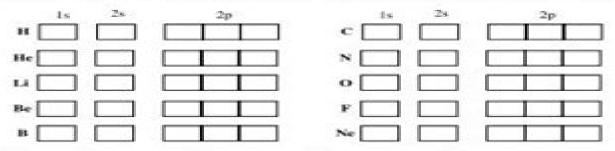
POGIL: Periodic Trends in Atomic Properties

Information

Properties such as the size of an atom (atomic radius), the energy required to remove an electron from an atom (ionization energy), and the energy associated with the addition of an electron to a gaseous atom (electron affinity) can be understood in terms of the electron configuration of the atom and a competition between electron-nucleus attraction and electron-electron repulsion.

Preliminary Activity - Complete the orbital diagrams for the ground state configuration.



Model 1: Electron Ionization & Capture and Electrostatic Interactions

Reaction Equation for Electron Ionization:

 $X \rightarrow X^* + e^-$

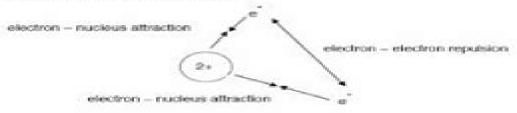
 $\Delta E = 1^{a}$ ionization energy

Reaction Equation for Electron Capture:

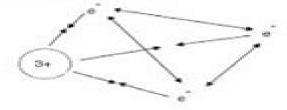
 $X + e \rightarrow X$

 $\Delta E = electron affinity$

Dominant inter-particle forces in helium



Dominant inter-particle forces in lithium:



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JS Bruner

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Science Spectrum Holt Rinehart & Winston, Holt, Rinehart and Winston Staff, 2004

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