

## Chapter 28: Quantum Mechanics of Atoms

### Giancoli Text Sections

28-1 Quantum Mechanics-A New Theory

28-2 The Wave Function and Its Interpretation; the Double-Slit Experiment

28-3 The Heisenberg Uncertainty Principle

### Summary

Chapter 28 extends the quantum model to a more comprehensive theory that is able to explain the structure and predict the spectra of more complex atoms. The Heisenberg uncertainty principle is presented.

### Major Concepts

By the end of the chapter, you should understand each of the following and be able to demonstrate their understanding in problem applications as well as in conceptual situations.

- The quantum model
  - Wave functions
  - Schrödinger equation
  - Electron probability clouds
- Heisenberg uncertainty principle

### Formulas

$$(\Delta x)(\Delta p_x) \approx h$$