


Module 3: Modern Atomic Theory, Electron Structure, and Periodicity
Topic 4 Warm-Up: The One Rule and Two Principles of Electron Configuration

Introduction

The One Rule and Two Principles of Electron Configuration

Aufbau Principle
 Pauli Exclusion Principle
 Hund's Rule

Introduction



Learning electron configuration requires that you remember two principles and one rule. In this interactivity, click on each item on the checklist to learn more about these three concepts.

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Aufbau Principle

The graphic is titled "The One Rule and Two Principles of Electron Configuration". On the left, a clipboard contains a checklist with three items: "Aufbau Principle" (checked with a purple checkmark), "Pauli Exclusion Principle" (unchecked), and "Hund's Rule" (unchecked). An arrow points from the "Aufbau Principle" text in the text box on the right to the checked item on the clipboard. The text box on the right is titled "Aufbau Principle" and contains the text: "Electrons always fill orbitals of lower energy first. For example, 1s is filled before 2s, and 2s before 2p."

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Pauli Exclusion Principle

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Pauli Exclusion Principle

The Pauli Exclusion Principle states no two electrons within a particular atom can have identical quantum numbers. In function, this principle means that if two electrons occupy the same orbital, they must have opposite spin (m_s).

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Hund's Rule

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Hund's Rule

Hund's Rule states that when an electron joins an atom and has to choose between two or more orbitals of the same energy, the electron will prefer to enter an empty orbital rather than one already occupied. As more electrons are added to the atom, these electrons tend to half-fill orbitals of the same energy before pairing with existing electrons to fill orbitals.

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