

Spectroscopy and Molecular Structure

Adelino Galvão



Logistics :

Monday: 10 – 12 h Room Qa1.4

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Grading :

Two methods:

Exam at semester's end

Three tests spread through the semester



Course Content :

- 1.** Spectroscopy: an historic journey
- 2.** Quantum Mechanics revisited
- 3.** Group theory
- 4.** Electromagnetic Radiation
- 5.** Interaction radiation-Matter
- 6.** Elastic and Inelastic Scattering
- 7.** Rotational and vibrational absorption
- 8.** Electronic spectroscopy
- 9.** Lasers and non linear phenomena
- 10.** Magnetic spectroscopy (fundamentals)



Bibliography :

1- R.J. Silbey, R.A. Alberty, M.G. Bawendi, *Physical Chemistry*, 4^a ed., Wiley, 2004.

2- P.F. Bernath, *Spectra of Atoms and Molecules*, Oxford UP, 2^a ed., 2005.

3- B. Valeur, *Molecular Fluorescence*, Wiley-VCH, Weinheim, 2002.

4- P.J. Hore, *Nuclear Magnetic Resonance*, Oxford UP, Oxford, 1995.

5- D.J. Griffiths, *Introduction to Quantum Mechanics*, 2^a ed., Pearson, 2005