

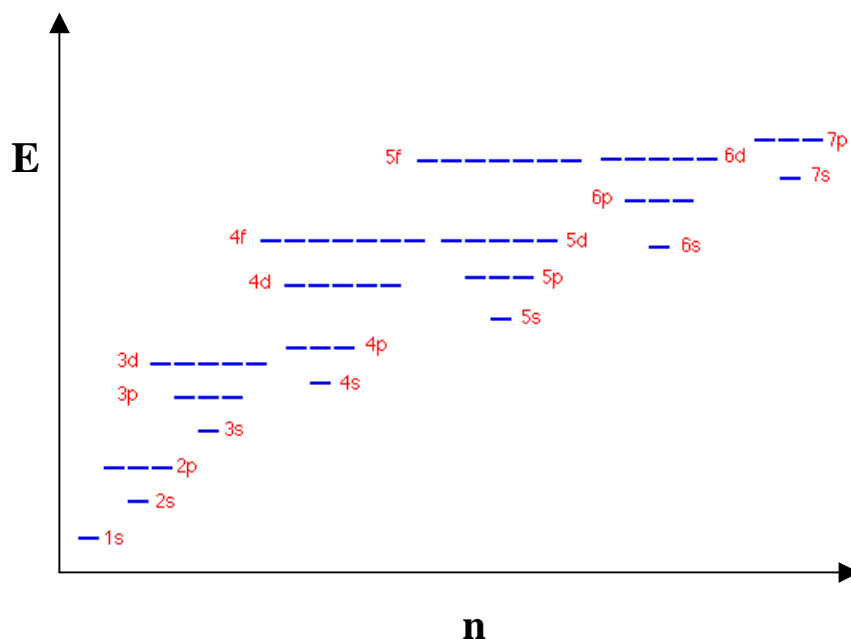
Physics 113 -Lecture 14

Pauli Exclusion Principle

no two electrons can occupy the same quantum state

Periodic Table

1 H $1S^1$
2 He $1S^2$
3 Li $1S^2 2S^1$
4 Be $1S^2 2S^2$
5 Be $1S^2 2S^2 2P^1$
...



Electron Filling Order $1S^2 2S^2 2P^6 3S^2 3P^6 3D^{10} 4S^2 \dots$

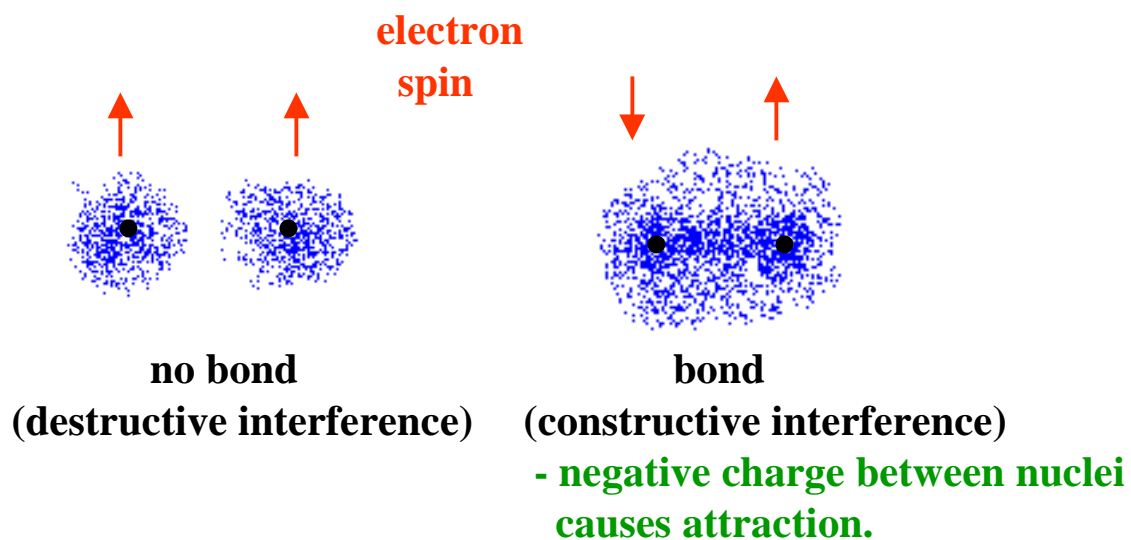
Outer Shell Electrons Determine Bonding

C $1S^2 2S^2 2P^2$
Si $1S^2 2S^2 2P^6 3S^2 3P^2$ } Bond Nearly the Same

Chemical Bonding

Covalent Bonds (electrons shared equally)

Example H^2



Ionic Bonding (unequal sharing)

Example NaCl

