

CHAPTER OVERVIEW

4: The Harmonic Oscillator and Vibrational Spectroscopy

One of the four important problems in quantum mechanics that can be solved analytically is that of the Harmonic Oscillator. This problem is very important to chemists as it provides the model for vibrating molecules and explains what we see in infrared and Raman spectra of molecules. In this chapter we will develop the problem, discuss the limitations of the simple problem and how we deal with them, and the applications of the conclusions to molecular spectroscopy and the measurement of molecular properties.

[4.1: The Potential Energy Surface for a Diatomic Molecule](#)

[4.2: Solving the Schrödinger Equation](#)

[4.3: Strengths and Weaknesses](#)

[4.4: Vibrational Spectroscopy Techniques](#)

[4.5: Group Theory Considerations](#)

[4.6: References](#)

[4.7: Vocabulary and Concepts](#)

[4.8: Problems](#)

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