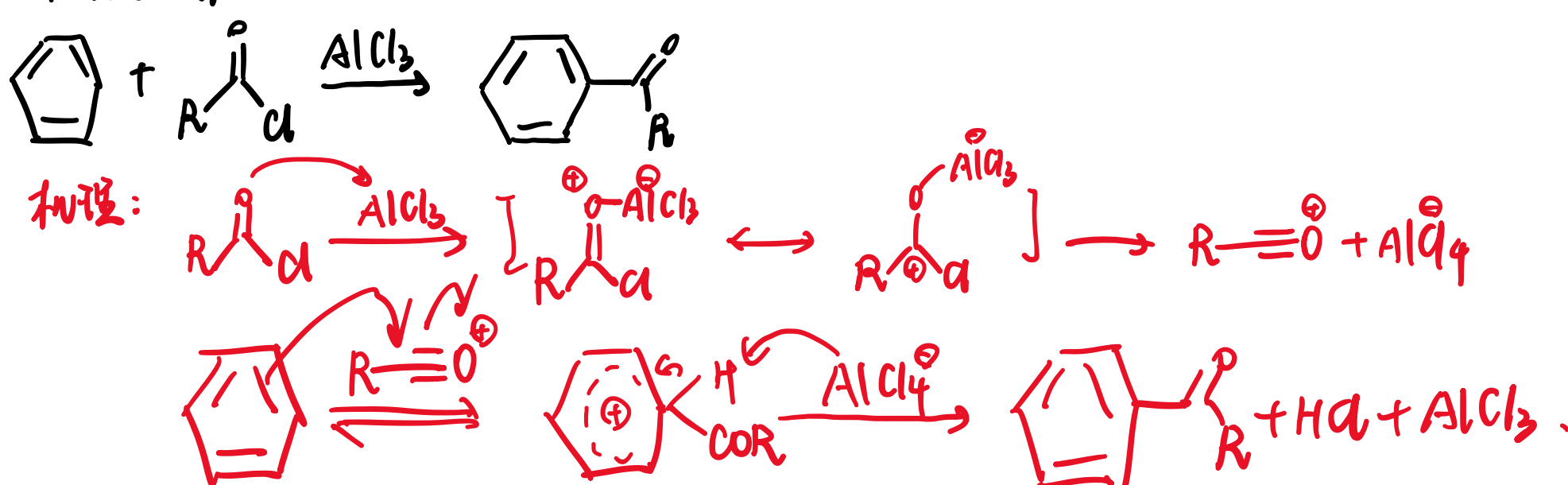
★黄鸡龙证据

F-C 不是很有用, 对C+重排

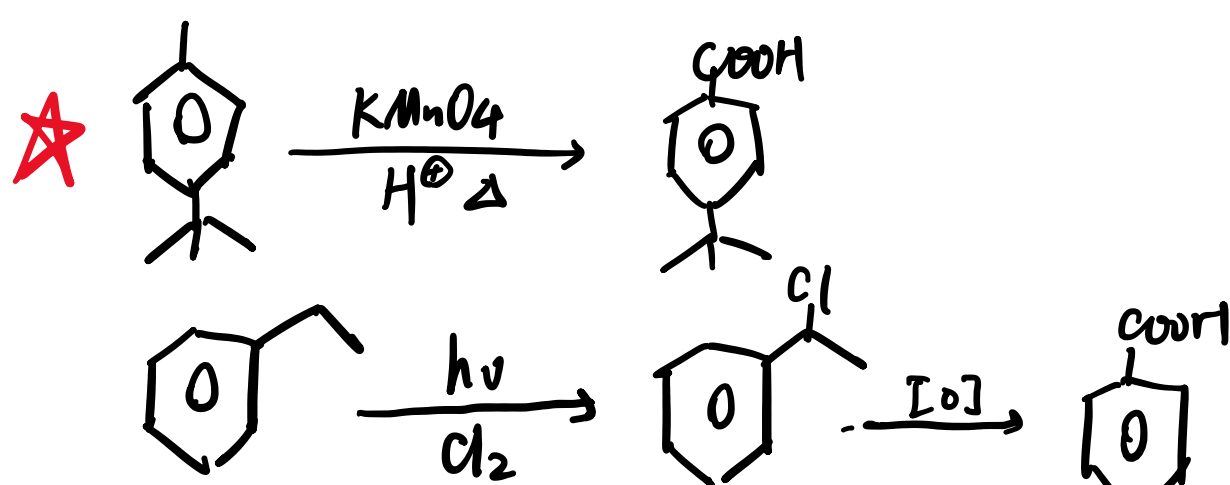
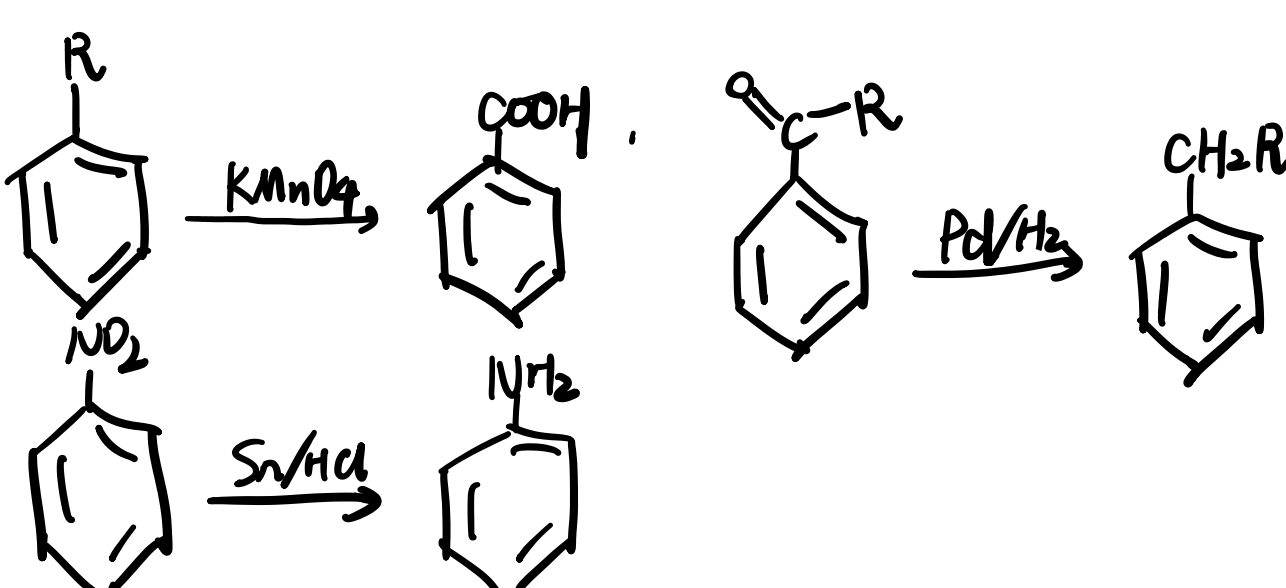
4. 烷基化反应



酰基化反应



有些基团不能直接引入, 需要进行转化: 如: $-\text{NH}_2$, $-\text{NHR}$, $-\text{NR}_2$, $-\text{NHCOCH}_3$, $-\text{COOH}$, $-\text{CN}$, $-\text{OH}$



甲苯的邻对位有甲基活性大

Amides are less activating than amines

酰胺

胺

由于:

