

CHAPTER OVERVIEW

9: Condensed Matter Physics

In this chapter, we examine applications of quantum mechanics to more complex systems, such as molecules, metals, semiconductors, and superconductors. We review and develop concepts of the previous chapters, including wave functions, orbitals, and quantum states. We also introduce many new concepts, including covalent bonding, rotational energy levels, Fermi energy, energy bands, doping, and Cooper pairs.

[9.1: Prelude to Condensed Matter Physics](#)

[9.2: Types of Molecular Bonds](#)

[9.3: Molecular Spectra](#)

[9.4: Bonding in Crystalline Solids](#)

[9.5: Free Electron Model of Metals](#)

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[9.A: Condensed Matter Physics \(Answers\)](#)

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