



OCM 2013

International
Conference on
Optical
Characterization
of Materials

March 6th-7th, 2013
Karlsruhe / Germany

International Conference on **Optical Characterization of Materials**

Conference Topic

Each material has its own specific spectral signature independent if it is food, plastics, or minerals. During the conference we will discuss new trends and developments in material characterization. You also will be informed about latest highlights to identify spectral footprints and their realizations in industry.

The International Conference on Optical Characterization of Materials (OCM-2013) is organized by the Karlsruhe Center for Spectral Signatures of Materials (KCM) in cooperation with the German Chapter of the Instrumentation & Measurement Society of IEEE.

KCM is an association of institutes of the Karlsruhe Institute for Technology (KIT) and the business unit Automated Visual Inspection of the Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (Fraunhofer IOSB).

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Preliminary Conference Program

March 6th, 2013

10:00 **Tour at Fraunhofer IOSB** (optional)

12:00 **Registration and Snack**

13:00 **Welcome and Opening**

13:15 **Session: Measurement Principles**

- Spectral imaging in process analytics using chemometrics and first principles / R.W. Kessler; Reutlingen University - Process Analysis and Technology
- MEMS based systems and their applications in NIR spectroscopy for materials analysis / H. Gröger; Fraunhofer IPMS
- Characterization and identification of plastics through microwave treatment and temperature measurement / M. Labbert; University Zittau/Görlitz

14:30 **Coffee Break**

15:00 **Session: Spectroscopy**

- Infrared reflection absorption spectroscopy for characterization of alkylsilane monolayers on silicon nitride surfaces / X. Stammer; Bruker Optics GmbH
- Raman reflection and transmission spectroscopy for the chemical characterization of solid materials / E. Ostertag; Reutlingen University - Process Analysis and Technology
- Raman spectroscopy for the characterization of cultural heritage and innovative products / K. Egly; Fraunhofer ISC

16:15 Coffee Break

16:45 Session: Food Inspection I

- The potential of near infrared spectroscopy in measuring breadmaking quality characteristics of wheat / A. Hüsken; Max Rubner-Institut
- Comprehensive, non-invasive, and quantitative monitoring of the health and nutrition state of crop plants by means of hyperspectral imaging and computational intelligence based analysis / U. Seiffert; Fraunhofer IFF
- Improving optical fruit sorting by non-destructive determination of quality parameters affecting wine quality / M. Lafontain; Geisenheim Research Institute

18:00 Summary First Day

19:30 Dinner

*Badische Weinstuben
Schlossbezirk 6
76131 Karlsruhe*

www.badische-weinstuben.de



Preliminary Conference Program

March 7th, 2013

09:00 Session: Food Inspection II

- Active infrared thermography as a tool for quality control in the food industry / J. Aderhold; Fraunhofer WKI
- Non-invasive quality assessment of fruit and vegetables / P. Butz; Max Rubner-Institut
- Detection of non-metallic impurities and defects through radar measurements / D. Nüßler; Fraunhofer FHR

10:15 Coffee Break

10:45 Session: Spectral Data Processing

- Evaluation of linear spectral unmixing using nonnegative matrix factorisation on stationary hyperspectral sensor data of specifically prepared mineral and rock mixtures / W. Groß; Fraunhofer IOSB
- Understanding multispectral images of wood strands with matrix factorization / M. Asbach; Fraunhofer IAIS
- Spectral and spatial unmixing for material recognition in sorting plants / M. Michelsburg; KIT-IIT

12:00 Lunch

13:00 Session: Mineral Characterisation

- Potential of NIR hyperspectral imaging in the minerals industry / C. Schropp; AMR RWTH Aachen University
- The applicability of near infra-red (NIR) spectroscopy for sensor based sorting of a porphyry copper ore / M.Dalm; TU Delft
- Fluorescence- and reflection spectroscopy for automatic classification of industrial minerals / J. Hofer; Binder + Co AG

14:15 Coffee Break

14:45 Session: X-Ray

- X-Ray transmission sorting of tungsten ore / M. Robben; AMR RWTH Aachen University
- Quantitative sorting using dual energy X-ray transmission imaging / M. Firsching; Fraunhofer IIS
- Sensor sorting of non-ferrous post-consumer scrap / B. Wens; I.A.R. RWTH Aachen University

16:00 Final Summary

Preliminary Poster Presentation

March 6th-7th, 2013

Posters are presented during all coffee breaks

Food Inspection

- Image analysis of natural products / G. Linß; TU-Ilmenau
- Evaluation of postharvest quality development of stored kiwifruit based on near infrared spectroscopy / S. Bliedung; Max Rubner-Institut
- Mobile food inspection by optical methods / V. Großer; Fraunhofer IZM

Measurement Principles

- Optical and electrical properties of Al/Al₂O₃ cermets obtained by plasma spraying: role of operating parameters and microstructure / D. Toru; Université François-Rabelais de Tours
- Time-resolved reaction monitoring by NIR spectroscopy / H. Krüger; Polytec GmbH
- Improved fault detection for inline optical inspections by evaluation of NIR-images / H. Eigenbrod; Fraunhofer IPA

Mineral Characterization

- A comparison between NIR hyperspectral imagery and NIR point spectra for characterisation of a porphyry copper ore / M. Dalm; TU Delft

Recycling

- Polymer identification with terahertz technology / A. Maul; I.A.R. RWTH Aachen University
- Automatic sorting of mixed c&dw recycled aggregates by near-infrared technology / T. Schnellert; Bauhaus-Universität Weimar
- Characterisation of materials in the millimetre wave frequency region for industrial applications / D. Nüßler; Fraunhofer FHR

Spectral Data Processing

- A framework for storage, visualization and analysis of multispectral data / S. Irgenfried; KIT-IPR
- Chemical color imaging and its advantages by deploying hyperspectral cameras for industrial application / M. Burgstaller; Perception Park

Spectroscopy

- Multispectral imaging – from the lab to end-user applications / O. Lichtschenko; Ocean Optics



Conference Venue

Fraunhofer IOSB
Fraunhoferstr. 1
76131 Karlsruhe, Germany

Karlsruhe, Germany

Karlsruhe, a city in the sunny south-west of Germany, famous for its fan-shaped historic street plan, close to the French border and surrounded by the beautiful countryside of the Black Forest is a perfect place for conferences as well as for leisure time.

Karlsruhe is easily accessible via train, motorway or plane (Frankfurt, Stuttgart, Karlsruhe / Baden-Baden). The Fraunhofer IOSB, which will host the conference, is located in walking distance to the heart of the city.



Binding Conference Registration OCM-2013

Family and First Name

Company

Address

E-Mail

Alternativ billing address

Date, Signature

Conference Venue

Fraunhofer IOSB, Fraunhoferstr. 1, 76131 Karlsruhe, Germany

Registration Fee

- For participants 460,-€
- Registration before February 1st, 2013 430,-€
- For speakers 320,-€
- Registration before February 1st, 2013 290,-€
- For students 150,-€
- Registration before February 1st, 2013 120,-€

Registration fee includes: Conference proceedings, snacks and beverages during coffee breaks as well as buffet dinner on Wednesday and buffet lunch on Thursday.

Cancellations

Refunding per registration for cancellations received in writing to KCM prior February 1st, 2013 (less 80 € processing fee). No refunding after February 1st, 2013.

Contact

KCM, c/o Fraunhofer IOSB, Fraunhoferstr. 1, D-76131 Karlsruhe; E-Mail: Info@OCM-2013.eu

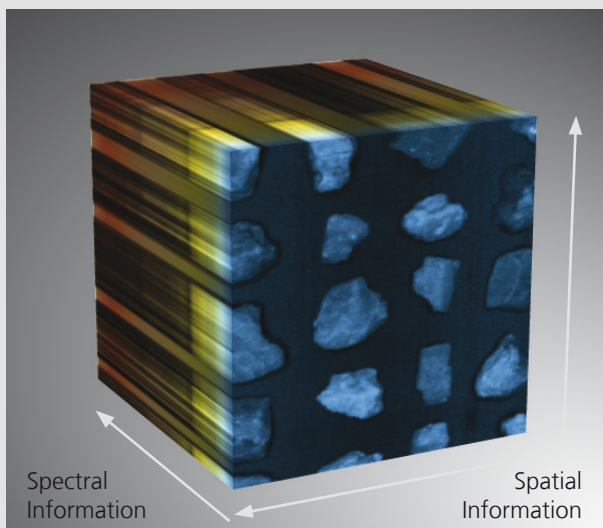
Fax: +49 721 6091-556

Register directly

www.OCM-2013.eu/registration/

[KCM]

Karlsruhe Center for Material Signatures



www.OCM-2013.eu

www.materialsignatures.com

Updated: October 20th, 2012