

# Seminar

## ***“Advances in Determining Material Parameters”***

March 7-8, 2011

EMPA – Swiss Federal Laboratories for Materials Science and Technology  
Thun, Switzerland



This forum will be carried out as the next (13<sup>th</sup>) event in the series of seminar/workshops “*Computer Modeling in Microwave Engineering and Applications*” organized annually by the **Industrial Microwave Modeling Group (IMMG)** of **Worcester Polytechnic Institute (WPI)**, Worcester, MA, USA. In 2011, the meeting will be co-organized by the **Laboratory for Advanced Materials Processing** of the **Swiss Federal Laboratories for Materials Science & Technology (EMPA)**.

### Seminar Objectives

Electromagnetic and thermal parameters of materials are of high importance to the designers of systems for microwave thermal processing. Determination of these parameters is experimentally challenging and, at the same time, involves (usually quite non-trivial) computation of the parameters in question from measurable quantities. This one-and-a-half day interdisciplinary forum will bring together:

- Experimentalists with expertise in measurement of complex permittivity and thermal parameters,
- Analysts working with techniques of mathematical/computer modeling applicable to determination of material characteristics and
- Researchers studying microwave thermal processing of materials and developing corresponding applications.

The attendees will share their experience in the related fields with their counterparts, discussing major issues that slow down development of adequate and accurate technologies for reconstruction of material properties.

### Important Dates

Submission of titles and abstracts: **January 10, 2011**  
Notification of acceptance: **January 25, 2011**  
Submission of summaries: **February 5, 2011**  
Preliminary program: **February 21, 2011**  
Seminar & Final program: **March 7-8, 2011**

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### General Profile

The Seminar will start with a half-day Workshop featuring introductory and review presentations given by renowned experts in the field, representatives of measurement equipment manufacturers, and representatives of software companies.

For its technical sessions, the Seminar invites technical contributions related (but not limited) to:

- Advances in measurements of the dielectric constant and loss factor of different materials (including temperature- and density-dependent characteristics);
- Modeling-based techniques of reconstruction of complex permittivity (homogeneous and heterogeneous distributions) and NDE/NDT;
- Modern techniques of determination of thermal conductivity, heat capacity and density (including temperature-dependent characteristics);
- New findings about material properties of particulate materials – ceramic, metal, composite powders;
- R&D projects illuminating importance of precise data on material parameters in the entire temperature range for designing microwave heating systems.

### Venue

The seminar will be held in the facilities of the Swiss Federal Laboratories for Materials Science and Technology (EMPA), Feuerwerkstrasse 39, CH-3602 Thun, Switzerland



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More info and the form for online submission will be available at the seminar web page at <http://www.wpi.edu/+CIMS/IMMG/Seminars/>