

CM-UFGM pre and post congress workshop

CM-UFGM(www.microscopia.ufmg.br – colocar link no cm-ufmg) is the new multi and interdisciplinary Center of Microscopy of the Federal University of Minas Gerais (UFMG). Huge efforts are being put into training people. This year we offer four courses which mix theory, demonstration and hands-on experience in the laboratories. All courses will be given at the CM-UFGM building which is located on UFMG Pampulha campus (link to image of campus).

Please send an email to karlaweit@gmail.com with a short curricula vitae including the following information: Name, Department/Institute or Company, Email, Address Telephone. Background (if researcher, graduation or undergraduation course). Interest in the workshop, indicating if already involved in the area and which of the four courses you are interested in (5 lines maximum).

If you want to bring samples, please add a brief description of them.

Please note we can not promise to handle and check all samples during the workshop.

1) Cryo and Ultramicrotomy for material Sciences – an overview in the lab.

Instructors: Dr. Helmut Gnägi (Diatome - Switzerland)

Cryo and ultramicrotomy are returning sample preparation techniques in material science. An overview of the technique and several applications will be demonstrated on the equipments. Mainly resins and polymeric materials are prepared this way nowadays, but also semiconductors, metals and steels.

Date: 16th and 17th of September

Place: Centro de Microscopia da UFGM (CM-UFGM) – Belo Horizonte

Hours: 15 hours

Places: 10 people

Participants are welcome to bring their own samples.

2) EBSD from the basics to texture analysis (theory and software)

Instructor: Dr. Douglas Miquita, Dr. Marília Magalhães, Dr. Orlando Leon Garcia, (CM-UFGM - Brasil) prof. Dr. Helmut Schaeben. (Bergakademie Freiberg – Germany)

An introduction to EBSD (electron backscattering diffraction) followed by a tutorial based on TSL/EDAX/FEI software. Following an introduction to texture analysis and practical examples using specific software will be worked out.

Date: 13th to 17th of September

Place: Institute of Exact Sciences - UFGM (ICEX-UFGM) – Belo Horizonte

Requirement: basic knowledge in mathematics: dot and cross product, matrices.

Hours: 30 hours

Places: 20 people

Please bring your own laptop.

3) Novel sample preparation techniques in interdisciplinary sciences

Instructors: Prof. Dr. Jeanne Ayache (CNRS- France)

In the last decade more researchers from areas which were not the first ones involved with electron microscopy as biology, engineering and geology are making use of this characterization technique. Also features to be observed are into the nanoscale and angstrom region. Sample preparation methods which avoid artifacts and reveal the structure to be observed will be discussed and demonstrated with several samples.

Negative staining for nanoparticles, cryo and ultramicrotomy and tripod polishing are among the techniques which will be showed. The results will be observed and discussed in the microscope.

Date: 27th September to 1st of October

Place: Centro de Microscopia da UFMG (CM-UFMG) – Belo Horizonte

Hours: 35 hours

Places: 10 people

Participants are welcome to bring their own samples.

4) Hands-on at the Quanta 200 FEG high resolution scanning electron microscope

Instructors: Dr. Douglas Miquita and BSc. Breno Barbosa Moreira - (CM-UFMG - Brasil), prof. Dr. Karla Balzuweit (DF- UFMG - Brasil)

Basic routines, alignment procedures, secondary, backscattered and transmitted electron detectors.

Date: 27th September to 1st of October

Place: Centro de Microscopia da UFMG (CM-UFMG) – Belo Horizonte

Requirement: Basic theoretic knowledge in scanning electron microscopy.

Hours: 35 hours

Places: 6 people

Participants are welcome to bring their own samples.