



3rd INTERNATIONAL CONFERENCE ON
OPTICAL CHARACTERIZATION OF MATERIALS

MARCH 22-23, 2017 // KARLSRUHE, GERMANY // PROGRAM

**OCM
2017**



We will discuss future technologies of material characterization.

Can perfect color measurements replace spectroscopy?

Be part of this discussion!



SpectroNet Collaboration Forum Karlsruhe 2017

March 21st, 2017; 10:00h – 17:00h

10 minutes talks by representatives of industry and science

Starting at 17:30h Special Session: Sensor Comparison

- Comparability of spectroscopic measurements from different institutes and sensors; Evaluation based on different food samples / R. Gruna; Fraunhofer IOSB
- Benchmark mobile sensors: What is the ability of the new cheap consumer sensors? / J. Krause; Fraunhofer IOSB
- Live demonstration: Comparison of sensors; simultaneous measurement and summarized presentation of results





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OCM-2017 Conference Program

March 22nd, 2017

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

12:00h **Registration**

13:00h **Opening Ceremony**

- Keynote Speech: Remote sensing and deep learning: smart processing of images from above / Prof. Dr. Devis Tuia; University of Zurich
- Analysis of plant raw materials and extracts applying various vibrational spectroscopy techniques - possibilities and limitations / Prof. Dr. Hartwig Schulz; Julius Kühn-Institut

Poster Flashlight / Pitch: 60 sec. core aspects of each poster

15:15h **Session 1: Food Inspection**

- Employing NIR-SWIR hyperspectral imaging to predict the smokiness of scotch whisky / J. Tschannerl; CeSIP University of Strathclyde
- Simultaneous detection of melamine and urea in gluten with a handheld NIR scanner / Z. Kovacs; Telspec Inc.
- Non-invasive assessment of the bioburden of minced pork using a hand-held fluorescence device / H. Schmidt; University of Bayreuth

17:00h **Session 2: Spectral Applications**

- Defect detection of green coffee by NIR-hyperspectral imaging and multivariate pattern recognition / C. Malegori; DeFENS-University of Genoa
- Comparison between manual and automated identification of inert materials from demolition waste using hyperspectral imaging/ S. Serranti; La Sapienza University of Rome
- Democratizing optical spectroscopy / D. Goldring; ConsumerPhysics

19:30h **Panel Discussion and Dinner**

Panel discussion and dinner will be held at the Karlsruhe Palace.

Discussion leader and moderator: H. Grüger; Fraunhofer IPMS

- Has the measurement of spectral data a value on its own?
- Data analysis / inquiries with "foreign" data – how to secure quality requirements?



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09:00h Session 3: Spectral Sensors

- Quality inspection on recycled coarse aggregates using laser-induced breakdown spectroscopy / H. Xia; University of Technology Delft
- Concentration determination for sorting applications using dual energy X-ray transmission imaging / J. Lucic; Fraunhofer IIS
- How to analyze food and how to sell a food analysis system / P. Reinig; Fraunhofer IPMS

10:45h Session 4: Spectral Data Processing

- Optical measurement of material abundances in mixtures incorporating preprocessing to mitigate spectral variability / W. Krippner; KIT-IIIIT
- Improving material characterization in sensor-based sorting by utilizing motion information / G. Maier; Fraunhofer IOSB
- Inline density measurement for rock wool / D. Nüssler; Fraunhofer FHR

12:00h Lunch

13:00h Session 5: Spectral Applications

- Optical characterization of artist's materials in ancient paintings by spectral imaging in the VIS-IR range / G. Marchioro; University of Verona
- Characterization of sizes on textiles by in-line NIR chemical imaging / K. Heymann; Leibniz Institute of Surface Modification
- Inline monitoring of structural quality and thermal conductivity of plastics in the hot extrusion process by means of infrared thermography / J. Aderhold; Fraunhofer WKI

14:45h Session 6: Recycling and Environment

- Hyperspectral imaging based approach for monitoring of micro-plastics from marine environment / G. Bonifazi; University of Rom
- NIR-SWIR-Hyperspectral-Imaging supported surface analysis for the recovery of waste wood / F. Hollstein; RTT Steinert GmbH
- THz imaging for recycling of black plastics / A. Küter; Fraunhofer FHR

16:00h Final Summary



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Poster Presentation March 22nd – 23rd, 2017

Poster Flashlight after Opening Ceremony: Core aspects of each poster in 60 sec.

Posters will be presented during all coffee breaks

Food Inspection

- Detection of beef aging combined with the differentiation of tenderloin and sirloin, using a handheld NIR scanner / G. Bazar; Telspec Inc.
- Usability and accuracy of nutrition-apps for weight management and reduction – a pilot study / A. Buchhart; Hochschule Weihenstephan-Triesdorf University of Applied Sciences
- **Benchmark mobile sensors: What is the ability of the new cheap consumer sensors?** / J. Krause; Fraunhofer IOSB

Spectral Applications

- Infrared spectral imaging for damage detection and prevention of overhead power lines / G. Molinar; KIT-ITIV
- Embedded technology revolutionizes spectral measurement systems with integrated processing / C. Lux; tec5 AG
- Material based sorting of the demolition waste fine grain fraction by means of optical computing / R. Gruna; Fraunhofer IOSB

Spectral Sensors

- Optical identification of valuable materials on printed circuit board assemblies based on sensor fusion / J. Ruecker; University of Applied Sciences Aschaffenburg
- xiSpec hyperspectral camera, data analysis and correction / J. Hillmann; XIMEA GmbH
- CCD, CMOS or InGaAs? How to choose an array detector for different spectroscopic applications? / I. Thome; OceanOptics BV

Spectral Data Processing

- Automatic tungsten carbide particle detection in weld pool / M. Rosenberger; Ilmenau University of Technology
- Splicing Spectral Data of Compact Spectrometers Using Different Detector Technology / O. Lischtschenko; OceanOptics BV
- Evaluation and comparison of different approaches to multi-product brix calibration in near-infrared spectroscopy / M. Kopf; Fraunhofer IOSB