



IONISATION ENERGIES

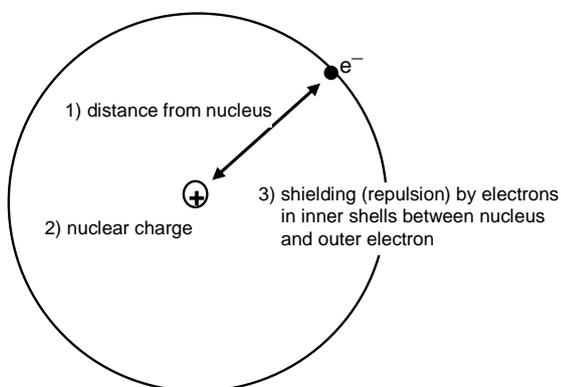
- Evidence for how the electrons are arranged in atoms comes from ionisation energies.
- 1st ionisation energy is the energy required to remove one electron from each atom in a mole of gaseous atoms producing one mole of 1+ gaseous ions.
- Note that 2nd ionisation energy is the energy required to remove the second electron (not both electrons).

e.g. 1st ionisation energy of Na:

2nd ionisation energy of Na:

- Three factors affect the ionisation energy:

1) Distance from nucleus (atomic radius)

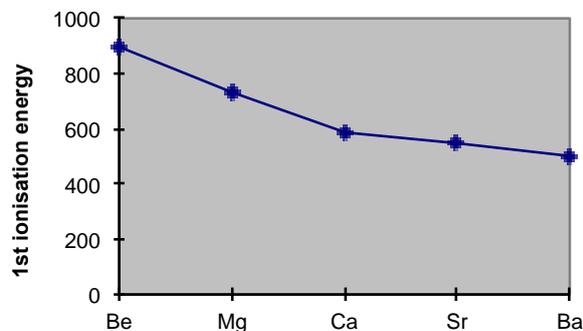


2) Nuclear charge

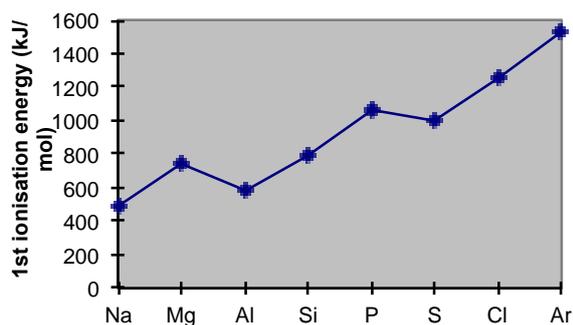
3) Shielding

Evidence for electron arrangement from ionisation energies

Down a group, e.g. Group 2



Across a period, e.g. Period 3

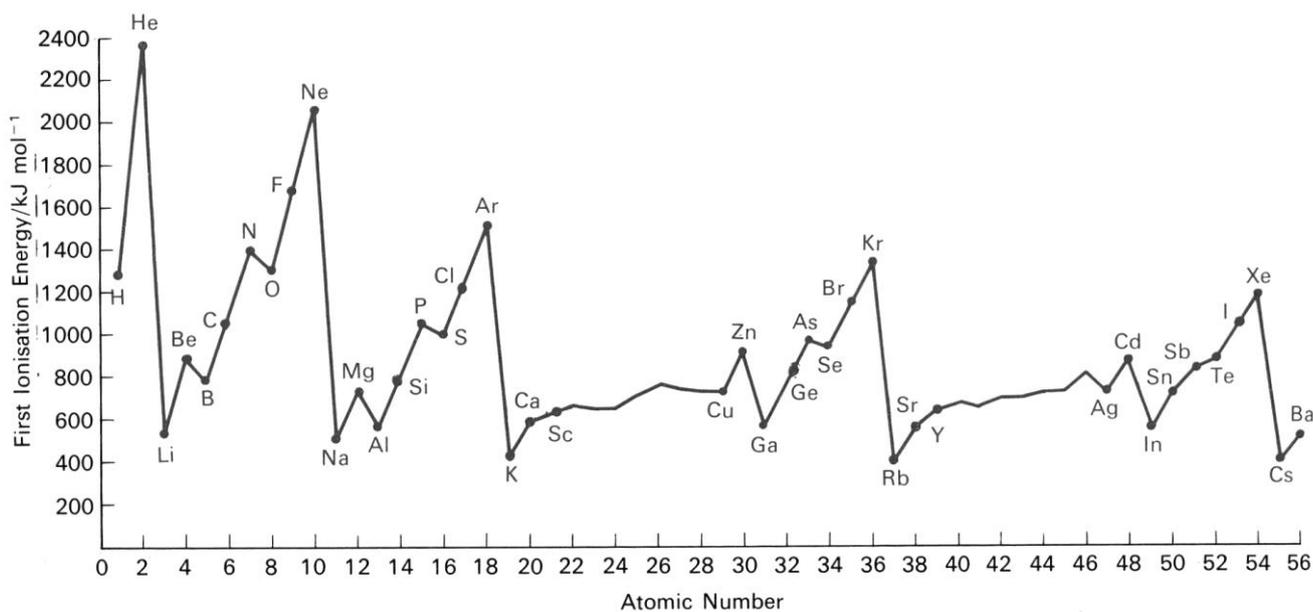


General increase across period:

Group 2 to 3 dip:

Group 5 to 6 dip:

First ionisation energy (up to element 56)



Trends to highlight:

- Down group 1
- Down group 0
- Across period 2
- Across period 3
- Across period 4
- End of a period