CHEM 001A: General Chemistry and Chemical Analysis

This text is designed for Chem 001A, which is a standard general chemistry course for science and engineering majors, with emphasis on quantitative methods and calculations. The text addresses atomic structure and chemical bonding, stoichiometry, gases, liquids, solids and solution chemistry. Introductions to equilibrium and organic chemistry. Quantitative analysis using analytical balances, gravimetric and volumetric procedures, spectrophotometry and calorimetry.

- Front Matter
- 1: Matter, Measurement, and Problem Solving
- 2: Atoms and Elements
- 3: Molecules, Compounds and Chemical Equations
- 4: Chemical Reactions and Quantities
- 5: Introduction to Solutions and Aqueous Reactions
- 6: Gases
- 7: Thermochemistry
- 8: The Quantum-Mechanical Model of the Atom
- 9: Periodic Properties of the Elements
- 10: Chemical Bonding I- Lewis Structures and Determining Molecular Shapes
- 11: Chemical Bonding II- Valance Bond Theory and Molecular Orbital Theory
- 12: Liquids, Solids, and Intermolecular Forces
- 13: Solids and Modern Materials
- 14: Solutions
- 15: Chemical Kinetics
- 16: Chemical Equilibrium
- 17: Acids and Bases
- 18: Aqueous Ionic Equilibrium
- 19: Gibbs Energy and Thermodynamics
- 20: Electrochemistry
- 21: Radioactivity and Nuclear Chemistry
- 22: Organic Chemistry
23: Biochemistry
- 24: Chemistry of the Nonmetals
- 25: Metals and Metallurgy
- 26: Transition Metals and Coordination Compounds
- Back Matter