

Applied Spectroscopy (I)

Spring, 2021

Instructor: T.-S. Yang, Ph.D, Department of Chemistry and Biochemistry

Office hour: Tuesday 10:00 am- noon

Course Outline:

1. History of Spectroscopy
2. Atomic Spectra
3. Molecular Symmetry and Group Theory
4. Rotational Spectra
5. Vibrational Spectra
6. UV-Vis Spectra and Fluorescence: Molecular Electronic Transitions

References:

1. P. Atkins: Atkins' Physical Chemistry. Chap. Atomic Spectra, Molecular Symmetry, and Molecular Spectroscopy
2. P. F. Bernath: Spectra of Atoms and Molecules, 1995
3. J. M. Hollas: Modern Spectroscopy, 1996
4. J. L. McHale: Molecular Spectroscopy, 1999
5. Joseph R. Lakowicz: Principles of Fluorescence Spectroscopy, 3rd, 2006
6. Kaoru Yamanouchi: Quantum Mechanics of Molecular Structures, 2012
7. A. M. Kelley: Condensed-phase Molecular Spectroscopy and Photophysics, 2013

Grading will be based on quizzes 20%, midterm exam 40% (4/23 Fri. 2 pm), and the final examination 40% (6/18 Fri. 2 pm).