

Emerging Sensor Technologies for Food Safety

Symposium

*June 12, 2014
Sheraton City Center Hotel
Baltimore, MD USA*

Traditional means for microbial detection can no longer match the pace of today's food processing and global distribution networks. At the same time, rapid detection of pathogens in foods has never been more important. In the U.S. alone, there are an estimated 47.8 million illnesses, over 127,000 hospitalizations and 3,000-plus deaths attributed to foodborne illness each year. Emerging sensor and detection platforms can provide the timely and actionable information needed to lessen the human and economic burdens levied by foodborne disease.

This symposium features presentations on emerging optical, nanotechnological, spectroscopic and electrochemical technologies for pathogen detection, including label-free and high-throughput methods. Novel ligands for pathogen capture will also be examined. Benefits and challenges of these new methods and their comparison with existing techniques will be discussed. Label-free approaches and the advantages of novel bioaffinity ligands will be highlighted.

presented by:



Symposium Co-Chairs:



Byron Brehm-Stecher, PhD,
Assistant Professor, Rapid Microbial Detection & Control Laboratory, Department of Food Science & Human Nutrition,
Iowa State University



Arun Bhunia, PhD,
Professor, Department of Food Sciences,
Purdue University



Food Safety

Symposium

Symposium Overview

June 12, 2014

Traditional means for microbial detection can no longer match the pace of today's food processing and global distribution networks. At the same time, rapid detection of pathogens in foods has never been more important. In the U.S. alone, there are an estimated 47.8 million illnesses, over 127,000 hospitalizations and 3,000-plus deaths attributed to foodborne illness each year. Emerging sensor and detection platforms can provide the timely and actionable information needed to lessen the human and economic burdens levied by foodborne disease. This symposium features presentations on emerging optical, nanotechnological, spectroscopic and electrochemical technologies for pathogen detection, including label-free and high-throughput methods. Novel ligands for pathogen capture will also be examined. Benefits and challenges of these new methods and their comparison with existing techniques will be discussed. Label-free approaches and the advantages of novel bioaffinity ligands will be highlighted.

Talks by leading academics and researchers in the military and private sectors will include:

- Light scattering and spectral pattern recognition for bacterial detection
- Raman and FTIR spectroscopy for high throughput detection of pathogens and toxins
- Flow cytometry for rapid detection of pathogens in complex matrices
- Antimicrobial peptides as bioaffinity ligands for pathogen detection
- High affinity capture and detection of foodborne pathogens using phage tail proteins arrayed onto solid phase supports
- Electrochemical nano-biosensors for food safety
- Parallel capillary electrophoresis for high-throughput detection and characterization of pathogens

Conveniently Timed and Co-Located With

Sensors Global Summit
2014

June 10-12, 2014

Biodetection Technologies 2014

June 10-11, 2014

Attend All 3 days

Food Safety

Symposium

Symposium Overview

June 12, 2014

2:00 *Registration with Exhibit & Poster Viewing*

2:20 **Chairperson's Welcome and Opening Remarks**

*Byron Brehm-Stecher, Ph.D.,
Associate Professor,
Iowa State University*

2:30 **Light Scattering and Spectral Pattern Recognition for Bacterial Detection**

*Arun Bhunia, Ph.D.,
Professor,
Purdue University*

3:00 **Flow Cytometry for Rapid Detection of Pathogens in Complex Matrices**

*Byron Brehm-Stecher, Ph.D.,
Associate Professor,
Iowa State University*

3:30 **Parallel Capillary Electrophoresis for High-Throughput Detection and Characterization of Pathogens**

*Pierre Vareneau, Ph.D.,
Chief Technology Officer,
Advanced Analytical Technologies, Inc.*

4:00 *Refreshments with Exhibit & Poster Viewing*

4:30 **Antimicrobial Peptides as Bioaffinity Ligands for Pathogen Detection**

*Joshua Uzarski, Ph.D.,
Research Scientist,
US Army Natick Soldier Research*

5:00 **Bioluminescent Bacteriophage for High-Throughput Detection of Pathogens**

*Bruce Applegate, Ph.D.,
Professor,
Purdue University*

5:30 *Close of Symposium*

Conveniently Timed and Co-Located With

Sensors Global Summit
2014



June 10-12, 2014

Biodetection Technologies 2014

June 10-11, 2014

Attend All 3 days

knowledgefoundation.com