

# Chemistry – Atomic Structure

- **Atoms** = smallest unit of matter.
- **Subatomic Particles**
  - Proton (+, nucleus)
  - Neutron (0, nucleus)
  - Electron (-, electron cloud)
- **Isotopes**: Same element, different number of neutrons.
- **Ions**: Charged atoms (gain/loss of electrons).
- **Electron Shells**:
  - 1st shell = 2 e<sup>-</sup>
  - 2nd shell = 8 e<sup>-</sup>
  - Valence electrons determine chemical reactivity.
- **Periodic Table Trends**
  - Left → Metals, Right → Nonmetals.
  - Across → Increasing electronegativity.
  - Down → More shells, larger radius.