

SPECTROSCOPIC STUDIES OF CHIRALITY

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Chirality is pervasive in Nature and describes the property of an object not to be superimposable on its mirror image. To differentiate between the two mirror images of a chiral molecule, called enantiomers, one must probe them with a probe that is itself chiral. The probe can be of chemical nature, for example another chiral molecule, or of physical nature, for example a chiral light. I will give examples of these two approaches. I will describe how laser spectroscopy at low temperature sheds light on the structural differences between the homochiral and heterochiral complexes of chiral biomolecules, such as amino acids or sugars.^{a b} Then I will illustrate the sensitivity of chiroptical spectroscopy to conformational isomerism and molecular interactions on the example of 1-indanol studied by Vibrational Circular Dichroism (VCD) in the condensed phase^c and PhotoElectron Circular Dichroism (PECD) under jet-cooled conditions.

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