



SPECTROSCOPIES FOR THE SOLID STATE

Enrollment year	2016/2017
Academic year	2016/2017
Regulations	DM270
Academic discipline	CHIM/02 (PHYSICAL CHEMISTRY)
Department	DEPARTMENT OF CHEMISTRY
Course	CHEMISTRY
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	1st semester (01/10/2016 - 20/01/2017)
ECTS	6
Lesson hours	48 lesson hours
Language	ITALIAN
Activity type	ORAL TEST
Teacher	GHIGNA PAOLO (titolare) - 3 ECTS SPINOLO GIORGIO - 3 ECTS
Prerequisites	Basic topics on quantum theory and solid state
Learning outcomes	The course aims at providing a wide presentation the some spectroscopic techniques for the investigation of the solid state , with particular reference to techniques concerning advanced materials.
Course contents	Two course is split into two parts. The first parts introduces some basic topics such as radiation/matter interactions, Fermi golden rule, selection rules, vibrations of solids, phonons. The second part describes the main spectroscopic techniques for investigating electronic and atomic structure of solids, with particular attention to methods based on the use of synchrotron radiation: XAFS (EXAFS, XANES, ReflEXAFS, SEXAFS), XES, XMCD ed LMCD.

Teaching methods

Lectures

Reccomended or required readings

The basic topics can be found in these books:

P. A. COX, The Electronic Structure and Chemistry of Solids

R.Hoffmann, Solids and Surfaces: A Chemist's View of Bonding in
Extended Structures

Moreover, the slides of the lecture are available to the students, as well
as references to review papers from the scientific literature.

oral exam

Further information

