

International workshop

**Progress in sample preparation:
Non-ferrous metals for light and electron
microscopy (LM, SEM, EBSD and TEM) observations**

16. – 18. February 2015

Organized by:

Institute of Physics of the Academy of Sciences of the Czech Republic

Department of Advanced Structural Materials

Na Slovance 1999/2

182 21 Prague 8

Czech Republic



in cooperation with:

STRUERS GmbH Praha

Havlíčková 361

25263 Roztoky

Czech Republic



Carl Zeiss spol. s r.o.

Radlická 393/14

150 00 Praha 5-Smíchov

Czech Republic



We make it visible.

Workshop motivation

With emerging of new microscopic techniques and their widespread use, appropriate sample preparation is still the crucial prerequisite for successful microstructural observation of bulk metallic samples. This involves the preparation of parallel planes with mirror-like surface or defined sample thickness reduction without damaging of surface layer for special applications. In order to demonstrate state-of-the-art development in this field, we organize a workshop in cooperation with Struers GmbH Praha and Carl Zeiss spol. s r. o. Participants from both industry and academic institutions are welcome.

Scope of the workshop

The workshop combines both lectures and practical laboratory demonstrations.

i) The lectures (Monday) will cover introduction of the newest possibilities and solving of customer-oriented problems in sample preparation techniques applied to non-ferrous metallic materials (Ti, Al, Mg, Cu and their alloys) by using state-of-the-art instrumentation of STRUERS and LOGITECH companies. Correlative microscopy in order to bridge the micro and nano scale world will be presented by Carl Zeiss Company. The lectures will be available for a high number of participants for free.

ii) Laboratory sessions (Tuesday-Wednesday) will include hands-on sample preparation for subsequent using of various light and electron microscopy techniques and will be followed by microstructure observation. Laboratory sessions will be realized in four separate laboratories equipped with proper instrumentation:

1st Laboratory:

- Conventional cutting followed by automated grinding and polishing of mounted and unmounted samples for light microscopy (LM) and scanning electron microscopy combined with electron backscattered diffraction (SEM-EBSD) observation by STRUERS;

2nd Laboratory:

- Thin foil preparation for transmission electron microscopy (TEM) observation and parallel planes samples for SEM-EBSD observation by LOGITECH;

3rd Laboratory:

- Electrolytic sample preparation for LM, SEM and TEM observation by STRUERS Lectropol5 and Tenupol5.

4th Laboratory:

- Sample observation using of light microscope (Carl Zeiss AxioObserver) and table top scanning electron microscope (FEI Phenom).

Laboratory sessions will be accessible only to paid participants and will be divided into three parallel groups (Max. 5 people in each group). Each group will visit all laboratories separately and final sample observation will be realized for all participants together.

Information

Date: 16. – 18. February 2015 (Monday-Wednesday)

Venue: Institute of Physics of the Academy of Sciences of the Czech Republic
Department of Advanced Structural Materials
Na Slovance 1999/2, 182 21 Prague 8
(entrance and reception from Pod vodárenskou věží 1, Prague 8)

Registration

Monday lectures: free of charge (registration confirmation needed)

Tuesday and Wednesday

Hands-on laboratory sessions: registration fee 3000 CZK

Registration fee covers: hands-on interactive laboratory, coffee breaks, lunches and workshop dinner.

Accommodation is not included in the registration fee and participants are advised to arrange it individually.

Monday lectures are free of charge and are available for all interested people after registration.

Nearby accommodation possibilities:

Hotel Duo	www.janhotels.cz	(1 station by metro)
Pension M	www.pension-m.cz	(300 m on foot)
Hotel Mazanka	www.hotel-mazanka.cz	(250 m on foot)
Pension Lucie	www.pensionlucie.cz	(1 station by metro)
Hotel Excellent	www.hotel-excellent.cz	(1 station by metro)

Overall Workshop Queries

Ing. Viera Gärtnerová, Ph.D.
Tel: +420 266 052 870
e-mail: matprep@fzu.cz

Organizing Committee

Ing. Viera Gärtnerová, Ph. D. – Institute of Physics AS CR
RNDr. Aleš Jäger, Ph. D. – Institute of Physics AS CR
Dipl. Ing. Petr Sytař - Struers
Dr. Holger Schnarr- Struers
Ing. Ole Sumpf – Logitech
Dipl. Ing. Rudolf Krentík – Carl Zeiss

NOTE:

Registration is based on the first come, first served principle. Maximum capacity for laboratory sessions is 15 participants.

Lectures and laboratory sessions will be given in English language.

PROGRAM

Monday, February 16th 2015

- 12.00 - 13.00 Registration and Opening session
- 13.00 - 13.45 **Lecture 1** – Dr. Holger Schnarr (Struers):
Possibilities of sample preparation for nonferrous materials
- 13.45 - 14.30 **Lecture 2** - Ing. Ole Sumpf (Logitech):
Introduction to main applications covered with Logitech systems
- 14.30 - 15.00 Coffee break
- 15.00 - 15.30 **Lecture 3** – Dipl. Ing. Rudolf Krentík (Carl Zeiss):
Correlative microscopy - Bridging the micro and nano world
- 15.30 – 16.00 **Lecture 4** - Dipl. Ing. Petr Sytař (Struers):

New Struers products

Tuesday, February 17th 2014

- 09.00 - 12.00 Hands-on interactive laboratory (1, 2, 3) sessions, coffee break
- 12.00 - 13.00 Lunch
- 13.00 - 16 .00 Hands-on interactive laboratory (1, 2, 3) sessions, coffee break
- 18.00 Workshop dinner

Wednesday, February 18th 2014

- 09.00 -12.00 Hands-on interactive laboratory (1, 2, 3) sessions, coffee break
- 12.00 - 13.00 Lunch
- 13.00 - 16 .00 Sample observation laboratory (4) session, coffee break

REGISTRATION

Deadline: January 20th 2015

International workshop

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16. – 18. February 2015

Institute of Physics of the Academy of Sciences of the Czech Republic
Department of Advanced Structural Materials
Na Slovance 1999/2, 182 21 Prague 8, Czech Republic

PERSONAL DATA

First name:

Surname: Title:

Institution address:

Institution:

Street:

City: ZIP:

Country:

E-mail: Phone office:

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Registration for:

Monday lectures only (free of charge)

Monday lectures and Tuesday – Wednesday hands-on laboratory (3000 CZK)

Date

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Participant's signature

Please, send the filled registration form **before the January 20th 2015** to matprep@fzu.cz

or Ing. Viera Gärtnerová, Ph. D.

Fyzikální ústav AV ČR, v. v. i.

Na Slovance 1999/2, 182 21 Praha 8

Participation confirmation will be sent upon receiving filled registration form.

Only bank transfer payment will be acceptable. Bank account details will be send upon registration to the workshop.

Deadline for payment is **February 3rd 2015**.

How to get to Institute of Physics AS CR from C metro station Ladví
Fyzikální ústav AV ČR, v. v. i.
Na Slovance 1999/2
182 21 Praha 8

Entrance from Pod Vodárenskou věží 1

