

FTIR for Biomolecules

Amide Bands

- Amide I ($1600\text{-}1700\text{ cm}^{-1}$): C=O stretch, secondary structure sensitive
- Amide II ($1510\text{-}1580\text{ cm}^{-1}$): N-H bend, C-N stretch
- α -helix: 1650-1658 | β -sheet: 1620-1640, 1680-1690 | Random: 1640-1650

Lipid Analysis

C-H stretch $2800\text{-}3000\text{ cm}^{-1}$. Membrane fluidity studies.

Spectral Deconvolution

Fourier self-deconvolution resolves overlapping bands.