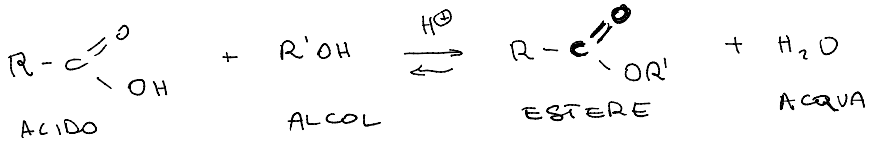
ALCOLI

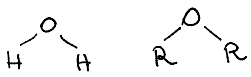
SINTESI DEGLI ESTERI DI FISCHER



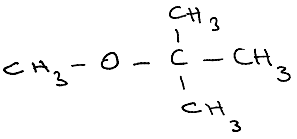
ACIDO CARBOSSILICO + ALCOL ⇌ ESTERE + ACQUA

60%

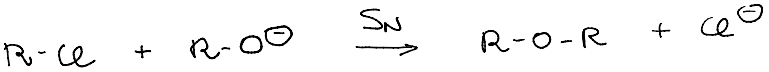
SINTESI DEGLI ETERI DI WILLIAMSON



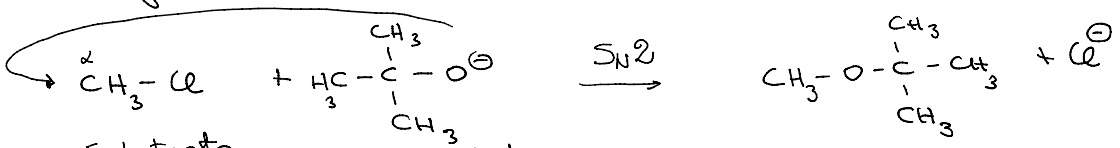
ETERE



t-butile metile etere



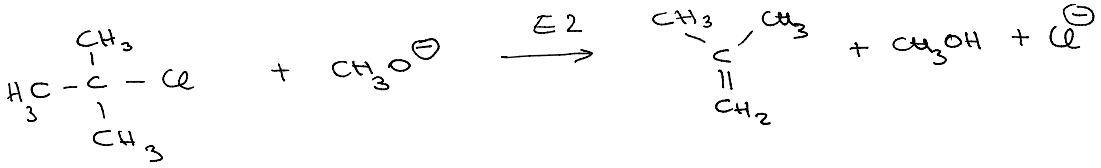
Per "funzionare" deve essere una S_N2



Substrato metilico

S_N2

Base forte
Nu ingedito stericamente



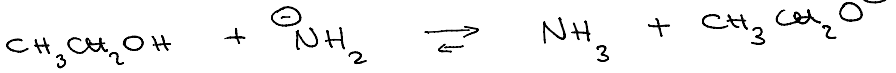
Substrato Terziario

~~$S_N1/E1$~~

E2

Fonte

Come posso ottenere lo ione alcolato?

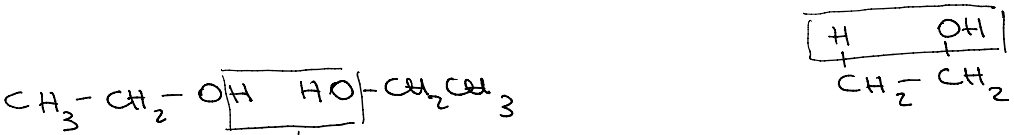
① 

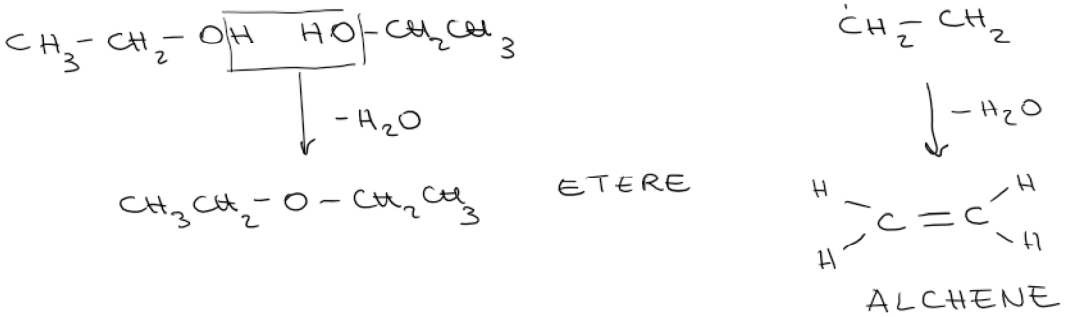
Reazione acido-base

② 

Reazione di ossido-riduzione

DISIDRATAZIONE (perdita di H_2O)

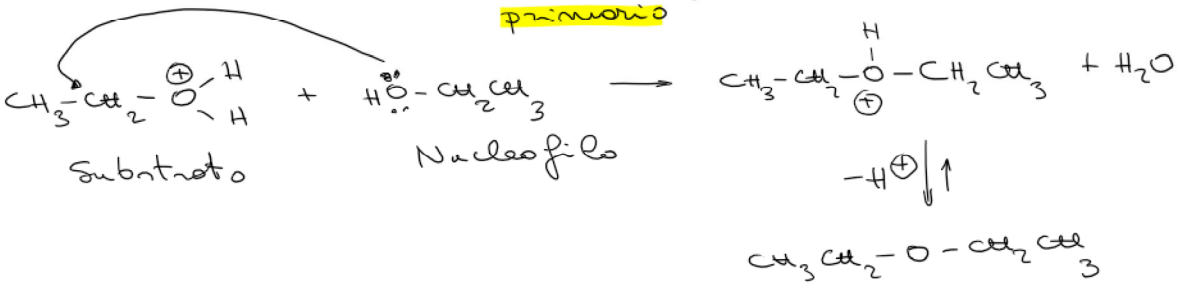




S_N che fronte all'etere

① $CH_3CH_2OH \xrightarrow{H_2SO_4}$ $CH_3-CH_2-\overset{\oplus}{O}(H)-H + HSO_4^{\ominus}$

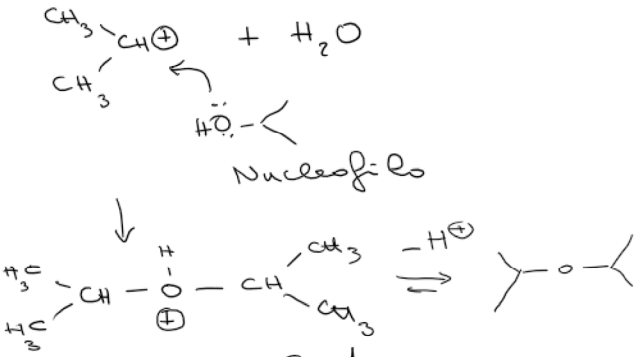
Buon substrato per S_N2 primario



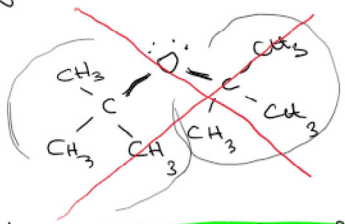
② $(CH_3)_2CH-OH + H_2SO_4 \rightleftharpoons$ $+ HSO_4^{\ominus}$

Buon substrato per S_N1 secondario

↓ 1° Stadio (lento)



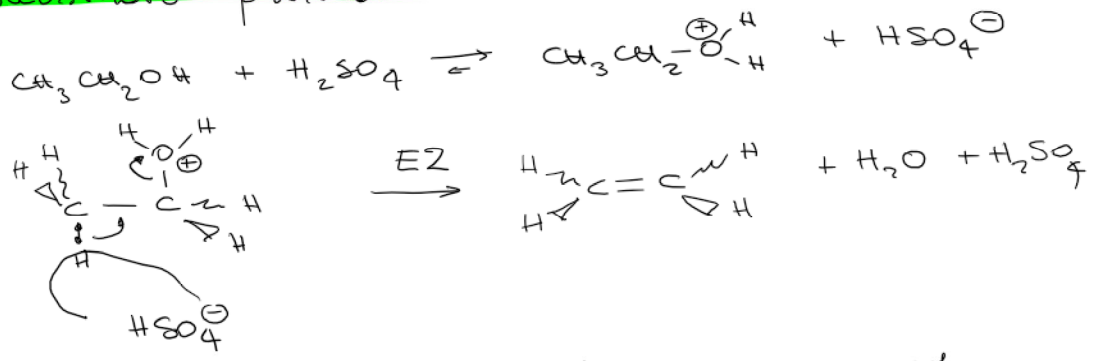
③ Gli alcoli terziari non danno S_N1 perché gli eteri corrispondenti non si formano causa ingombro sterico



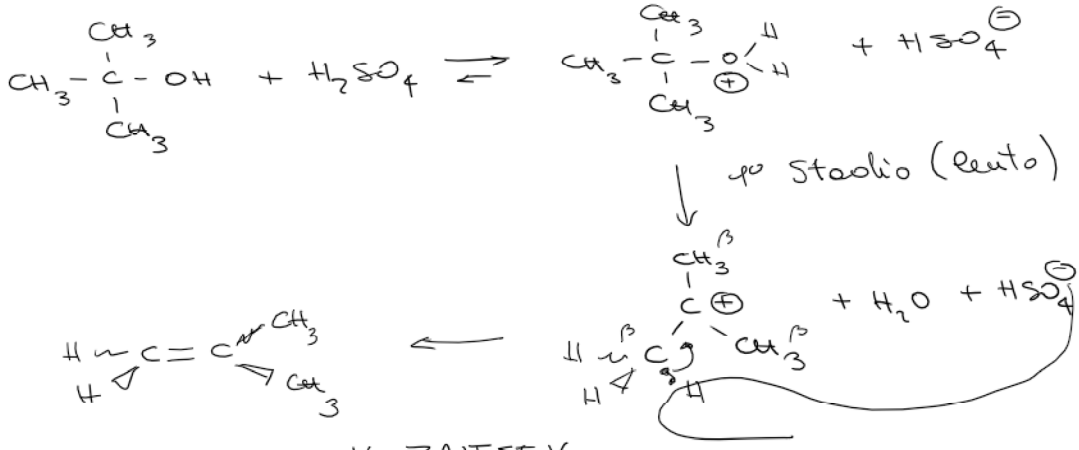
E che fronteno ad Alcheni

E che fanno gli Alcheni

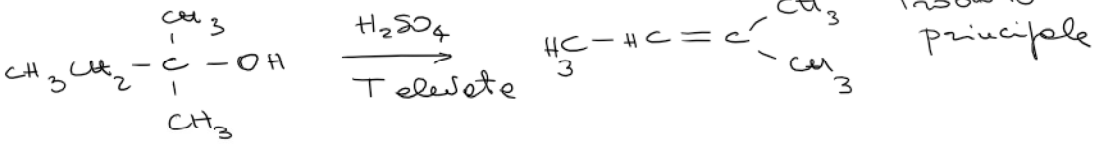
① **Substrato primario → E2**



② **Substrato secondario o terziario → E1**

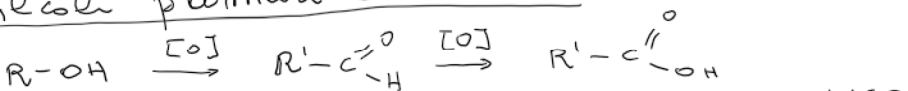


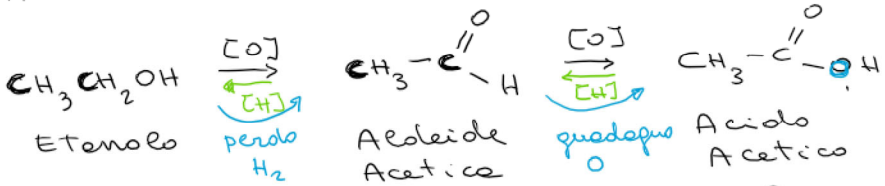
Vale la regola di ZAITSEV

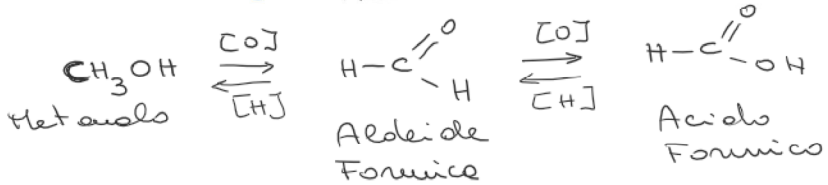


OSSIDAZIONE

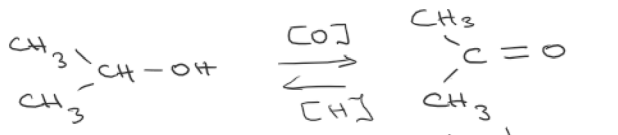
Alcoli primari o metilici







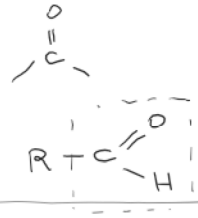
Alcoli secondari



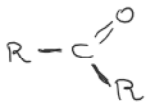
Alcol isopropilico — Acetone

Ossidanti:
- $KMnO_4$
- HNO_3
- Cr_2O_3
- H_2CrO_4
- $Na_2Cr_2O_7$

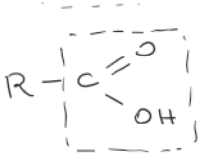
COMPOSTI CARBONILICI (gruppo carbonilico)



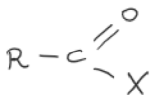
gr. aldeidico — ALDEIDE



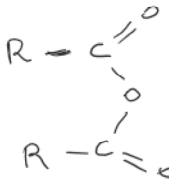
CHETONE



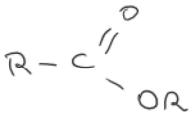
gr. carbonilico — ACIDI CARBOSSILICI



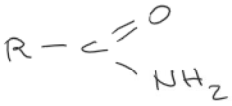
ALOGENURI ACILICI



ANIDRIDI



ESTERI

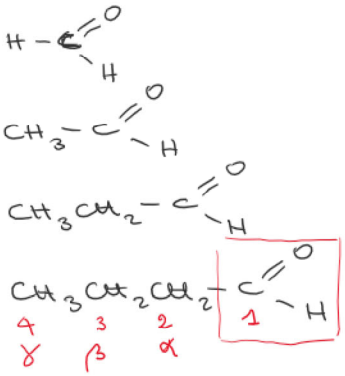


AMMIDI

ALDEIDI e CHETONI

Nomenclature delle Aldeidi

IUPAC (desinenza ALE)



metanALE

etanALE

propanALE

butanALE

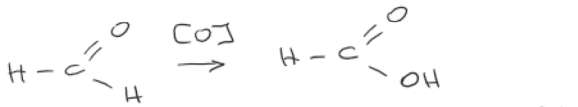
COMUNE

aldeide formica

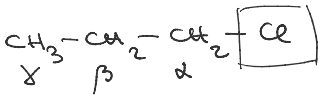
aldeide acetica

aldeide propionica

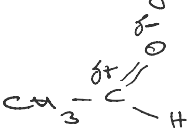
aldeide butirrica



ALDEIDE FORMICA — ACIDO FORMICO



Proprietà fisiche: le aldeidi hanno PE intermedi tra gli alcoli e gli alcani di pari PM



CH_3CH_2-OH PE maggiore

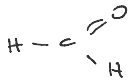
Leg. intermolecolari: leg e H

$CH_3CH_2CH_3$ PE inferiore

Forze di London

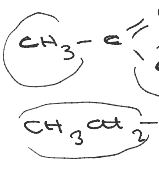
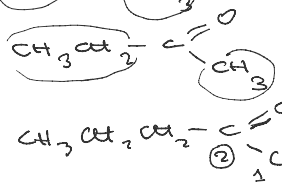
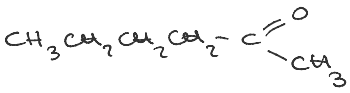
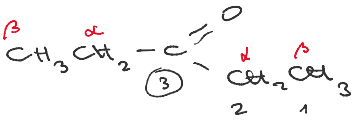
PE intermedio

Dipolo-dipolo



gas molto solubile in H_2O

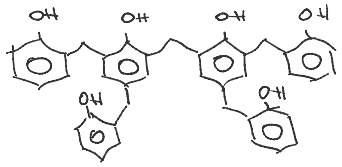
Nomenclature dei chetoni

	IUPAC (desinenza: ONE)	COMUNE
	propanONE	DIMETIL CHETONE
	butanONE	ETIL METIL CHETONE
	2-pentanONE	METIL PROPIL CHETONE
	2-esanONE	BUTIL METIL CHETONE
	3-pentanONE	DIETILCHETONE

Usi della formaldeide

① FORMALINA soluzione per conservare campioni biologici

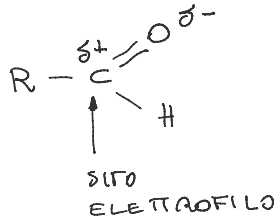
② POLIMERI FENOLO-FORMALDEIDE



③ COLLANTI (COMPENSATI)

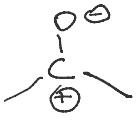
④ ISOLANTI PER L'EDILIZIA

REAZIONI ADDIZIONE NUCLEOFILA AL C CARBONILICO



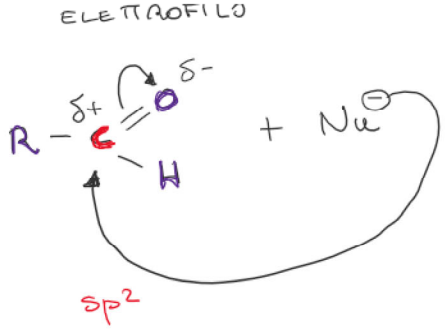
SITO ELETTROFILO

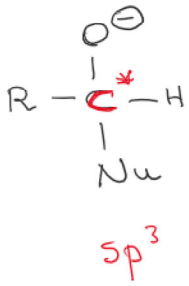
Si ritiene che il legame carbonilico sia per il 50% di carattere ionico



Entrambi

ELETTROFILO

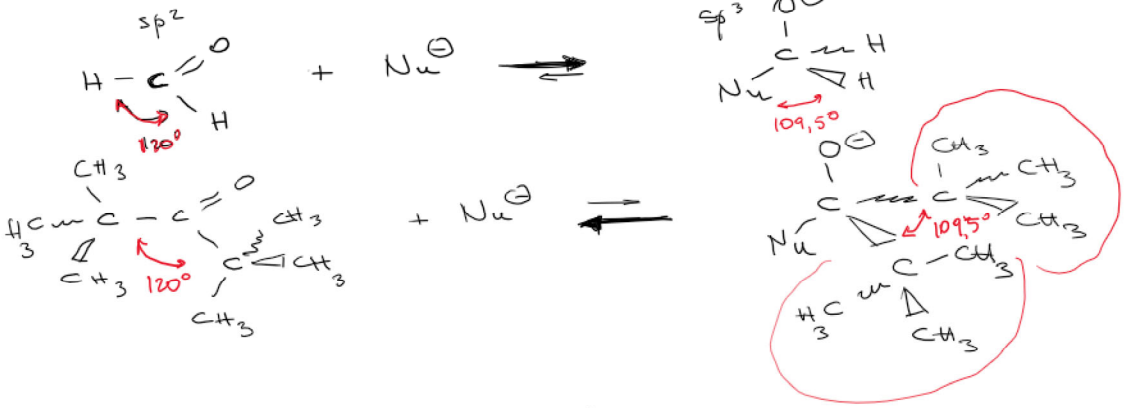




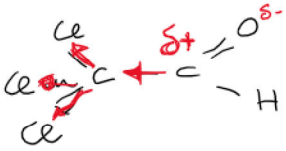
Entrambi gli enantiomeri

L'addizione nucleofila è influenzata da effetti sterici ed effetti elettronici.

EFFETTI STERICI

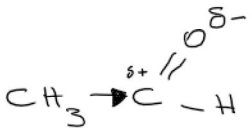


EFFETTI ELETTRONICI

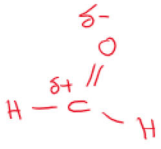


CLORALIO

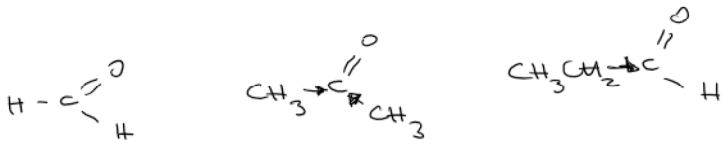
Più reattivo



Acetoaldeide



I gruppi elettron attrattori aumentano la carica elettronica sul C carbonilico e favoriscono l'attacco del Nu



2° 4° 3° 1°

più reattivo

Le aldeidi sono generalmente più reattive dei chetoni sia per effetto elettronico che per effetto sterico.