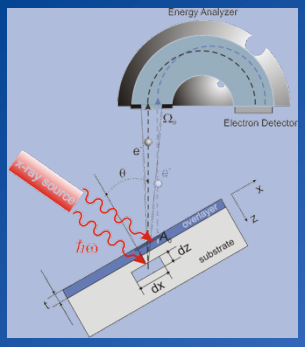
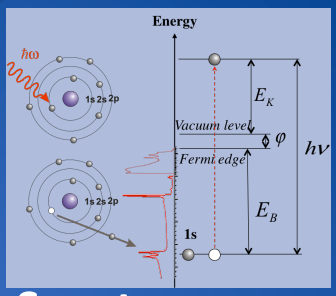
March 19 – 20, 2018 (1.5 Day Course)
Birck Nanotechnology Center Rm1001·9:00am



Introduction to XPS



What we should know about X-ray Photoelectron Spectroscopy

Course Objectives:

- Learn basic physics principles and limitations of X-ray Photoelectron Spectroscopy (XPS) also know as ESCA (Electron Spectroscopy for Chemical Analysis)
- Learn approaches for qualitative and quantitative analysis of XPS data.
- Learn the types of problems that can be solved with XPS examples
- Perform advanced data analysis: coverage calculation, thin film thickness calculation, etc.

Course Description:

XPS is widely used to determine the chemical composition of a surface (element concentrations, chemical states, lateral and depth distributions, etc.) Nowadays XPS has become a standard technique for the characterization of solid surfaces. The course will teach how and what information can be provided by XPS.

Instructor:

Dmitry Zemlyanov,

PhD, Senior Surface Science Application Scientist, Birck Nanotechnology Center, Purdue University

PURDUE UNIVERSITY Discovery Park

Day 1 (March. 19 @ 9:00am-4:00pm):

At the first day, the basic prince of XPS will be discussed, including qualitative and quantitative analysis. Possible artifacts of the measurements will be analyzed.

Day 2 (March. 20 @ 9:00am-1:00pm):

The second day discussion will focus on the XPS data quantification. It will be demonstrated what kind of quantitative information can be extracted from the experimental data (for instance coverage calculation, thin film thickness calculation, etc.).

Participants are encouraged (not mandatory) to bring their laptop to perform some practical calculations (case studies).

Audience:

The lecture is orientated at a general audience. Scientists, engineers, students and technicians who would like a detailed understanding for the use of XPS/ESCA for surface analysis. ***Ideally, every group involved in Surface Characterization should have at least one designated student familiar with XPS***

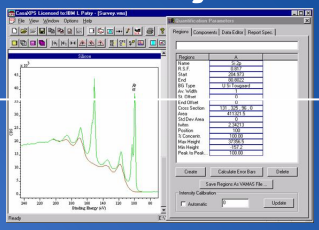
Total 1.5 – Day Cost: $250 (lunch on the first day will be provided)

Registration at: http://bit.ly/1eqIM8U

March 26 – 27, 2018 (1.5 Day Course)
Birck Nanotechnology Center Rm1001 • 9:00am

Introduction to CasaXPS

What we should know about XPS data analysis with CasaXPS



Course Objectives:

Learn the CasaXPS software and:

- What analysis/treatment should be applied to raw XPS data.
- How to perform qualitative and quantitative analysis of the XPS data using CasaXPS
- Case studies based on participant's XPS data

Course Description:

XPS is widely used to determine the chemical composition of a surface (element concentrations, chemical states, lateral and depth distributions, etc.) Nowadays XPS has become a standard technique for the characterization of solid surface. However, XPS data require thorough analysis, and dedicated software is used for data analysis. Purdue University has a site license for CasaXPS allowing complete analysis of XPS data. The course aims to teach (1) what analysis should be applied to raw XPS data and (2) how this can be done using CasaXPS. Qualitative and quantitative analysis of XPS data using CasaXPS will be discussed in detail as well.

Instructor:

Dmitry Zemlyanov,
PhD, Senior Surface Science Application Scientist, Birck Nanotechnology Center, Purdue University

Day 1 (March. 26 @9:00am-4:00pm):

Basic of CasaXPS: Loading and displaying data, selecting and zooming data, etc.
Processing Spectra: Charge correction and energy calibration
Quantification of Spectra: Creating background and regions. Quantification of survey and high-resolution spectra using regions, creating peak models, creating reports.
Result Transfer to other media: export txt data, graphics files, etc.

Day 2 (March. 27 @9:00am-1:00pm):

Case studies: Analysis of participant's XPS data

Participants are encouraged to bring their own laptops to follow data analysis using CasaXPS.

Audience:

The lecture is orientated at a general audience. Scientists, engineers, students and technicians who would like a detailed understanding for the use of XPS/ESCA for surface analysis.

Ideally, every group planning to do XPS analysis should have at least one designated student familiar with how to analyze XPS data.

Registration at: http://bit.ly/IYeOeu

Total 1.5 – Day Cost: $250 (lunch on the first day will be provided)

PURDUE UNIVERSITY Discovery Park