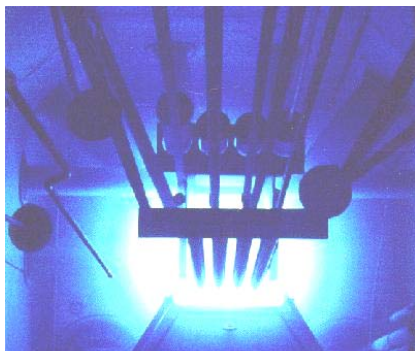


# Atomic Theory and Electron Configuration Study Guide

## Chemistry I

### B. White



Cerenkov radiation in a nuclear reactor. The "glow" comes from high energy electrons traveling through the water faster than the speed of light in that medium.

#### Chapter 4 Objectives

- You will identify the experiments that led to the development of the nuclear model of atomic structure.
- You will describe the structure of the atom and differentiate among the subatomic particles that comprise it.
- You will explain the relationship between nuclear stability and radioactivity.

#### Chapter 5 Objectives

- You will compare the wave and particle models of light.
- You will describe how the frequency of light emitted by an atom is a unique characteristic of that atom.
- You will compare and contrast the Bohr and quantum mechanical models of the atom.
- You will express the arrangements of electrons in atoms through orbital notations, electron configurations, and electron dot structures.

#### Chapters 4 and 5 Activities

- \_\_\_ Demonstrations on Atomic Properties and Light
- \_\_\_ Lab: Measuring the Charge on an Electron,  $e$ .
- \_\_\_ Lab: Flame Tests
- \_\_\_ Lab: Measuring Wavelengths of Light Using a Spectrometer
- \_\_\_ Student review and self-assessment from the web site [www.chemistrymc.com](http://www.chemistrymc.com)  
Username: cmc2005  
Password: t8chefec
- \_\_\_ Class review
- \_\_\_ Unit Project

#### Assignments

- \_\_\_ Take reading notes on Chapters 4 and 5 (portfolio)
- \_\_\_ Chapter 4 practice problems from the textbook: **59-89**
- \_\_\_ Chapter 5 practice problems from the textbook: **65-82**  
*Practice Problems must be turned in on 8 1/2 x 11 inch unlined paper. These problems must be completed and checked before the day of the chapter test, and it is the responsibility of the student to make sure that they are complete and correct.*

#### Assessments

- \_\_\_ Portfolio work (including lab work)
- \_\_\_ Unit Project
- \_\_\_ Self-check understanding/quizzes on-line
- \_\_\_ Chapter Test