



INSTITUTE I
MATERIALS SCIENCE
AND ENGINEERING

The Institute I of Materials Science & Engineering, FAU, was officially established on Aug 9th 1965 by late Prof. Bernhard Ilshner. The research topics of Institute I deal broadly with the mechanical properties of materials at the micro and nano scales. The institute has a rich research history, with more than 150 PhD graduates in the past 50 years, and has currently more than 30 students working towards their dissertation on various research topics.

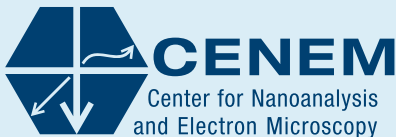
<http://gmp.ww.fau.de>



ENGINEERING
OF ADVANCED
MATERIALS

The Cluster of Excellence Engineering of Advanced Materials (EAM) is the only interdisciplinary research collaboration of its type in Germany focusing on fundamental and applied aspects of designing and creating novel high-performance materials and processes in nanoelectronics, catalysis, optics & photonics and lightweight construction.

www.eam.fau.de



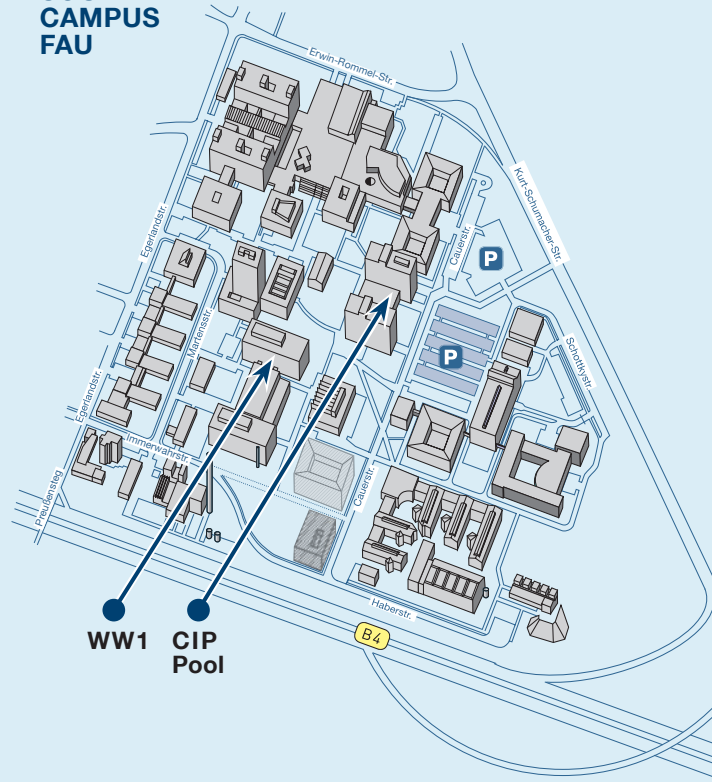
Center for Nanoanalysis
and Electron Microscopy

The Center for Nanoanalysis and Electron Microscopy (CENEM) is an Interdisciplinary Center of the Friedrich-Alexander-University Erlangen-Nürnberg established by EAM featuring cutting-edge instrumentation, techniques and expertise in microscopic and analytical characterization of materials and devices down to the atomic scale. CENEM focuses on complementary techniques, which closely work together: electron microscopy, scattering methods, scanning probe microscopies and APT.

www.cenem.fau.de

GENERAL INFORMATION

SOUTH CAMPUS FAU



VENUES

CIP Pool, Room 0.157
**Department Elektrotechnik-Elektronik-
Informationstechnik (EEI)**
Cauerstraße 9, 91058 Erlangen

**WW1 - Institute I
of Materials Science & Engineering**
Martensstraße 5 · 91058 Erlangen

CONTACT THE ORGANIZERS

Peter Felfer: peter.felfer@fau.de

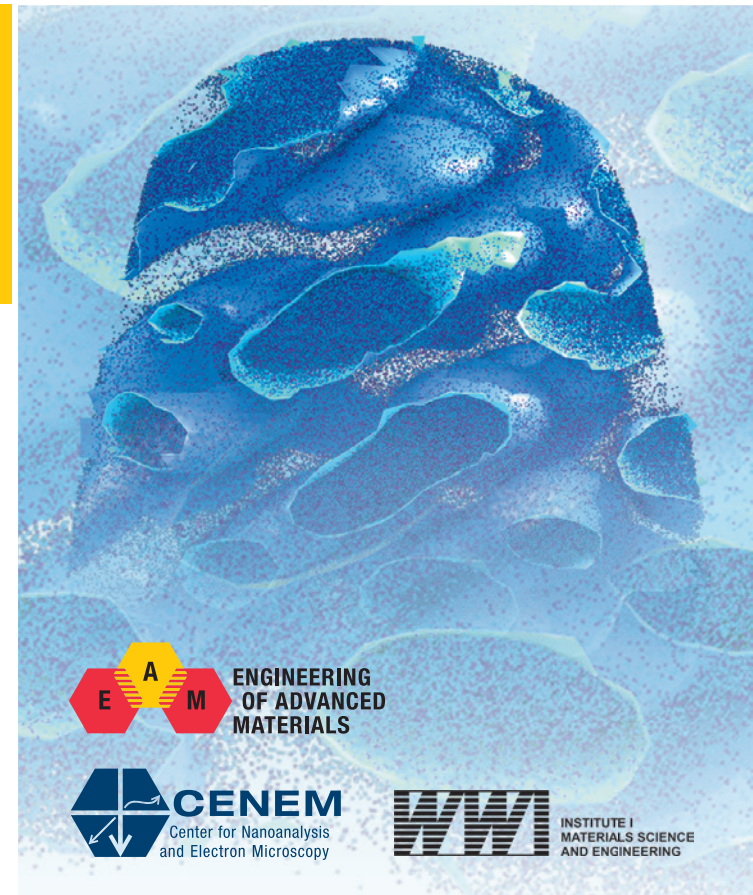
Chandra Macauley: chandra.macauley@fau.de



FRIEDRICH-ALEXANDER
UNIVERSITÄT
ERLANGEN-NÜRNBERG

2nd Erlangen School on Atom Probe Tomography

4 – 8 March 2019 · FAU Erlangen-Nürnberg
Martensstraße 5 · 91058 Erlangen · Germany



ENGINEERING
OF ADVANCED
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CENEM
Center for Nanoanalysis
and Electron Microscopy



INSTITUTE I
MATERIALS SCIENCE
AND ENGINEERING

2nd Erlangen School on Atom Probe Tomography

This multi-day intensive course provides an introduction to high field physics, atom probe instrumentation, sample preparation and data interpretation to the novice and intermediate level atom prober. As an outcome, the participants will be able to independently perform atom probe experiments, reconstruct their data and carry out in-depth analysis of a variety of different problem sets. Electrochemical- and FIB-sample preparation tutorials are included.

ORGANIZERS



Prof. Peter Felfer

Materials Science and Engineering, Institute I
FAU Erlangen-Nürnberg
Professor for Atom Probe Tomography
and 3D Nanoanalytics



Dr. Chandra Macauley

Materials Science and Engineering, Institute I
FAU Erlangen-Nürnberg
Postdoctoral researcher

Program

Monday, 4 March 2019

WW1, Room 3.31

13⁰⁰ – 15⁰⁰ Atom Probe Tomography (APT)
Fundamentals

15⁰⁰ – 15³⁰ Coffee break in the WW1 foyer

15³⁰ – 17⁰⁰ Atom Probe Tomography (APT)
Fundamentals

Tuesday, 5 March 2019

WW1, Room 3.31

8³⁰ – 10¹⁵ APT instrumentation

10¹⁵ – 10⁴⁵ Coffee break in the WW1 foyer

10⁴⁵ – 12⁰⁰ APT instrumentation

12⁰⁰ – 13⁰⁰ Lunch

13⁰⁰ – 15⁰⁰ Practical 1/2/3

15⁰⁰ – 15³⁰ Coffee break in the WW1 foyer

15³⁰ – 17⁰⁰ Practical 1/2/3

Wednesday, 6 March 2019

WW1 Microscopes

8³⁰ – 10¹⁵ Practical 1/2/3

10¹⁵ – 10⁴⁵ Coffee break in the WW1 foyer

10⁴⁵ – 12⁰⁰ Practical 1/2/3

12⁰⁰ – 13⁰⁰ Lunch

13⁰⁰ – 15⁰⁰ Practical 1/2/3

15⁰⁰ – 15³⁰ Coffee break in the WW1 foyer

15³⁰ – 17⁰⁰ Practical 1/2/3

Thursday, 7 March 2019

CIP Pool, Room 0.157

8³⁰ – 10¹⁵ Data analysis basics, data handling
and visualization

10¹⁵ – 10⁴⁵ Coffee break

10⁴⁵ – 12⁰⁰ Data analysis basics, data handling
and visualization (continued)

12⁰⁰ – 13⁰⁰ Lunch

13⁰⁰ – 15⁰⁰ Reconstructions: Isosurfaces
and proxigrams

15⁰⁰ – 15³⁰ Coffee break

15³⁰ – 17⁰⁰ Reconstructions: interface modelling

Friday, 8 March 2019

CIP Pool, Room 0.157

8⁰⁰ – 10¹⁵ Field evaporation simulation

10¹⁵ – 10⁴⁵ Coffee break

10⁴⁵ – 12⁰⁰ Field evaporation simulation (continued)

Practical sessions

After the APT instrumentation lecture, participants will be split into three smaller groups and experience each of the three practical sessions.

- 1) Non-site-specific sample preparation (electro-polishing), focused ion microscope and high vacuum equipment demonstration: *Jan Josten*
- 2) Site-specific sample preparation (focused ion beam microscope): *Chandra Macauley*
- 3) LEAP atom probe measurements: *Steffen Lamm*