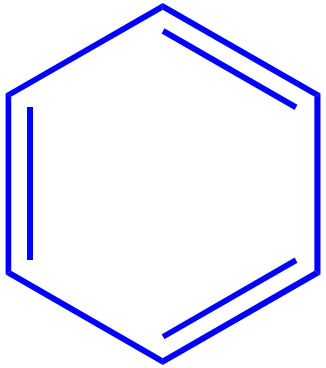
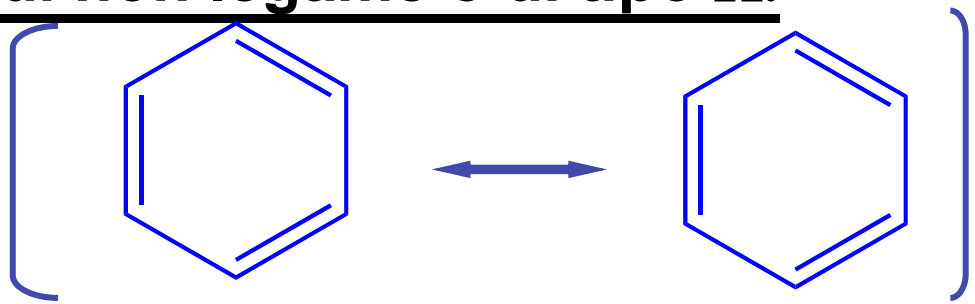
IL BENZENE



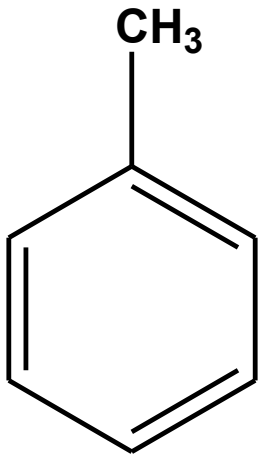
LA RISONANZA: la RISONANZA è una proprietà delle molecole per le quali una sola struttura di Lewis è inadeguata a descriverne la reale struttura. Perciò, la struttura di risonanza è in realtà un ibrido tra 2 o più strutture di Lewis, che differiscono solo per la posizione

di elettroni di non legame o di tipo Π.

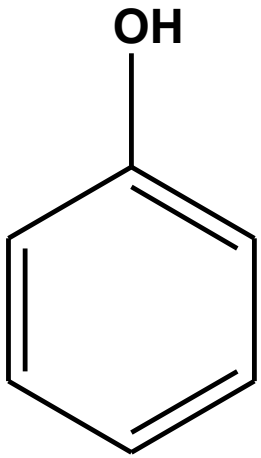


IL BENZENE DISOSTITUITO
NOMENCLATURA

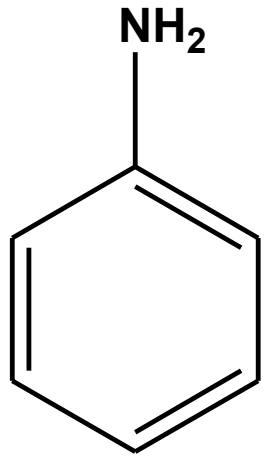
I SOSTITUENTI SONO ELENCATI IN ORDINE ALFABETICO E NUMERATI SECONDO L'ORDINE ALFABETICO, A MENO CHE UNO DEI SOSTITUENTI NON POSSA ESSERE INCORPORATO IN UN NOME SPECIFICO:



TOLUENE

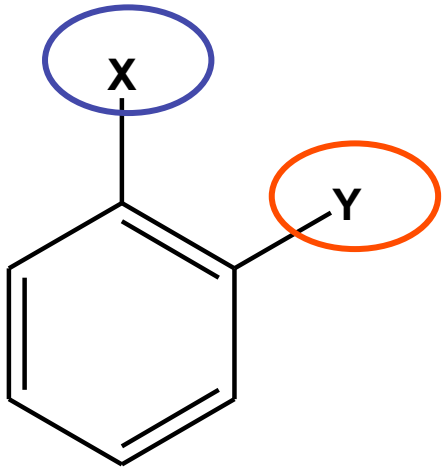


FENOLO

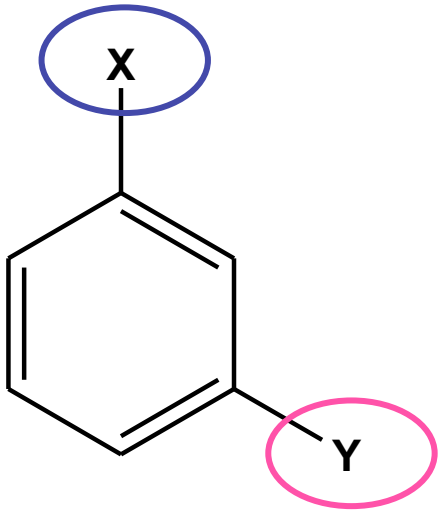


ANILINA

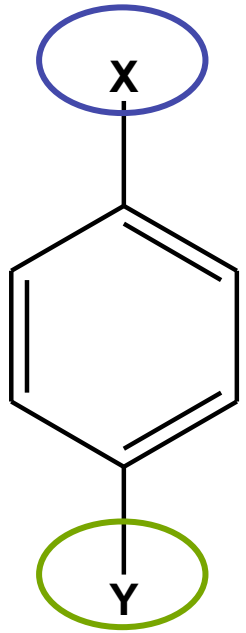
IL BENZENE DISOSTITUITO: NOMENCLATURA



Posizione 1,2: ORTO

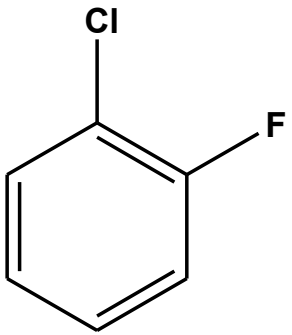


Posizione 1,3: META

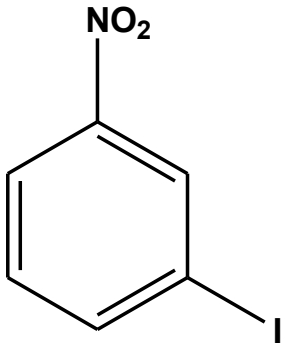


Posizione 1,4: PARA

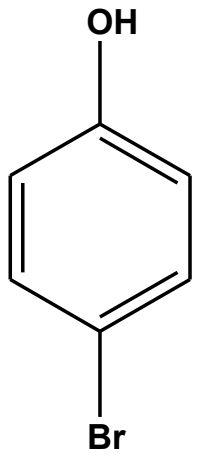
IL BENZENE DISOSTITUITO
NOMENCLATURA



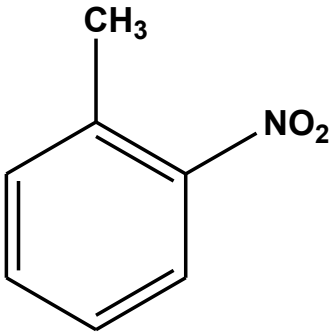
1-Cloro-2-fluoro benzene
Orto-clorofluorobenzene



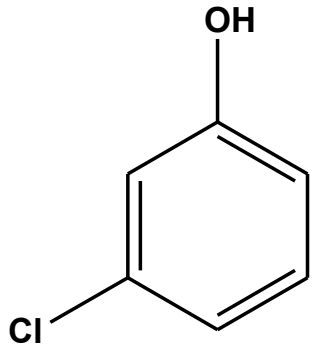
1-iodo-3-nitro benzene
meta-iodonitrobenzene



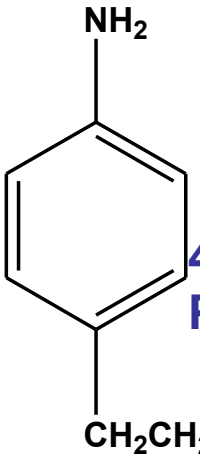
4-bromofenolo
Para-bromofenolo



2-nitrotoluene
orto-nitrotoluene



3-clorofenolo
Meta-clorofenolo



4-propilanilina
Para-propilanilina

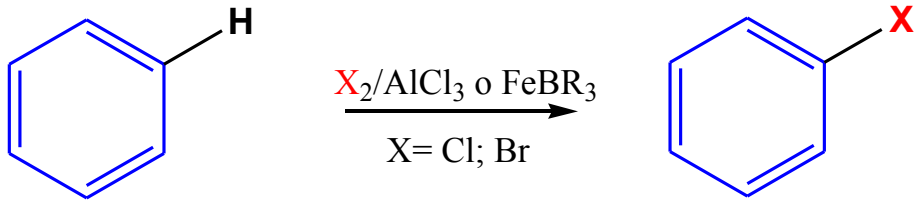
IL BENZENE: REAZIONI

1) SOSTITUZIONE ELETTROFILA AROMATICA (SEA)

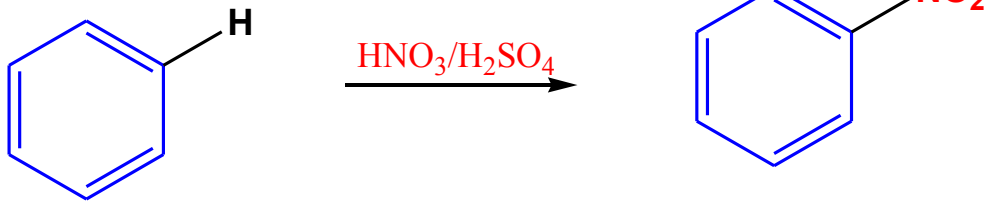
2) SOSTITUZIONE NUCLEOFILA AROMATICA su alogenobenzeni (SNA)

1) SOSTITUZIONE ELETTROFILA AROMATICA (SEA)

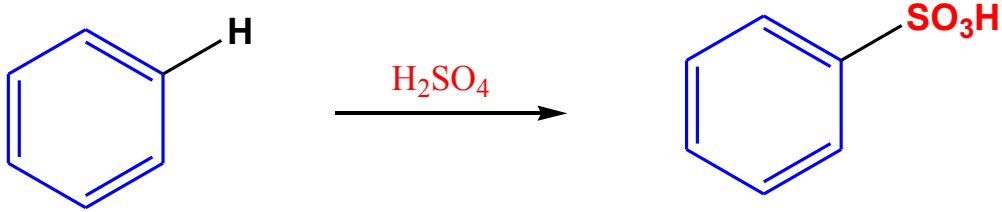
ALOGENAZIONE:



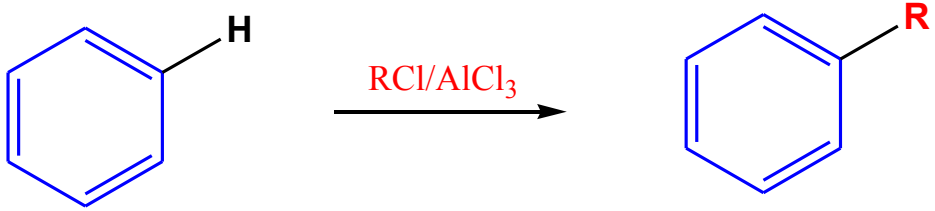
NITRAZIONE:



SOLFONAZIONE:

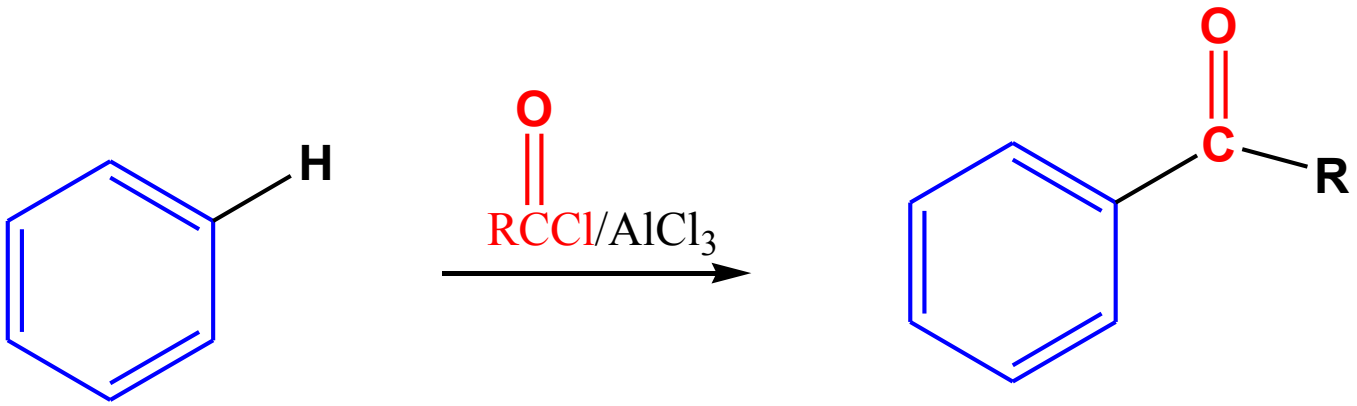


ALCHILAZIONE DI FRIEDEL AND CRAFTS:



1) SOSTITUZIONE ELETTROFILA AROMATICA (SEA)

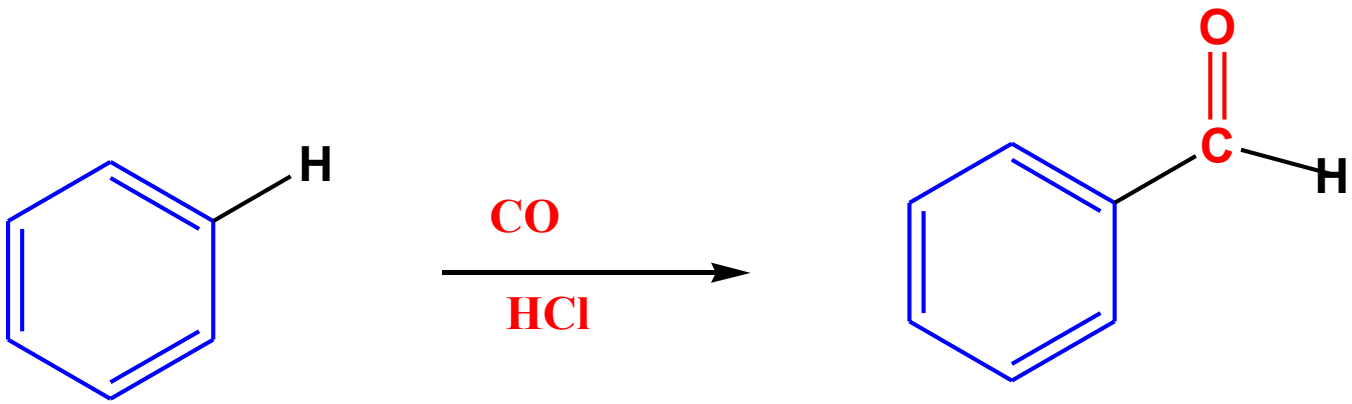
ACILAZIONE DI FRIEDEL AND CRAFTS:



SERVE AD INSERIRE UNA CATENA CARBONIOSA SU UN ANELLO AROMATICO DI ALMENO DUE ATOMI DI CARBONIO

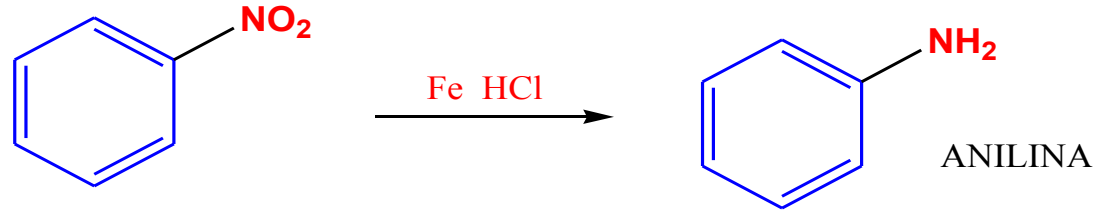
1) SOSTITUZIONE ELETTROFILA AROMATICA (SEA)

GATTERMAN KOCH:

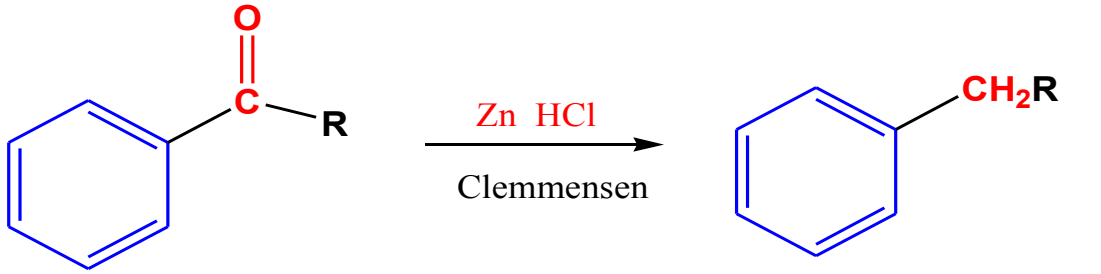


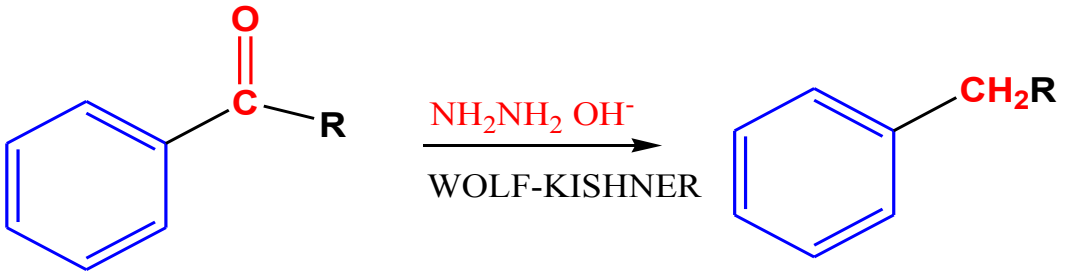
SERVE AD INSERIRE SU UN ANELLO AROMATICO UN SOLO ATOMO DI CARBONIO

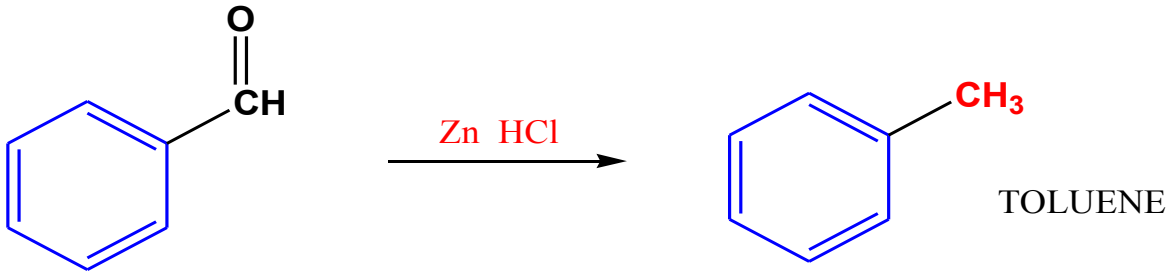
RIDUZIONI DI BENZEN- DERIVATI:



ANILINA

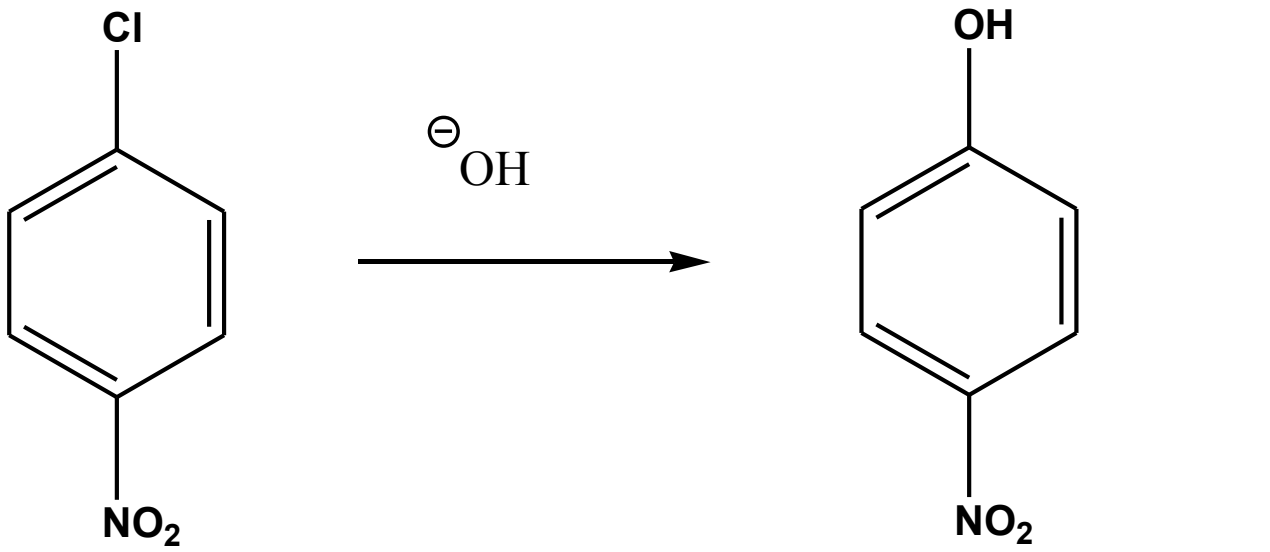


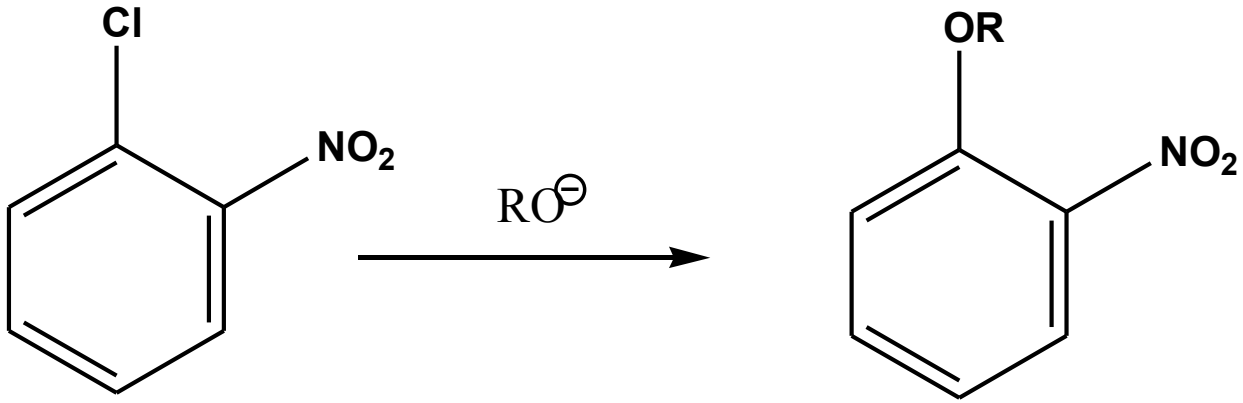




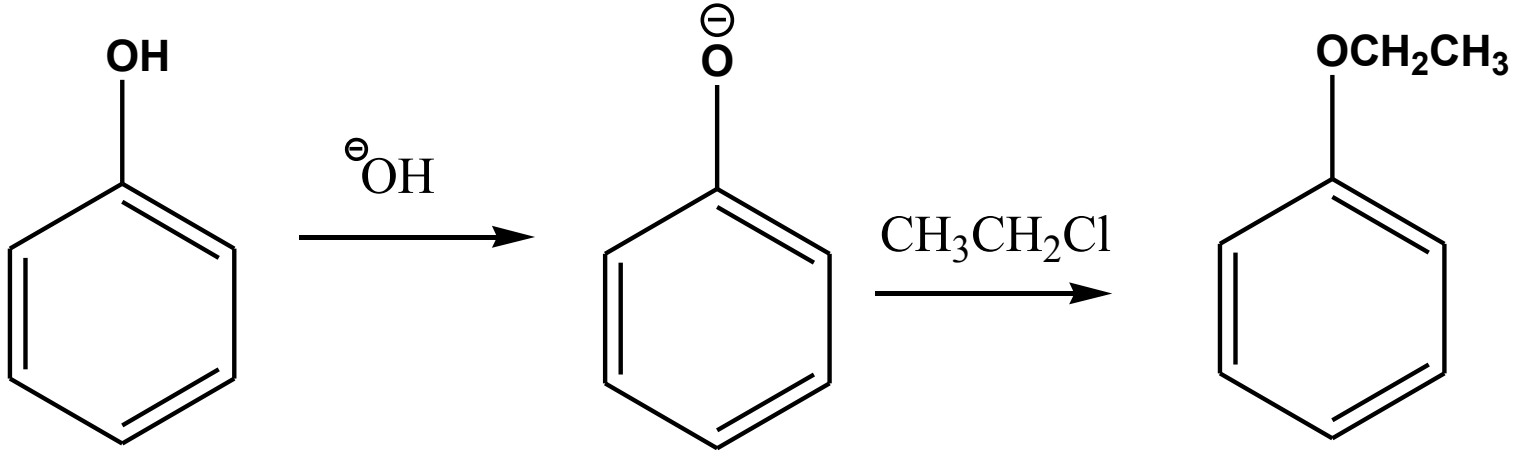
TOLUENE

2) SOSTITUZIONE NUCLEOFILA AROMATICA (SNA): PRIMO MECCANISMO

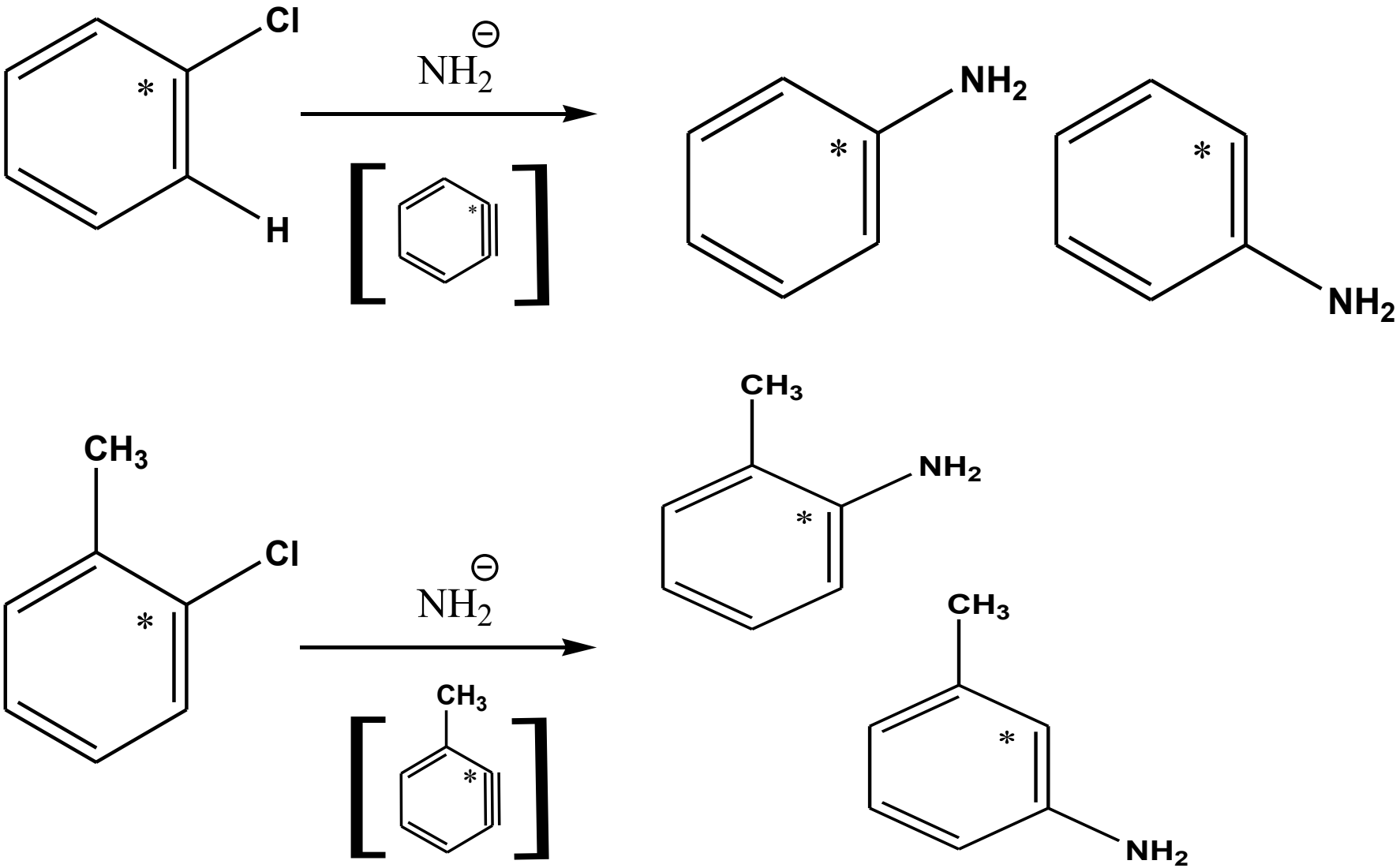




SINTESI DI WILLIAMSON PER ETERI AROMATICI



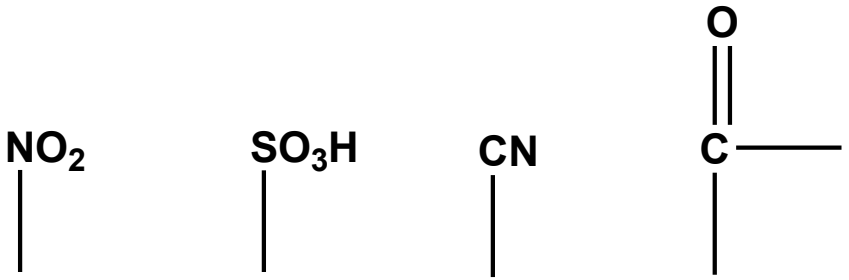
2) SOSTITUZIONE NUCLEOFILA AROMATICA (SNA): SECONDO MECCANISMO VIA BENZINO; SOLO IN PRESENZA DI BASI FORTISSIME COME NH_2^-



IL BENZENE DISOSTITUITO
REATTIVITA'

1) GRUPPI ATTIVANTI ORTO E PARA ORIENTANTI

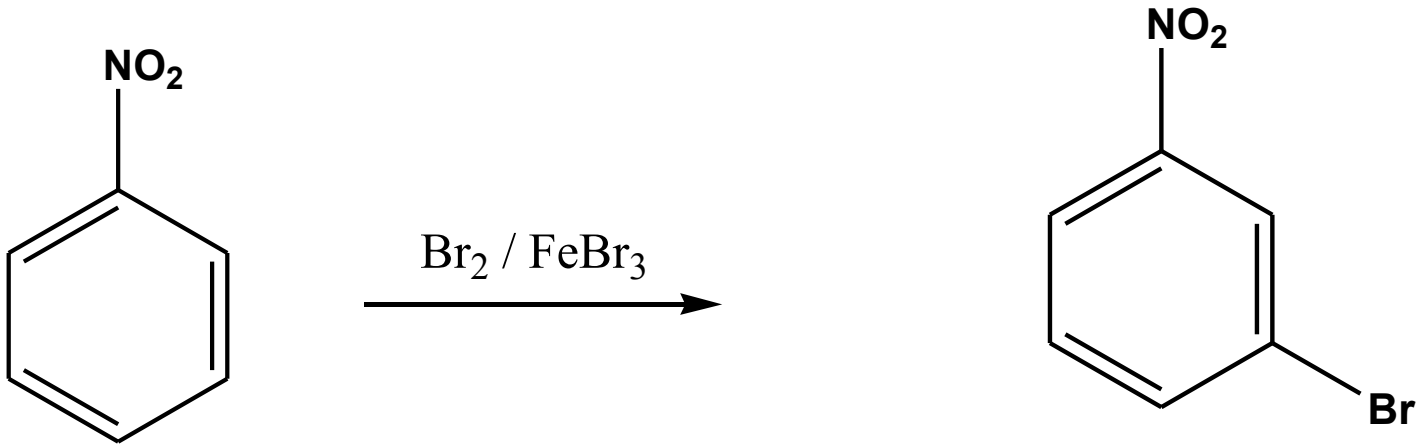
2) GRUPPI DISATTIVANTI META ORIENTANTI

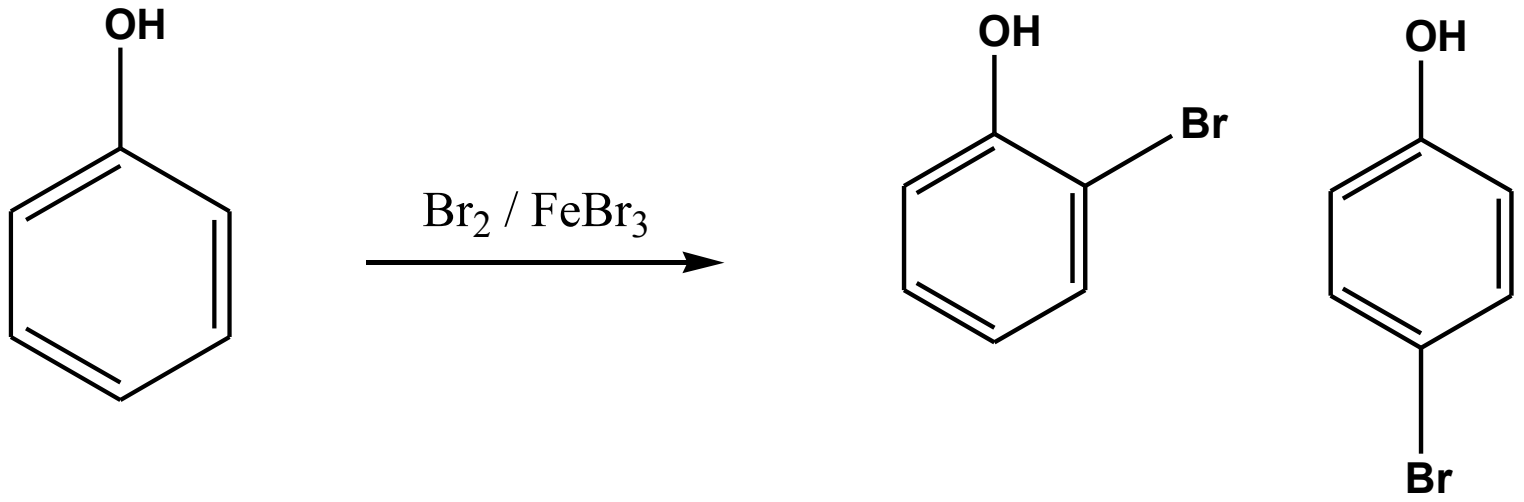


3) GRUPPI DISATTIVANTI ORTO E PARA ORIENTANTI

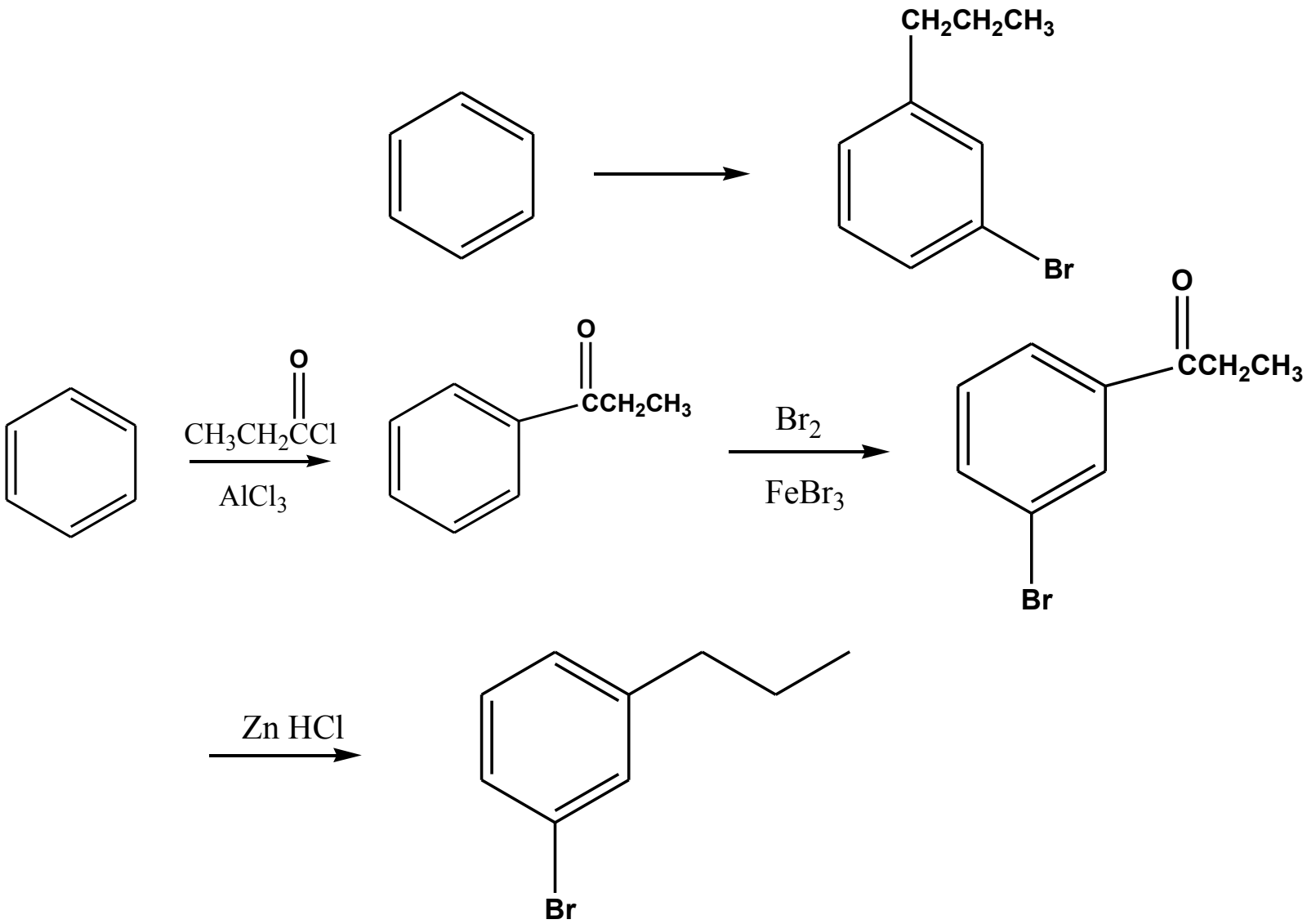
ALOGENI

IL BENZENE DISOSTITUITO
REATTIVITA'

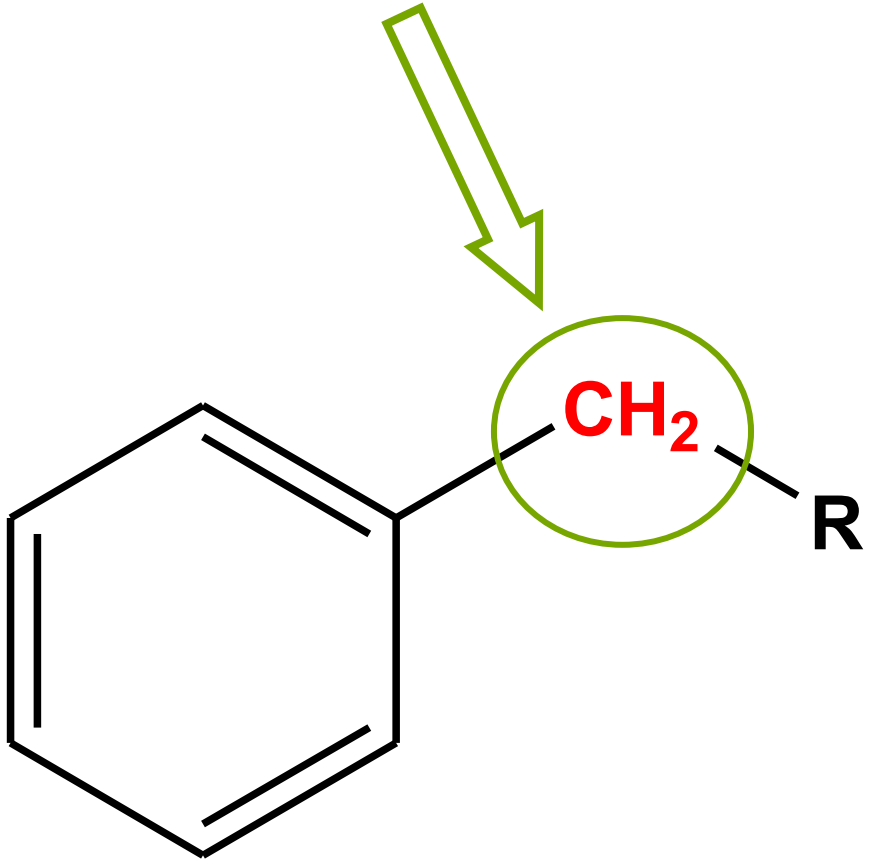




IL BENZENE DISOSTITUITO
REATTIVITA'

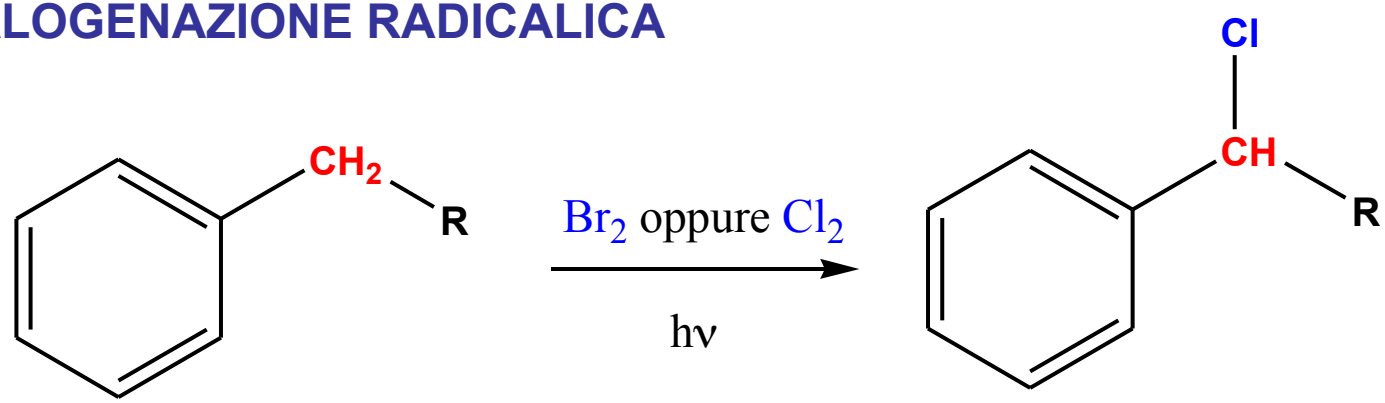


LA POSIZIONE BENZILICA

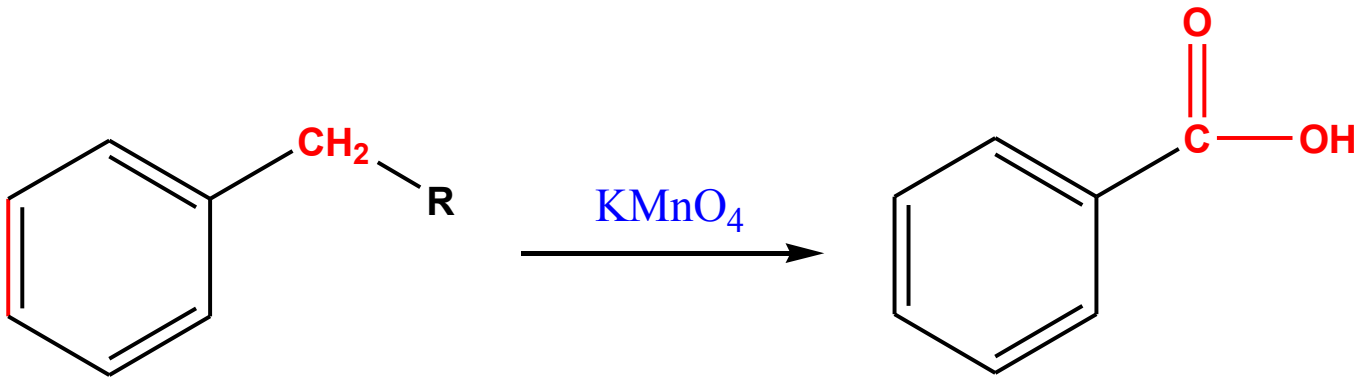


LA POSIZIONE BENZILICA: REATTIVITA'

ALOGENAZIONE RADICALICA



OSSIDAZIONE SPINTA



ASSEGNO