

Academic year: 2017

Faculty: Department of Chemistry

Study courses: CHIMICA ANALITICA STRUMENTALE ED ANALYTICAL CHEMISTRY OF MATERIALS [063474]

Study plans/Curricula: CHIMICA DEI MATERIALI E DELLE SUPERFICI - 105-8752

Type: Affine/Integrativa

Total Credits: 4CFU

Didactic Methods: Lezione , Laboratorio

Didactic Period: Secondo Ciclo Semestrale

Exam type: oral

Professor in charge: Kyriaki Manoli

Training objectives

To write a project regarding surface analysis of samples using XPS, run the measurements of samples and analyse the data. Prepare presentation on the project results.

Prerequisites

Basic concepts of spectroscopy

Didactic Methods

Course programme

PROGRAMME:

Lectures: (24 h)

1. *Introduction to surface analysis spectroscopy. Applications of XPS (X-ray Photoelectron Spectroscopy)*
5. *Comparison of the different techniques used for surface analysis.*
2. *Basic principles of photoemission spectroscopy: XPS and Auger spectroscopy.*
3. *XPS and Auger instrumentation*
4. *Analysers for Electron Spectroscopy: Transmission and étendue. Power resolving in XPS and Auger.*
5. *XPS analysis modes/configurations*
6. *XPS qualitative and quantitative analysis.*
7. *Analysis of samples: conductors, insulators and semiconductors. Calibration of the spectrometer and the spectrum.*

Numerical applications (15 h)

Reference Texts

Briggs, D., *Surface Analysis of Polymers by Xps and Static Sims*. Cambridge University Press: 1998.