

Question #84475, Chemistry / Inorganic Chemistry | for completion

What is effective nuclear charge? What is its role in explaining the size of atoms?

Answer:

The effective nuclear charge (often symbolized as Z_{eff} or Z^{ast}) is the net positive charge experienced by an electron in a polyelectronic atom. The term "effective" is used because the shielding effect of negatively charged electrons prevents higher orbital electrons from experiencing the full nuclear charge of the nucleus due to the repelling effect of inner-layer electrons. The effective nuclear charge experienced by the electron is also called the core charge. It is possible to determine the strength of the nuclear charge by the oxidation number of the atom.

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