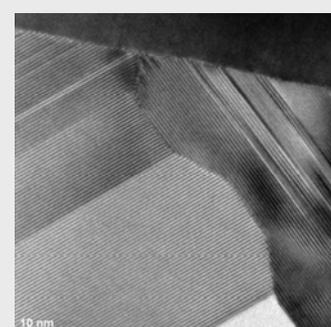
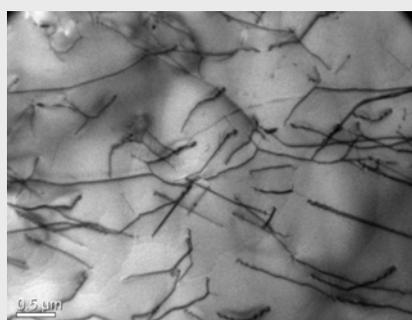
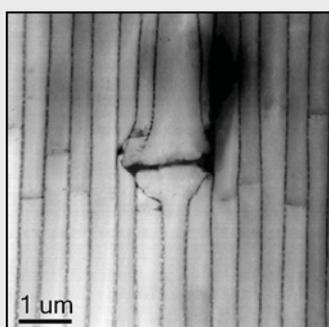


# European School on Advanced TEM Sample Preparation



December 2<sup>nd</sup> - 6<sup>th</sup>, 2013

Stuttgart



## School

Within the scope of the 7<sup>th</sup> Framework Program (FP7), the project **Enabling Science and Technology through European Electron Microscopy (ESTEEM2)** has come into force. The ESTEEM consortium consisting of 18 electron microscopy laboratories for materials science and solid state physics brings together the major microscopy centers in Europe. One of the ESTEEM's goals is to promote the exchange of experience in the field of electron microscopy by conducting different workshops and schools..



Website to ESTEEM2: <http://esteem2.eu/>

This European school on **Advanced TEM Sample Preparation** from December 2<sup>nd</sup> to December 6<sup>th</sup>, 2013 will be focused on **advanced** techniques for preparation. It will cover ion milling under low incidence and low accelerating voltage, wedge-cleavage technique, cryo-ultramicrotomy and automated tripod polishing. This school includes lectures by StEM scientists and guest speakers, lab equipment demonstrations and practical work. The number of participants is limited to 20.

## Location

The school lectures and laboratories will take place at the Stuttgart Center for Electron Microscopy (**StEM**) at the Max Planck Institute for Intelligent Systems, Heisenbergstrasse 3, 70569 Stuttgart, Germany: <http://www.is.mpg.de/StEM/>

How to find us: [http://www.is.mpg.de/direction\\_stuttgart](http://www.is.mpg.de/direction_stuttgart)

## School language

English

## School booklet and poster presentations

The participants will receive a booklet including copies of the presentations given by the speakers. All participants are encouraged to present posters. The available poster stands are A0 (84,1 cm width x 118,9 cm height). Posters will be displayed during the whole school. Abstracts should be submitted to the school organizing committee as a pdf file by October 28<sup>th</sup>, 2013: [sample.preparation@is.mpg.de](mailto:sample.preparation@is.mpg.de)

## School fee

The fee is 200.- EUR. This covers attendance of lectures, laboratories, school booklet, consumables for specimen preparation, reception and lunches.

For ESTEEM members the school is free of charge including accommodation. Reservations have been made from December 1<sup>st</sup> to December 6<sup>th</sup>, 2013 in the **arcona Mo.Hotel** in Stuttgart: <http://stuttgart.arcona.de/>  
**e-mail:** [info@stuttgart.arcona.de](mailto:info@stuttgart.arcona.de) **phone:** +49 711-28056-0

There is a bus stop in front of the hotel. You should take bus No. 81 and get off at the 'Max Planck Institutes bus' stop ( 5<sup>th</sup> stop from the hotel).

## Accommodation

For non ESTEEM members accommodation is also available at the **arcona Mo.Hotel**. Please ensure your accommodation by booking before November 1<sup>st</sup>, 2013. Please refer to "block reservation for Max Planck Institute": <http://stuttgart.arcona.de/>  
**e-mail:** [info@stuttgart.arcona.de](mailto:info@stuttgart.arcona.de) **phone:** +49 711 28056-0

Other hotels can be found using this link: <http://www.stuttgart-tourist.de/en>

## Registration

In order to register please complete and send your registration form by e-mail to the school organizing committee [sample.preparation@is.mpg.de](mailto:sample.preparation@is.mpg.de) before October<sup>15</sup>, 2013. An e-mail confirmation message will be sent to all participants in due time.

## Bank account

Delegates should settle the school fee via bank transfer to:

Name: Max Planck Institute for Intelligent Systems  
Reference: ESTEEM2 School  
Bank: Deutsche Bank  
Bank Code: 700 700 10  
Account no.: 195 130 039  
Swift-Code (BIC): DEUTDEMMXXX  
IBAN: DG 71 70070010 0195 1300 39

Bank transaction charges have to be covered by the participant.

## Deadlines

**15.10. 2013** registration  
**31.10. 2013** payment of the registration fee  
**28.10. 2013** abstract submission

## Organizing Committee

Birgit Bußmann, Caroline Heer (team-assistant), Marion Kelsch, Fritz Phillipp(chairman), and Ute Salzberger

## Contact

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Office team assistant phone: +49 711 689-3526  
E-mail: [sample.preparation@is.mpg.de](mailto:sample.preparation@is.mpg.de)  
Website: [http://www.is.mpg.de/202002/01\\_StEM\\_Mitarbeiter](http://www.is.mpg.de/202002/01_StEM_Mitarbeiter)

## Program – European School on Advanced TEM Sample Preparation

### Monday, 02.12.2013

8.30 - 9.30	Registration (P.A. van Aken)	
9.30 -10.30	Opening, introduction to TEM sample preparation (P.A. van Aken)	Lecture
10.30 -11.00	Coffee break	
11.00 -11.45	FIB – introduction (M. Dienstleder, Uni Graz)	Lecture
11.45 -12.30	Advanced TEM preparation using ion-beams and lasers (T. Höche, FHI Halle/Saale)	Lecture
12.30 -13.30	Lunch	
13.30 -14.15	(1) Double-wedge technique, (2) Shadow-FIB method (E. Spiecker, Uni Erlangen)	Lecture
14.15 -14.45	Coffee break	
14.45 -15.45	<b>Group I</b> Electropolishing of thin metallic foils (M. Kelsch, T. Dragon)	Lab
	<b>Group II</b> Mechanical sample preparation and ion milling under low incidence and low voltage (A. Höpner, Gatan; U. Salzberger)	Lab
15.45 – 16.45	<b>Group I</b> Mechanical sample preparation and ion milling under low incidence and low voltage (A. Höpner, Gatan; U. Salzberger)	Lab
	<b>Group II</b> Electropolishing of thin metallic foils (M. Kelsch, T. Dragon)	Lab

### Tuesday, 03.12.2013

9.00 - 10.30	Ultramicrotomy in Materials Research (H. Gnaegi, DiATOMÉ)	Lecture
10.30 - 11.00	Coffee break	
11.00 - 12.30	(Cryo)ultramicrotomy : <b>Group I</b> (R. Ranner, S. Mimietz-Oeckler, Leica)	Lab
	<b>Group II</b> (H. Gnaegi, B. Bußmann)	Lab
12.30 - 13.30	Lunch	
13.30 - 16.30	(Cryo)ultramicrotomy: <b>Group I</b> (R. Ranner, S. Mimietz-Oeckler, Leica)	Lab
	<b>Group II</b> (H. Gnaegi, B. Bußmann)	Lab
16.30 - 17.30	Poster session with "pretzels" and beer	

### Wednesday, 04.12.2013 Equipment News: Update of Companies

Lecture

9.00 - 9.30	Allied High Tech Products, Inc.
9.30 - 10.00	Leica Microsystems
10.00 - 10.30	Hitachi High-Technologies Europe GmbH
10.30 - 11.00	Coffee break
11.00 - 11.30	Fischione
11.30 - 12.00	Gatan GmbH
12.00 - 13.00	Lunch
13.00 - 13.30	Carl Zeiss Microscopy GmbH
13.30 - 14.00	FEI Deutschland GmbH
14.00 - 14.30	Coffee break
14.30 - 15.00	JEOL (Germany) GmbH
	Free time to visit Christmas market downtown Stuttgart
19.00	School dinner
21.00	Discussion

### Thursday, 05.12.2013

9.00 - 9.30	Wedge/Mechanical polishing method using the MultiPrep™ system (G. Liechty, Allied)	Lecture
9.30 - 10.00	Wedge-cleavage technique (D. Laub, EPFL)	Lecture
10.00 - 10.15	TEM electron transparent nanoparticles dispersion (D. Laub, EPFL)	Lecture
10.15 - 10.30	Coffee break	
10.30 - 12.30	<b>Group I</b> Wedge/mechanical polishing technique using the MultiPrep™ system (G. Liechty, U. Salzberger)	Lab
	<b>Group II</b> Wedge-cleavage technique and Small Angle Cleavage Technique (SACT) (D. Laub, M. Kelsch)	Lab
12.30 - 13.30	Lunch	
13.30 - 15.30	<b>Group I</b> Wedge-cleavage technique and Small Angle Cleavage Technique (SACT) (D. Laub, M. Kelsch)	Lab
	<b>Group II</b> Wedge/mechanical polishing technique using the MultiPrep™ system (G. Liechty, U. Salzberger)	Lab
15.30 - 16.00	Coffee break	
16.00 - 17.00	Open discussion	

### Friday, 06.12.2013

9.00 - 10.15	TEM visiting: <b>Group I</b> ARM, SESAM	<b>Group II</b> new microscopes
10.15 - 10.45	Coffee break	
10.45 - 12.00	TEM visiting: <b>Group I</b> new microscopes	<b>Group II</b> ARM, SESAM
12.00 - 12.30	Closing of the workshop	
12.30 - 13.30	Lunch	

**registration form:**

**Family name:** .....

**First name:** .....

**Title:** .....

**Company/Institute:** .....

.....

**Street:** .....

**ZIP code:** ..... **City:** .....

**Country:** .....

**Phone:** .....

**E-mail:** .....

**Date:** .....

**I intend to:** *(please tick the box, if applicable)*

**Present a poster**