

## What we can learn about water from vibrational spectroscopy

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Vibrational spectroscopy in mid IR provides us a powerful instrument to look at the intramolecular arrangement of liquid water. Observing the stretching and bending mode of water molecules we can gain an insight on the free energy content related to the external environment, on the effect of solutes on the long-range molecular structure and on the collective properties of liquid phase. Furthermore we can explore the nature of the two-fluids structure of water reported by many pieces of literature which is a subject of major importance for physical and chemical applications and for the understanding of the biological systems.