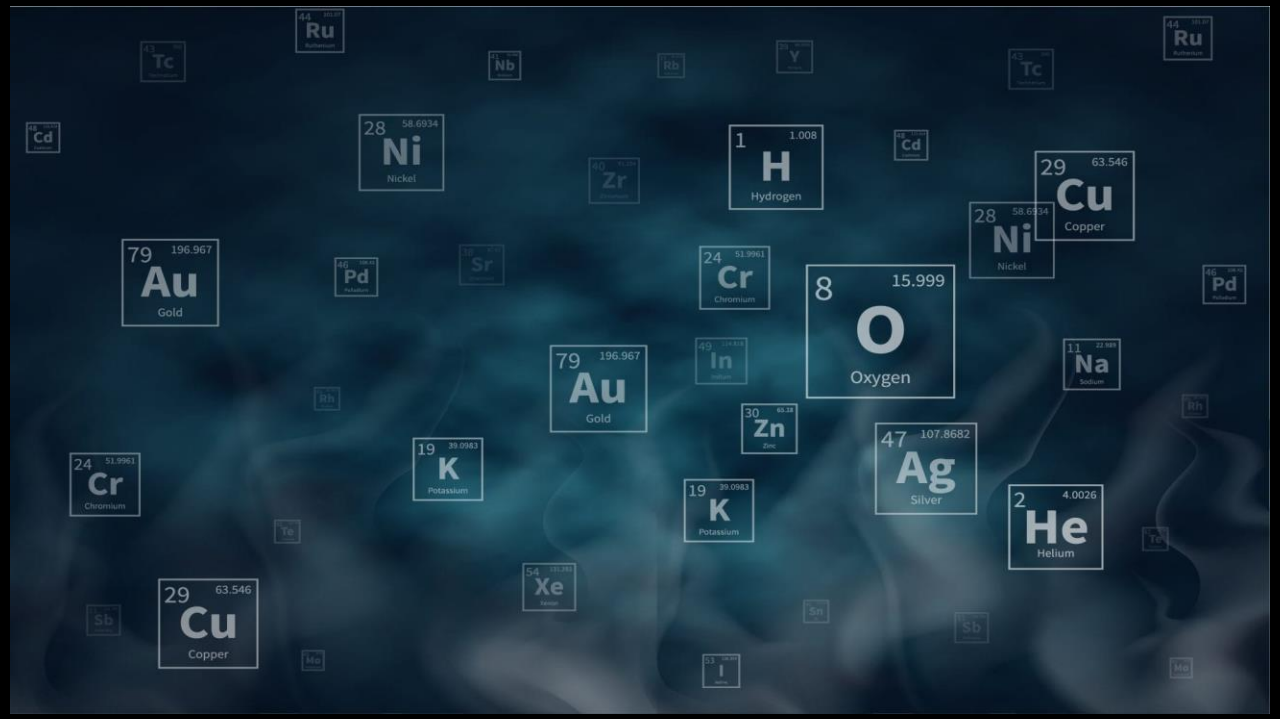


Classification of elements

Lecture -6

→ factors affecting IE:

iii) Shielding effect (Screening effect)

Shelding of nucleus from e^- of outermost shell by inner e^-.

order of shielding:

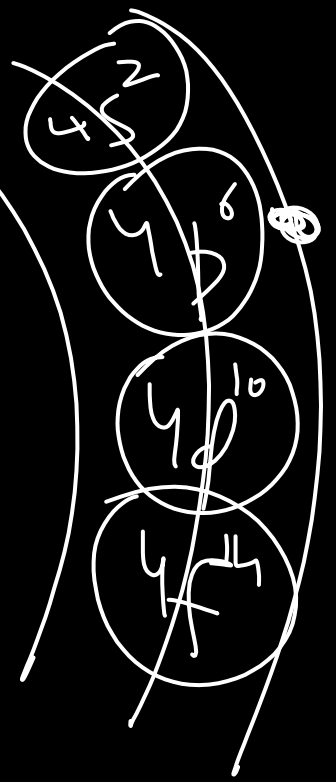
s > p > d > f

good shielders

Bad shielders

→ SET Size↑ IE↓

→ SE↓ Size↓ I.E↑



iv) Penetration effect:-

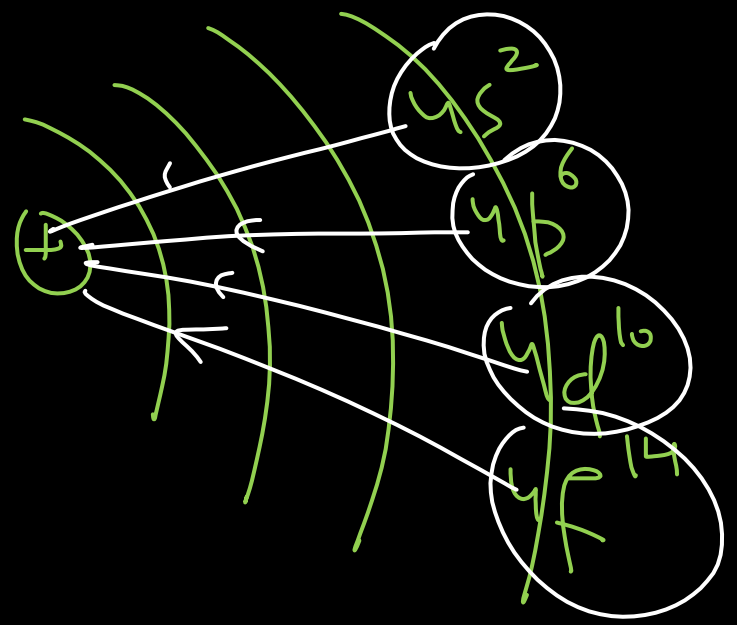
Tendency of outermost shell to penetrate towards nucleus

order of penetration effect:

$$s > p > d > f$$

→ P.E ↑ Size ↓ I.E ↑

→ P.E ↓ Size ↑ I.E ↓



→ Electron gain enthalpy (EGE)

Energy released by an atom to gain an electron in Standard conditions

→ E.G.E = -ve = Atom is gaining electron readily

→ E.G.E = +ve = Atom is not gaining electron readily.

→ for nonmetals: E.G.E = -ve

→ for metals: E.G.E = +ve

→ E.G.E = more -ve
↳ Easy to gain e⁻

→ E.G.E = Less -ve | More +ve
↳ Difficult to gain

→ Factors affecting E.G.E:

① Size:

Size ↑ E.G.E = less -ve / more +ve

Size ↓ E.G.E = more -ve / less +ve

② Left to Right

E.G.E = more -ve

Top to Bottom:

E.G.E = less -ve / More +ve

③ Shielding effect:

SE ↑ Size ↑ E.G.E = less -ve

④ P.E:

P.E ↑ Size ↓ E.G.E = more -ve.

→ Electronegativity (EN^-)

→ Affinity for e^- is called electronegativity.

→ It value is from 0 to 5.

→ It cant be measured as it is a comparable value

for eg: EN^- of $F = 4$

EN^- of Na $= 0.9$

E.G.E	E.N⁻
① Energy released when atom gain electron.	① Affinity for e^-
② Value can be calculated	② Can't be calculated but only compared.
③ S I unit = $Jmol^{-1}$	③ No unit
④ +ve, -ve	④ 0 → 5