

CONFERENCE & WORKSHOP PROGRAMME

The logo for the RME 2016 conference series is a vertical rectangle with a dark blue background. It features three horizontal bands of text. The top band is dark blue with white text: 'THE RME CONFERENCE SERIES' and '11TH CONFERENCE'. The middle band is a lighter blue with white text: 'Food Feed Water Analysis' and 'Human Animal Diagnostics'. The bottom band is dark blue with light blue text: '7-9 NOVEMBER 2016' and 'Innovations and breakthroughs!'. The text 'Rapid Methods EUROPE' is faintly visible in the background of the top band.

THE RME CONFERENCE SERIES
11TH CONFERENCE **RME₂₀₁₆**

Food Feed Water Analysis
Human Animal Diagnostics

7-9 NOVEMBER 2016
Innovations and breakthroughs!

Updated 31 October 2016

RAPID VIEW

MONDAY 7 NOVEMBER 2016

09:00	Opening of RME2016	Instrument & manufacturers exhibition
09:15 – 09:45	Keynote lecture	
09:45 – 12:45	Plenary meeting <i>Rapid analytical and diagnostic methods – what's up?</i>	
12:45 – 13:45	Lunch break & poster viewing	
13:45 – 15:45	Plenary meeting <i>Rapid analytical and diagnostic methods – what further?</i>	
15:45– 16:15	Networking break & poster viewing	
16:15 – 17:00	Lightning talks <i>Short presentations by exhibitors</i>	
17:00 – 18:00	Workshops – Round I	
18:00 – 19:00	Poster viewing & drinks	

TUESDAY 8 NOVEMBER 2016

08:30 – 12:45	Parallel session 1 <i>Food quality, authenticity and fraud – rapid and cost-effective approaches</i>	Parallel session 2 <i>Pathogenic and spoilage bacteria – rapid detection and identification</i>	Instrument & manufacturers exhibition
		Parallel session 3 <i>Water quality – concentration versus deviation management</i>	
12:45 – 14:00	Lunch break & poster viewing Workshops – Round II		
14:00 – 18:00	Parallel session 4 <i>Rapid methods for the detection of microorganisms in drinking water and water used for food preparation</i>	Parallel session 5 <i>Rapid methods for animal and human diagnostics</i>	
17:15 – 18:00	Vendor demonstrations <i>Aquavalens project</i>	Parallel session 6 <i>Special presentations – various topics</i>	
18:30 – 21:45	Canal tour & conference dinner (reservations only)		

WEDNESDAY 9 NOVEMBER 2016

08:30 – 13:15	Plenary meeting <i>Rapid methods and platforms for food & feed analysis</i>
13:15	Closing of RME2016

CONFERENCE PROGRAMME

MONDAY 7 NOVEMBER 2016

- 09:00 **Opening of RME2016**
Dr. Aart van Amerongen, BioSensing & Diagnostics, Wageningen University & Research, the Netherlands
- 09:15 **Keynote lecture**
Putting your finger on the problem: rapid and non-invasive drug testing from a single fingerprint
Dr. Melanie Bailey, Department of Chemistry, University of Surrey, UK and Dr. Marcel de Puit, Netherlands Forensic Institute and Delft University of Technology, the Netherlands
- Plenary meeting: Rapid analytical and diagnostic methods – what's up?**
- Chair: Dr. Aart van Amerongen, BioSensing & Diagnostics, Wageningen University & Research, the Netherlands
- 09:45 *Paper-based nanobiosensors: simple biosensing platforms compatible with smart phones*
Prof.dr. Arben Merkoçi, ICREA, Catalan Institute of Nanoscience and Nanotechnology, BIST, Spain
- 10:10 *Innovations in DNA approaches*
Dr. Esther Kok, RIKILT Wageningen University & Research, the Netherlands
- 10:35 *What's in my food? The use of next generation sequencing for food authenticity and safety*
Dr. Rachel Glover, Fera Science Ltd., UK
- 11:00 **Networking break**
- 11:30 *Semiconductor sequencing – how an easy and fast workflow can make a difference to environmental and industrial research*
Sylvie Van Loon, Thermo Fisher Scientific, Belgium
- 11:55 *Metagenomic approaches to better understand microbial ecology and interaction in food fermentations*
Prof.dr. Luca Cocolin, Department of Agricultural, Forest and Food Science, University of Turin, Italy
- 12:20 *Metagenomic ventures into outer sequence space*
Dr. Bas E. Dutilh, Theoretical Biology and Bioinformatics, Utrecht University, the Netherlands
- 12:45 **Lunch break**
Exhibition & poster viewing

MONDAY 7 NOVEMBER 2016

Plenary meeting: Rapid analytical and diagnostic methods – what further?

Chair: Prof.dr. Sarah De Saeger, Department of Bioanalysis, Ghent University, Belgium

- 13:45 *Molecularly imprinted polymers: plastic antibody mimics for assays and sensors in food analysis*
Prof.dr. Karsten Haupt, Institute of Enzyme and Cell Engineering, Compiègne University of Technology, France
- 14:05 *Nucleic acid-based sensors for food safety and quality control*
Dr. María Jesús Lobo Castañón, Department of Physical and Analytical Chemistry, University of Oviedo, Spain
- 14:25 *A fibre optic platform for use in sensing chemical and microbiological water contamination*
Dr. Matthew Partridge, Centre for Engineering Photonics, Cranfield University, UK
- 14:45 *Towards harmonisation of performance criteria for mycotoxin screening methods; the EU perspective*
Dr. Veronica M.T. Lattanzio, Institute of Sciences of Food Production (ISPA-CNR), Italy
- 15:05 *A decision support system (DSS) for unauthorised GMOs*
Prof. dr. Marko Bohanec, Jožef Stefan Institute, Slovenia
- 15:25 *The need to test weed: legalisation and safety testing of Cannabis in North America*
Dr. Marcia Armstrong, QIAGEN Inc., USA
- 15:45 **Networking break**
Exhibition & poster viewing
- 16:15 **Lightning talks**
Short presentations by exhibitors to inspire the audience to visit their booths
- *Overcoming the challenges of allergen testing in food using LC-MS/MS*
Dr. Ashley Sage, SCIEX, UK
 - *Bio-Rad's real-time innovation for food safety*
Gerrit Dijkstra, Bio-Rad Laboratories, the Netherlands
 - *A step forward towards full microbiology lab automation*
Pieter Heyvaert, bioMérieux, Belgium
 - *Certified reference material in microbiology*
Jvo Siegrist, Sigma-Aldrich Chemie, a subsidiary of Merck, Switzerland
 - *FastPrep-24 5G System: an ultra-high performance sample preparation method for the reliable detection of pathogens in food and feed samples*
Dr. Christian Kopp, MP Biomedicals, Germany
 - *Rapid detection of Legionella pneumophila*
Dr. Hans-Anton Keserue, rqmicro AG, Switzerland
 - *Flexible multi-analytical screening of mycotoxins in animal feed samples with Evidence biochip arrays*
Dr. Liberty Sibanda, Randox Food Diagnostics, UK
- 17:00 **Workshops – Round I** (for details, see pages 10-11)
- 18:00 – 19:00
Poster viewing & drinks

TUESDAY 8 NOVEMBER 2016

Parallel session 1: Food quality, authenticity and fraud – rapid and cost-effective approaches

Food adulteration and contamination events occur with alarming regularity. The food industry is seeking rapid and user-friendly methods to detect food fraud and contamination. In this session, a variety of rapid technologies for application in various matrices will be presented.

Chairs: Dr. Michele Suman, Barilla, Italy
Dr. Bert Popping, Mérieux NutriSciences, France

08:30 *Isothermal recombinase polymerase amplification for rapid detection of undeclared food ingredients*

Dr. Miguel A. Pardo, Food Research Unit, AZTI-Tecnalia, Spain

08:50 *Authentication of spices and herbs using spectroscopic fingerprinting techniques*

Dr. Bettina Horn, Department Safety in the Food Chain, Federal Institute for Risk Assessment, Germany

09:10 *ATR-FTIR spectroscopy applied to the characterisation of PDO wine vinegars*

Dr. Diego Luis García González, Instituto de la Grasa, CSIC, Spain

09:30 *Developing rapid analysis methods in the spirits drink sector*

Peter Cockburn, The Scotch Whisky Research Institute, UK

09:50 *Differences in thermal characteristics of edible oils using fast differential scanning calorimetry*

Isis van Wetten, M.Sc., Xensor Integration, the Netherlands

10:10 *Battling food fraud by NMR quantitative ingredient profiling*

Prof.dr. Stephan Schwarzingler, Research Center for Bio-Macromolecules and Department of Biopolymers, University of Bayreuth, Germany

10:30 **Networking break & exhibition**

11:00 *Authenticity is not a cheesy topic*

Dr. Bert Popping, Mérieux NutriSciences Corporation, France

11:20 *Rapid evaporative ionisation mass spectrometry – an emerging disruptive technology for the food testing industry?*

Dr. Sara Stead, Waters Corporation, UK

11:40 *MALDI-ToF MS: a tool against meat fraud*

Annegret Männig, Chemisches und Veterinäruntersuchungsamt Stuttgart, Germany

12:00 *A microsatellite fingerprint method for the identification of tobacco varieties*

Dr. Rafael Fernandez-Carazo, JRC Directorate F – Health, Consumers and Reference Materials, Belgium

12:20 *DNA metabarcoding for endangered species identification*

Dr. Martijn Staats, RIKILT Wageningen University & Research, the Netherlands

12:45 **Lunch break**

Exhibition & poster viewing

Workshops – Round II (for details, see pages 10-11)

TUESDAY 8 NOVEMBER 2016

Parallel session 2: Pathogenic and spoilage bacteria – rapid detection and identification

This session provides an insight into selected areas of advanced detection of pathogenic and spoilage bacteria in food and feed.

Chair: Prof.dr. Mieke Van Uyttendaele, Department of Food Safety and Food Quality, Ghent University, Belgium

08:30 *DNA extraction from food matrices omitting pre-enrichment*

Dr. Bjørn Spilsgberg, Department of Virology, Norwegian Veterinary Institute, Norway

08:50 *Applicability and future challenges of fluorescence in situ hybridisation to detect bacterial pathogens in food*

Dr. Alexander Rohde, Department of Biological Safety, Federal Institute for Risk Assessment, Germany

09:10 *Real-time affinity sensors for the detection of Campylobacter jejuni in food samples*

Prof.dr. Ibtisam Tothill, Biotechnology Centre, Cranfield University, UK

09:30 *MALDI-ToF MS identification of spoilage and foodborne bacteria*

Dr. Sabina Purkrtová, Department of Biochemistry and Microbiology, University of Chemistry and Technology, Czech Republic

09:50 *Improved detection of EHEC/STEC strains in water and in food-related samples*

Prof. dr. Ulrich Dobrindt, Institute of Hygiene, University of Münster, Germany

10:10 *Intelligent food packaging – emerging technologies*

Dr. Mike Vanderroost, Department of Food Safety and Food Quality, Ghent University, Belgium

10:30 **Networking break**

Parallel session 3: Water quality – concentration versus deviation management

Online water quality monitoring will be more and more based on deviation instead of concentration measurements. A couple of technological and legislative developments supporting this alteration will be presented and discussed. These and comparable developments will be the building blocks of future water quality monitoring strategies.

Chair: Bram van der Gaag, consultant, the Netherlands

11:00 Chair's introduction

11:05 *EIP-Water Action Group 'Real Time Water Quality Monitoring': revision of water-related European Directives*

Bram van der Gaag, consultant, the Netherlands

11:25 *The online water quality sensors and monitors compendium: from database to community platform*

Dr. Leo Carswell, WRc, UK

11:45 *Real-time surface water quality monitoring: hyperspectral monitoring with the EcoWatch*

Dr. Bo Højris, Grundfos, Denmark

12:05 *Spot on water quality: using hyperspectral field instruments for real-time surface water monitoring*

Hans Wouters, M.Sc., BlueLeg Monitor, the Netherlands

12:25 *Validation of monitoring technologies through the European Environmental Technology Verification programme*

Dr. Corina Carpentier, Bente Water Solutions, the Netherlands

12:45 **Lunch break**

Exhibition & poster viewing

Workshops – Round II (for details, see pages 10-11)

TUESDAY 8 NOVEMBER 2016

Parallel session 4: Rapid methods for the detection of microorganisms in drinking water and water used for food preparation

The Aquavalens consortium is developing sustainable technologies to enable water system managers whether in large or small water systems or within food growers or manufacturers to better control the safety of their water supplies.

**How can 9 million euros worth of potable water research help you?
Visit <http://aquavalens.org> and complete the survey for either
the sector Large Water or Food Production.**



Chair: Dr. Helen Bridle, Heriot-Watt University, UK

14:00 *New microbiology testing methods for the water industry – a brief introduction to the EU project Aquavalens*

Prof.dr. Paul Hunter, Norwich Medical School, University of East Anglia, UK

14:05 *Sample processing to maximise recovery rates*

Anna Charlotte Schultz, Division of Food Microbiology, National Food Institute (DTU Food), Denmark

14:25 *Molecular quantification of waterborne pathogens: from real-time PCR to NGS-based methodologies*

Prof.dr. Manfred Höfle, Department of Vaccinology and Applied Microbiology, Helmholtz Centre for Infection Research, Germany

14:45 *Development of source tracking approaches*

Prof.dr. Dr. Anicet R. Blanch, Department of Microbiology, University of Barcelona, Spain

15:05 *From research to qPCR kit development and validation*

Dr. Antonio Martínez-Murcia, Genetic PCR Solutions and University Miguel Hernández, Spain

15:25 *Online monitoring of enzyme activity of microorganisms as quality tool for food and water analysis*

Joep Appels, microLAN, the Netherlands

15:45 *Automated sampling and/or detection systems for safe drinking water*

Prof.dr. Marc Desmulliez, School of Engineering and Physical Sciences, Heriot-Watt University, UK

16:05 **Networking break**

16:30 Panel discussion – *How to take forward the technology*

17:00 – 18:00

Aquavalens vendor demonstrations

18:30 -21:45

Canal tour & conference dinner (reservations only)

TUESDAY 8 NOVEMBER 2016

Parallel session 5: Rapid methods for animal and human diagnostics

Rapid methods for animal and human diagnostics are being developed parallel to those for food & feed safety and water quality. We must observe what others do and learn from each other, taking and adapting from each other what suits best.

Chairs: Dr. Gerrit Keizer, Thermo Fisher Scientific, the Netherlands

- 14:00 *Species specific recognition of bacterial pathogens using targeted antibody design*
Dr. Chris Johnson, Institute of Cellular Medicine, Medical School, Newcastle University, UK
- 14:20 *Lab-on-chip devices for diagnosis of animal health-related bacterial infections*
Dr. Verónica Romão, Magnomics, Portugal
- 14:40 *The application of resonant coil technology for food safety*
Prof.dr. Richard Luxton, Institute of Bio-Sensing Technology, University of the West of England, UK
- 15:00 *Multi-serology via microarray*
Dr. Sylvia Pinggen, Institute of Food Quality and Food Safety, University of Veterinary Medicine Hannover, Germany
- 15:20 *Acoustic force spectroscopy: molecular sensing with sound*
Prof.dr. Gijs Wuite, Department of Physics and Astronomy, VU University Amsterdam, the Netherlands
- 15:40 *Amplification-free electrochemical biosensor platform for rapid antimicrobial resistance testing at point-of-care*
Dr. Holger Schulze, Division of Infection and Pathway Medicine, Edinburgh Medical School, The University of Edinburgh, UK
- 16:00 **Networking break & exhibition**
- 16:30 *A rapid procedure of PCR and a microarray lateral flow test for detection of antibiotic resistance genes*
Dr. Aart van Amerongen, BioSensing & Diagnostics, Wageningen University & Research, the Netherlands
- 16:50 *Crossing 'borders': diagnostics in food allergies and food allergens testing*
Dr. Ronald Niemeijer, R-Biopharm AG, Germany

Parallel session 6: Special presentations – various topics

Chair: Dr. Kitty Maassen, National Institute for Public Health and the Environment, the Netherlands

Recently launched project:

- 17:10 *METROFOOD-RI: a new research infrastructure to improve measurement reliability and promote scientific cooperation and data sharing*
Dr. Claudia Zoani, Casaccia Research Centre, ENEA, Italy

Speed presentations:

- 17:30 Short presentations (6 minutes) by selected poster presenters to provide an overview of their research and to inspire the audience to visit their posters.

18:30 -21:45

Canal tour & conference dinner (reservations only)

WEDNESDAY 9 NOVEMBER 2016

Plenary meeting: Rapid methods and platforms for food & feed analysis

Advanced technologies provide many opportunities for improved detection of contaminants in food and feed. What's going on?

Chairs: Dr. Bert Popping, Mérieux NutriSciences, France

Prof.dr. Arben Merkoçi, Catalan Institute of Nanoscience and Nanotechnology, Spain

- 08:30 *Multiplex droplet digital PCR for quantification of EU-authorized GMOs*
Alexandra Bogožalec Košir, M.Sc., Department of Biotechnology and Systems Biology,
National Institute of Biology, Slovenia
- 08:50 *Innovative approaches to identify unauthorized GMOs in food products*
Alfred Arulandhu, M.Sc., RIKILT Wageningen University & Research, the Netherlands
- 09:10 *Performance comparison of three digital PCR platforms in DNA quantification*
Dr. Litao Yang, School of Life Science and Biotechnology, Shanghai Jiaotong University,
China
- 09:30 *The SYMPHONY project: integrated systems for aflatoxin detection in milk*
Henk Leeuwis, M.Sc., LioniX BV, the Netherlands
- 09:50 *Comparison of CG and the innovative QDs as label for multiplex screening for the detection of four mycotoxins*
Astrid Foubert, Department of Bioanalysis, Ghent University, Belgium
- 10:10 *Exploiting quantum dots for sensitive and straightforward detection in immunochromatographic strip tests*
Prof.dr. Laura Anfossi, Department of Chemistry, University of Turin, Italy
- 10:30 **Networking break & exhibition**
- 11:00 *Nanobodies-based immunoassays and biosensors for small molecules*
Dr. Zhen-Lin Xu, College of Food Science, South China Agricultural University, China
- 11:20 *Sensor development for milk allergens detection*
Dr. Roberta D'Aurelio, Biomedical Diagnostics Group, Cranfield University, UK
- 11:40 *Reflective phantom interface: real-time, multiparameter biosensing in complex media*
Prof. Marco Buscaglia, ProXentia and Department of Medical Biotechnology and Translational
Medicine, University of Milan, Italy
- 12:00 *The ongoing development of single cell MALDI-ToF, new horizons*
Gerold de Valk, M.Sc., BiosparQ, the Netherlands
- 12:20 *Towards nucleic acid extraction and purification on a centrifugal lab-on-a-disc platform*
Dr. David Kinahan, School of Physical Sciences, Dublin City University, Ireland
- 12:40 *Future developments of single molecule sequencing*
Dr. Grégory Schneider, Supramolecular & Biomaterials Chemistry, Leiden Institute of
Chemistry, the Netherlands
- 13:00 Chairs' summary & closing remarks
- 13:15 **Closing of RME2016**

WORKSHOP PROGRAMME

QIAGEN:

Monday 7 November, 17:00 – 18:00

MEAT ID(EA)S – INSIGHTS INTO ROUTINE MEAT ID TESTING

Sponsored by QIAGEN

Presented by Dr. Marcia Armstrong, QIAGEN Inc., USA and Dr. Wolfgang Hauser, ifp Institut für Produktqualität, Germany

Three years after the horsemeat scandal the reliable identification and quantification of different meat types in food samples is still a diagnostic challenge for food safety testing laboratories. The broad variety of meat products and their grade of processing causes issues around standardisation and accuracy of testing methods. PCR has been selected as a method of choice for this application. In this workshop, we would like to discuss from a user perspective the use and usefulness of real time PCR based meat ID testing in a routine testing environment.

Tuesday 8 November 2016, 12:45 – 13:45

SEROLOGICAL AND MOLECULAR METHODS AND THEIR APPLICATION IN VETERINARY DIAGNOSTICS AND HUMAN MEDICINE

Sponsored by QIAGEN

Presented by Sebastien Lopez, QIAGEN, France

QIAGEN offers a wide range of diagnostic solutions for molecular biological and serological testing in human and veterinary medicine. By supporting the reliable identification of poultry and livestock diseases, QIAGEN's products for veterinary diagnostics and disease investigation help protect human and animal health as well as the environment and the food chain. The workshop will address selected practical examples in order to provide a brief insight into current methods and procedures as well as new possibilities in serological and molecular diagnostics. Attention will also be paid to the acceptance of new, innovative techniques.

SCIENION and Biosensing & Diagnostics, Wageningen University & Research:

Monday 7 November, 17:00 – 18:00 & Tuesday 8 November, 12:45 – 13:45

MULTI-ANALYTE TEST DEVELOPMENT AND COMMERCIAL PRODUCTION

Sponsored by SCIENION and Biosensing & Diagnostics (BSD), Wageningen University & Research

Presented by Hans Dijk, SCIENION, Germany, and Dr. Aart van Amerongen and Marjo Koets, BSD, Wageningen University & Research, the Netherlands

SCIENION is a leading supplier of quality instrumentation and services for low volume liquid handling. The group BioSensing & Diagnostics (BSD) from Wageningen University & Research develops rapid, simple and/or microarray (immuno)assay formats. The workshop will give an overview of the current innovation in diagnostic testing, encompassing new, multi-analyte technologies and approaches to diagnostics with a focus on the actual test production. The workshop will cover basic test concepts in molecular diagnostics, assay design, validation, standards and QC, and an update on various assay formats and equipment (how to choose the right arrayer in your situation). SCIENION and BSD will share their vision on the future of rapid test diagnostics such as in microarraying, multi-analyte testing, automation and quantitative data analysis. There will be an opportunity to explore innovative solutions to current test manufacturing, ranging from lateral flow based test-strips to multi-analyte and miniaturised ELISA formats. The workshop objective is to discuss the practical implementation of multi-analyte tests and the evaluation of field test and laboratory use of these technologies. Time will be set aside for open

discussion, debate and the formation of collaborations. SCIENION and BSD aim to facilitate an environment in which all involved in test manufacturing and diagnostics can learn from each other and share information and experiences.

R-Biopharm AG:

Monday 7 November, 17:00 – 18:00 & Tuesday 8 November, 12:45 – 13:45

MYCOTOXIN ANALYSIS IN YOUR HAND

Sponsored by R-Biopharm AG

Presented by Dr. Ronald Niemeijer, R-Biopharm AG, Germany

Mycotoxin contaminations of food and feed have a huge economic impact. Mycotoxins impose a risk to human and animal health. Therefore, maximum limits have been established for many commodities. Legislations and guidelines are implemented and enforced in most parts of the world. Since mycotoxins are natural occurring toxins, they cannot be avoided. As a result, significant amounts of commodities are discarded or used for feed or non-food applications at a lower sales price. Financial losses however go far beyond the value of the contaminated commodities and may actually affect the entire food production chain. Animal feed contaminated with mycotoxins may cause production losses in livestock production and mycotoxins may cause significant health costs. Mycotoxins contaminations of crops are unavoidable but mycotoxins can be managed. Good agricultural and good manufacturing practices will help. Monitoring mycotoxin contaminations by testing is necessary to verify the products will meet international regulations and guidelines. Yet, instead of testing large numbers of end-products, a more pro-active approach would have many benefits. During the entire process from field to food or feed critical steps can be identified to monitor mycotoxins. For this approach, a mobile, easy to use tool to make quick, on-site decisions is essential. In this workshop, R-Biopharm will present the next generation in rapid, on-site mycotoxin testing using lateral flow test and a smartphone application.