

Unit 1 Review - Atomic Development

Basic Atomic Development

1. Democritus
2. Greeks
3. Alchemy
4. Laws of nature
 - Conservation of Matter
 - Conservation of Mass
 - Definite composition
5. Dalton
 - Four Principles of Atoms

Modern Atomic Development

1. Thomson Electron
2. Rutherford Nucleus
3. Chadwick Neutron
4. Bohr's Atomic Model
5. Heisenberg Uncertainty Principle
6. Electron Cloud Theory

Atomic Structure

Electrons (-), Protons (+),
Neutrons (0)

1. Location
2. Charge
3. Interaction
4. Roles

(Attract / Repulsion / Orbits)

Orbits and Orbitals

1. Inner e^- , valence e^-
2. Circular Paths
3. Electron Clouds

Isotopes and Atomic Stability

Elements, Isotopes, Isotope Mass,
Avg. Atomic Mass

Atomic Stability

Z-ratio ($p^+ : n^0$)

$$= \frac{\text{Mass\#} - \text{Atomic\#}}{\text{Atomic\#}}$$

Isotope size and Z-ratio

small medium large
1-1.2 1.2-1.3 1.4-1.5

Atoms ≥ 3 + no stability

Alpha / Beta / Gamma

Energy, Mass, Size,
formula, penetration