COURSE DETAIL

ADVANCED PHYSICAL CHEMISTRY
Country Denmark
Host Institution University of Copenhagen
Program(s) University of Copenhagen
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Chemistry
UCEAP Course Number 165
UCEAP Course Suffix
UCEAP Official Title ADVANCED PHYSICAL CHEMISTRY
UCEAP Transcript Title ADV PHYSICAL CHEM
UCEAP Quarter Units 12.00
UCEAP Semester Units 8.00

Course Description
This course describes aspects of both experimental and theoretical advanced physical chemical methods. It includes gas phase, condensed phase, and solid phase. The focus is on uses of a broad range of spectroscopies to gain information of the underlying physical chemistry. Rotations, vibrations and electronic transitions in molecules as well as scattering from solids are discussed. Theory of molecular vibration within the local mode model and experimental techniques used to observe the weak overtone transitions associated with the highly vibrational excited molecules is explained. Single molecule fluorescence, Raman spectroscopy and X-ray scattering is studied. The main aim is that student is able to critically read literature in the areas covered. The course covers the following: theory of rotational, vibrational, and electronic transitions; different experimental techniques used in gas, liquid and solid phase spectroscopy; typical acronyms: IR, Raman, CRDS, PAS, SERS, CARS, FRET, XPS, UPS, EXAFS, X-ray scattering; experimental experience with IR, Raman and flouresense measurements.

Language(s) of Instruction
English

Host Institution Course Number
NKEK10004U

Host Institution Course Title
ADVANCED PHYSICAL CHEMISTRY

Host Institution Course Details

Host Institution Campus
Science

Host Institution Faculty

Host Institution Degree

Host Institution Department
Chemistry

Course Last Reviewed

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