UCL Université catholique de Louvain

LCHM2122

2014-2015

Analysis physical methods of solids

3.0 credits	30.0 h	1q

Teacher(s) :	Garcia Yann (coordinator) ; Fustin Charles-André ;
Language :	Français
Place of the course	Louvain-la-Neuve
Aims :	This course not only aims at giving a large introduction to the main instrumental analysis methods of solids but also aims at directing an analysis towards the most appropriate solutions. The emphasis is shed on principles, application ranges, possibilities and limitations of each technique. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	Content I. Thermal analysis methods: thermogravimetric analysis (TGA), thermodifferential analysis (TDA), differential scanning calorimetry (DSC) II. Surface techniques analysis methods and microscopies: X-ray photoelectrons spectroscopy (XPS), Auger electron spectroscopy (AES). Secondary ions mass spectrometry (SIMS). Specific surface measurement (BET). Scanning electronic microscopy (SEM). Transmission electronic microscopy (TEM). Atomic force microscopy (AFM) III. X-Ray diffraction and X-ray fluorescence IV. X-Ray absorption spectroscopy : EXAFS, XANES and WAXS V. Mössbauer spectroscopy
Other infos :	Background: Molecular symmetry and crystal structures (CHM 1251A) - Fundamentals of molecular spectroscopy (CHM 1251B). Evaluation: oral exam Documents: - Instrumental Methods of Analysis, H.H. Willard, L.L. Merritt Jr. J.A. Dean, F. A. Settle Jr., 7th ed., New York, Wadsworth Publishing Company, 1988. ISBN 0534081428. - Fascicle containing a copy of the overhead transparencies used by the teacher The course could be partly or totally delivered by an invited lecturer.
Cycle and year of study :	> Master [120] in Chemistry > Master [60] in Chemistry
Faculty or entity in charge:	CHIM