

## Organic Chemistry

Electronegativity : The measure of the tendency of chemically bonded atom to attract a shared pair of electrons is known as Electronegativity.

### Order of electronegativity

$H < C < S < I < Br < Cl < N < O < F$

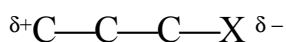
### Inductive Effect +I and -I effect

The permanent effect where by polarity is induced on the carbon atom and the substituent attached to it due to minor displacement of bonding electron pair caused by their difference in electronegativities

Groups attracting electrons are said to have -I effect and they develop a -ve charge  $\delta^-$   
 $R-X^{\delta-}$  X = -I groups

Groups releasing electrons are said to have +I effect. And they develop a +ve charge  $R \leftarrow Y$  Y = +I effect

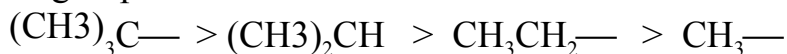
This effect is seen in a  $\sigma$  bond and its effect diminishes very much after 3 or 4 carbon atoms.



-I group

$NO_2 > -CN > COOH > F > Cl > Br > I > -OH > -OCH_3 > -C_6H_5 > H$

+I group



Electrophiles; or electrophilic reagent; electron loving groups with -I effect are electron deficient such reagents are called electrophiles.

Positive electrophiles;  $H^+$ ,  $Cl^+$ ,  $Br^+$ ,  $NO_2^+$ ,  $NO^+$ ,  $H_3O^+$ ,  $C$