



3D IMAGING AND MAPPING OF ELEMENTS BY X-RAY MICROANALYSIS IN ELECTRON MICROSCOPY

November 7, 2012 – open session - no registration (*floor 2*)

9:45 Elzbieta Wyroba - Workshop opening

10:00 **Takashi Ishikawa**

Paul Scherrer Institute, Villigen, Switzerland

CRYO-TRANSMISSION ELECTRON MICROSCOPY FOR MOLECULAR
AND CELLULAR BIOLOGY”.

11:00 **Ohad Medalia**

*Department of Biochemistry Zurich University, Zürich, Switzerland
and Ben-Gurion University, Beer-Sheva, Israel.*

VISUALIZING CELLULAR PROCESSES AT THE MOLECULAR LEVEL BY
CRYO-ELECTRON TOMOGRAPHY

12:00 coffee break

12:15 **Philippe André Buffat**

*Ecole Polytechnique Fédérale de Lausanne, Switzerland and AGH
University of Science and Technology, Kraków, Poland*

PRINCIPLES, PRESENT STATUS AND PERSPECTIVES OF EDS
MICROANALYSIS AND MAPPING WITH THE NEW LARGE
COLLECTION ANGLE SDD DETECTORS.

13:15 lunch

14:00 **Michał Żelechower**

*Department of Materials Science, Silesian University of Technology,
Gliwice, Poland*

ELECTRON PROBE X-RAY MICROANALYSIS (EPMA) - THEORETICAL
BACKGROUND AND PRACTICE.

14.50 : 16.15 Practicals for 21 registered participants (Ground floor)

DATA AQUISITION for 3D imaging - S. Suski

November 8

Conference Hall fl.1

9.15 – 10.00

Elżbieta Wyroba

**'TEM, SEM, ENERGY-DISPERSIVE (EDS) X-RAY MICROANALYSIS – THEORY,
APPLICATION AND DRAWBACKS'**

10.00 – 10.20

S. Suski - INTRODUCTION TO TOMOGRAPHY

Ground floor:

Group	10.20 – 10.50	10.55 – 11.25	11.30 – 12.00
I	3D reconstructions from the collected images S. Suski	General information on tissue/cell preparation H. Bilski, E. Wyroba	Qualitated X-ray microanalysis W. Szymkowiak (JEOL)
II	Qualitated X-ray microanalysis W. Szymkowiak (JEOL)	3D reconstructions from the collected images S. Suski	General information on tissue/cell preparation H. Bilski, E. Wyroba
III	General information on tissue/cell preparation H. Bilski, E. Wyroba	Qualitated X-ray microanalysis W. Szymkowiak (JEOL)	3D reconstructions from the collected images S. Suski

(Mineral water and cookies available at the ground floor)

12.10 - 12.55 (level -1, room 025)

Demonstration of high-pressure freezing - G.Wilczyński and A. Szczepankiewicz (from the Laboratory of Molecular and Systemic Neuromorphology)

13.00 – 13.40 - Lunch (ground floor, room B)

Group	13.45 – 14.15	14.20 – 14.50
I	Elements mapping and quantitative X-ray microanalysis W. Szymkowiak (JEOL)	Critical point drying system for sample preparation H. Bilski, E. Wyroba (level -1, room 025)
II	Critical point drying system for sample preparation H. Bilski, E. Wyroba (level -1, room 025)	Elements mapping and quantitative X-ray microanalysis W. Szymkowiak (JEOL)
III	Elements mapping and quantitative X-ray microanalysis S. Suski	Critical point drying system for sample preparation H. Bilski, E. Wyroba (level -1, room 025)

14.55 – 15.30

High resolution visualization of cellular ultrastructure from different cells and tissues

H. Bilski, E. Wyroba, S. Suski

15.30 - Coffe break (ground floor, room B)

15.50 - 16.00

Certificates distribution

NOVEMBER 7-8, 2012, Warsaw

3D IMAGING AND MAPPING OF ELEMENTS BY X-RAY MICROANALYSIS IN ELECTRON MICROSCOPY

LECTURES

Takashi Ishikawa

Cryo-transmission electron microscopy for molecular and cellular biology.

Ohad Medalia

Visualizing cellular processes at the molecular level by cryo-electron tomography.

Philippe André Buffat

Principles, present status and perspectives of EDS microanalysis and mapping with the new large collection angle SDD detectors.

Michał Żelechower

Electron probe X-ray microanalysis (EPMA) theoretical background and practice.

PRACTICALS

Qualitative and quantitative X-ray microanalysis, electron tomography and sample preparation.

ORGANIZED BY:

Laboratory of Electron Microscopy
Nencki Institute of Experimental Biology

No registration fee. Accommodation grants available.
Inquires and registration: e.wyroba@nencki.gov.pl

