

分子物理導論

Molecular Physics: From Fundamentals to Practices

Purpose of the course:

If you never wonder how to apply quantum mechanics to understand the world of molecules, this is a course for you. The purpose of this course is to provide the students an overview and basis of Molecular Physics. From the basics of Quantum Physics, one can begin to understand the structure of simple molecules, clusters, nano-materials to condense physics. In particular, for those, who are interested in doing research on subject related to material and molecular physics, this course would serve as a platform for intensive discussions for some updated development of these fields.

Course:

- (1) Three credits for senior undergraduate and graduate students
- (2) Pre-requirement: quantum physics or equivalent
- (3) Lecture: 3 hours;
- (4) Lectuer: Dr. Jer-Lai Kuo
- (5) Reference: W. Demtroder, “Molecular Physics”, Wiley-VCH, 2005

Subjects to be covered:

- (1) Basics of Molecular Physics
- (2) Structure of Diatomic Molecules
- (3) Applications of Group Theory to Molecular Spectroscopy
- (4) Poly-atomic Molecules (Rotation, Vibration, Electronic Spectra)
- (5) From Molecules to Clusters, Molecular Aggregates to Condensed Phases
- (6) Computational Methods and their Applications to Molecular Physics
- (7) Select Topics of Experimental Techniques in Molecular Physics