FTIR
Forum
FTIR Diagnostic

Workshop

FTIR Spectroscopy in Microbiological and Medical Diagnostic

Robert Koch-Institute, Berlin
October 21-22, 2004

Program

Thursday, October 21st

8:30 - 10:00	Registration
10:00 - 10:15	Opening Remarks Introduction (**D. Naumann**, RKI)
10:15 - 10:35	**M. Wenning** (Freising, Germany) Microbial population analyses by FT-IR microspectroscopy
10:40 – 11.00	**M. Mossoba** (College Park, USA) Printing microarrays of bacteria for identification by IR
11:05 - 11:25	**J. Kirkwood** (Montreal, Canada) Molecular fingerprinting of 47 *Clostridium botulinum* isolates by Focal-Plane-Array Fourier Transform Infrared (FPA-FTIR) spectroscopy
11:25 - 11:55	Coffee Break
12:00 - 12:20	**A. Oust** (Ås, Norway) Multivariate analysis of DNA microarrays and FT-IR spectra for study of survival mechanisms in *Campylobacter jejuni*

12:25 - 12:45 **C. Klaassen** (Nijmegen, The Netherlands)
FTIR library for routine medical microbial diagnostics

12:50 - 13:10 **M. Boese** (Ettlingen, Germany)
FT-IR analyzer for routine microbiology

13:15 - 14:00 Lunch

14:00 - 14:20 **G. Sockalingum** (Reims, France)
Species and sub-species identification of Candida clinical isolates by FTIR and RAPD techniques

14:25 - 14:45 **K. Eschrich** (Leipzig, Germany)
Identification and differentiation of bacteria by MALDI-TOF MS

14:50 - 15:10 **K. Maquelin** (Rotterdam, The Netherlands)
Raman spectroscopic analysis of microorganisms, finding the limits of sensitivity

15:15 - 15:35 **D. Hutsebaut** (Ghent, Belgium)
On the taxonomic resolution of Raman microspectroscopy: Identification within the highly related *Bacillus subtilis* group

15:40 - 16:10 Coffee Break

16:10 - 16:30 **R. Rösch** (Jena, Germany)
Micro-Raman spectroscopic identification of single bacteria from clean room production

16:35 - 16:55 **R. Goodacre (**Manchester, U.K.)
Enhancing Raman spectroscopy for the rapid identification of microorganisms

17:00 – 17:20 **B. Wood** (Clayton, Australia)
Raman microscopy and imaging in malaria research

17.25 - 19.00 **Poster Session**

P1 **A. Bosch (**La Plata, Argentina)
Differentiation of homofermentative Lactobacilli isolated from kefir grains by FT-IR spectroscopy

P2 **M. Erhard** (Luckenwalde, Germany)
SARAMIS a new way of data management of MALDI-TOF MS for microorganism-identification

P3 **M. Grube** (Riga, Latvia)
Interrelationships between the main chemical components in the biomass of *Zymomonas mobilis* strains with different biosynthetic potentials

P4 **M. Harz** (Jena, Germany)
Micro-Raman spectroscopical identification of bacterial cells of the genus Staphylococcus in dependence on their cultivation conditions

P5 **H.M. Heise** (Dortmund, Germany)
Cumulative microbial biomass characterization of a 2-stage anaerobic bio-digester using ATR-infrared spectroscopy

P6 **C. Matthäus** (New York, USA)
Raman – microscopy of individual cells

P7 **M. Miljkovic** (New York, USA)
Monitoring cell cycle by IR microspectroscopy

P8 **M. Mossoba** (College Park, USA)
Printing microarrays of bacteria for identification by IR

P9 **B. Mohlenhoff** (New York, USA)
Buccal epithelial models for liquid-based infrared cervical diagnostics

P10 **U**. **Neugebauer** (Jena, Germany)
The investigation of the influence of norfloxacin and ciprofloxacin on *Bacillus pumilus* by means of Raman spectroscopy

P11 **R. Petry** (Jena, Germany)
UV micro Raman studies of *Alicyclobacillus acidoterrestris*

P12 **C. Rebuffo** (Freising, Germany)
Rapid identification of species of Listeria by FT-IR spectroscopy and artificial neural networks

P13 **M. Romeo** (New York, USA)
Dispersion artifact correction in single cell microspectra

P14 **S.G. Spassov** (Berlin, Germany)

P15 **K. Stehfest** (Leipzig, Germany)
Analyses of silicon and carbon cell quota of Diatoms studied with FTIR-spectroscopy

P16 **S. Goerges** (Freising, Germany)
Surface microflora of Limburger cheese

P17 **A. Maoz** (Freising, Germany)
Temporal stability and biodiversity of two complex, anti-listerial cheese ripening microbial consortia

19:00 - ?? Dinner (buffet, free of charge)

Friday, October 22nd

9:00 - 9:20 **M. Diem** (New York, USA)
Raman and infrared micro-spectroscopy of individual cells: A summary

9:25 - 9:45 **S. Boydston-White** (New York, USA)
FTIR microspectroscopy of single proliferating eukaryotic cells

9:50 - 10:10 **P. Gardner** (Manchester, U.K.)
A study of cytokinetic and motile prostate cancer cells using synchrotron based FTIR - microspectroscopic imaging

10:15 - 10:45 Coffee Break

10:45 - 11:05 **D. Moss** (Karlsruhe, Germany)
IR microspectroscopy of single live cells

11:10 - 11:30 **C. Wilhelm** (Leipzig, Germany)
FT-IR spectroscopy of algal cells

11:35 - 11:55 **P. Heraud** (Clayton, Australia)
In vivo IR mapping of micro-algal cells using synchrotron sources

12:00 - 13:00	Lunch
13:00 - 13:20	**G. Fischer** (Aachen, Germany) Identification of airborne microfungi by Fourier-transform infrared spectroscopy (FT-IR) based on mycelial extracts
13:25 - 13:45	**A. Bosch** (La Plata, Argentina) Development of a new technique for the detection of *Moraxella bovis* piliated cells using spectroscopic markers of type IV pili
13:50 - 14:10	**R. K. Sahu (**Beer Sheva, Israel**)** Variations in FTIR spectra between opaque and transparent phenotypic variants of *Streptococcus pneumoniae*
14:15 - 14:35	**A. Piry** (Ettlingen, Germany) Bioprocess control by FT-IR spectroscopy
14:40 - ??	Final Discussion Concluding Remarks (**NN)**

Aim

The workshop is intended to bring together scientists using and developing infrared and Raman spectroscopic techniques for the analysis of microbial, plant, animal or human cells, tissues, and body fluids. Following the lines of our two successful workshops in October 1996 and 1998 in Berlin, a major point of discussion will be FT-IR applications in medical and other fields of microbiology. The aim of the meeting is also to facilitate the exchange of ideas, practical problem solutions and experiences.

Place and Time

Robert Koch-Institute
Nordufer 20
13353 Berlin
Germany

Registration: October 21, 2004: 8:30 - 10:00

Beginning: October 21, 2004: 10:00
End: October 22, 2004: 15:00

Organisation

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Sponsoring

Financial and technical support came from:

Robert Koch-Institut Bruker Optics GmbH Synthon GmbH