

PROGRAM

FRIDAY, JUNE 15

12:00PM-5:00PM Registration - Mezzanine Level of MCC
2:00PM-4:30PM Technical Tours #1 – Cancelled
2:00PM-4:30PM Technical Tour #2 – Cancelled
4:30PM-6:30PM Welcome Reception

SATURDAY, JUNE 16

8:00AM-9:00AM Opening Ceremony of the International
Conference on BIOLOGICAL SENSORICS
Keynote Address
9:00AM-12:00PM Sensor Technology
12:30PM-1:00PM LUNCH (on your own)
1:00PM-6:00PM Poster Displayed
1:00PM-2:30PM Poster Session (presenters in attendance)
2:30PM-5:00PM Sensor Applications
5:00PM-6:00PM Poster Session (presenters in attendance)
6:30PM-8:30PM BANQUET

SUNDAY, JUNE 17

8:00AM-10:00AM Sensor Policies; Emerging Issues;
Future Directions
9:45AM-12:00PM Roundtable Discussion

Friday, June 15

12:00PM-5:00PM REGISTRATION

4:30PM-6:30PM WELCOME RECEPTION
Location:Seasons Rotunda Skyway

Saturday, June 16

7:00AM-6:00PM REGISTRATION
Location:Exhibit Hall B in MCC

8:00AM OPENING CEREMONY
Location:M100-A,B,I,J
Charles Sukup, ASABE President
Dr. Suranjan Panigrahi, Dr. K.C. Ting Conference Co-Chairs

8:30AM CONFERENCE KEYNOTE ADDRESS
Dr. Daniel Schmoltdt, National Program Leader Instrumentation & Sensors;USDA-CSREES
"The Interplay of Biology and Engineering for Smarter Applications"

9:00AM-12:30PM SENSOR TECHNOLOGY
Moderator: Dr. K.C. Ting, University of Illinois
Location:M100-A,B,I,J

9:00AM Introduction

9:10AM--9:40AM SESSION KEYNOTE SPEAKER
Dr. Bhanu P. Jena, Director Nanobioscience Institute, & Professor, Wayne State University
"Force Spectroscopy in the Discovery of New Cellular Structure"

9:40AM-10:05AM INVITED SPEAKER
Dr. Chang Liu, Professor Electrical Engineering, University of Illinois, Urbana
"Micro and Nanotechnology for Biodetection"

10:05AM-10:25AM Smart Embedded Control with Armpit Scheme (Lisp)
Hubert J Montas, Bioengineering Department, College Park, MD United States (Hubert J. Montas)

10:25AM-10:40AM Nanofiber-based DNA Sensor for Detecting Microbial Contaminants
Yu Mao, Oklahoma State University, Stillwater, OK United States (Yu Mao, Yumin Ye)

Saturday, June 16

- 10:40AM-10:55AM** **First-principles Study of DNA-wrapped Carbon Nanotubes**
Ravindra Pandey, Michigan Technological Univ, Houghton, MI United States (S. Gowtham, R.Scheicher, R. Pandey)
- 10:55AM-11:10AM** **Au/Si Nanorod-based Biosensor for Salmonella Detection**
Bosoon Park, USDA, ARS, Athens, GA United States (Junxue Fu, Bosoon Park, Yiping Zhao, Greg Siragusa, Yong-Jin Cho)
- 11:10AM-11:25AM** **Critical Evaluation of Photobleaching based Sensing Methods in Living Organisms**
Kouroush Sadegh Zadeh, University of Maryland, College Park, Maryland United States (Kouroush Sadegh Zadeh, Adel Shirmohammadi, Hubert J. Montas and Yang Tao)
- 11:25AM-11:40AM** **Dielectric sensing of fruit quality**
Stuart O Nelson, USDA, ARS, Athens, GA United States (Stuart O. Nelson, Samir Trabelsi, and Wenchuan Guo)
- 11:40AM-11:55AM** **The Development of a Biomimetic Root Oxygen Bioavailability Sensor**
Porterfield D. Marshall, Purdue Univ, West Lafayette, IN United States (D.M. Porterfield)
- 11:55AM-12:10PM** **A frequency-response permittivity sensor for simultaneous measurement of multiple properties of solid, liquid, and gaseous dielectric materials**
Naiqian Zhang, Kansas State University, Manhattan, KS United States (Kyeonghwan Lee)
- 12:30PM-1:00PM** **LUNCH (on your own)**
- 1:00PM-6:00PM** **POSTER DISPLAY**
- 1:00PM-2:30PM** **POSTER SESSION (Presenters will be present)**
Moderator: Dr. Sundaram Gunasekaran, Univ of Wisconsin, Madison
Location:M101-A,B,C
- 2:30PM-3:20PM** **SENSOR APPLICATIONS - I (Invited Session)**
Moderator: Hubert Montas, Univ. of Maryland
Location:M100-A,B,I,J
- 2:30PM-3:00PM** **SESSION KEYNOTE SPEAKER**
Dr. Hongda Chen, USDA National Program Leader; BioProcessing Engineering USDA/CSREES "Nanotechnology for Sensors to Enhance Agricultural Biosecurity, Food Safety & Quality"

Saturday, June 16

- 3:00PM-3:20PM** **INVITED SPEAKER**
Dr. Irfan Ahmad, Associate Director; Center for Nanoscience & Technology
"Nanomedicine for Developing Cancer Therapies"
- 3:20PM-5:00PM** **SENSOR APPLICATION - I (Contributed Session)**
Moderator: Samir Trabelsi, USDA-ARS, Georgia
Location:M100-A,B,I,J
- 3:25PM** **Introduction**
- 3:30PM-3:45PM** **Wireless sensor networks in Agriculture.**
Daan Goense, Wageningen University and Researchcentre, Wageningen, Gelderland Netherlands (Daan Goense)
- 3:45PM-4:00PM** **Electrochemical sensing of ethanol and acetaldehyde vapours in breath**
Mary-Grace C Danao, Cranfield University, Silsoe, Bedfordshire United Kingdom (Mary-Grace C Danao, David C Cullen, Toby T Mottram, Claire Turner)
- 4:00PM-4:15PM** **Microwave moisture sensor for grain and seed**
Samir Trabelsi, QARU-ARS-USDA, Athens, GA United States (Samir Trabelsi and Stuart O. Nelson)
- 4:15PM-4:30PM** **Application of optic fiber sensor for quality evaluation of peaches based on NIR spectroscopy**
Yibin Ying, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, Zhejiang China (Xiaping Fu, Yibin Ying*, Ying Zhou, Lijuan Xie, Huirong Xu, Guang Ma)
- 4:30PM-4:45PM** **Wavelet transform-based model for classifying contaminated meat using solid-state gas sensors**
S Panigrahi, North Dakota State University, Fargo, ND USA
- 4:45PM-5:00PM** **REVIEW ON SENSORICS FOR ON-LINE MONITORING OF MILK COMPOSITION**
Angelika Haeussermann, Christian-Albrechts-University Kiel, Kiel, SH Germany (Angelika Haeussermann, Eberhard Hartung)
- 3:25PM-5:00PM** **SENSOR APPLICATION - II (Contributed Session)**
Moderator: Dr. Tae-Te Lin, National Taiwan University
Location:M100-C,D,E
- 3:25PM** **Introduction**
- 3:30PM-3:45PM** **Use of Virtual Reality for Teleoperation of Autonomous Vehicles**
Michael A Steffen, Valparaiso University, Valparaiso, IN United States (Michael Steffen, Noriyuki Murakami, and Jeffrey Will)
- 3:45PM-4:00PM** **Surface acoustic wave sensor wavelength selection using evolutionary algorithms**
Changying Li, University of Illinois at Urbana-Champaign, Urbana, IL United States (Changying Li, Paul Heinemann)

Saturday, June 16

- 4:00PM-4:15PM** **Automated machine vision sensing of plant structural parameters**
Cheryl L McCarthy, University of Southern Queensland, Toowoomba, Queensland Australia (Cheryl L McCarthy, Nigel H Hancock and Steven R Raine)
- 4:15PM-4:30PM** **THE APPLICATION OF WIRELESS GROUND-BASED REMOTE SENSING TECHNOLOGY FOR AUTOMATIC IRRIGATION SCHEDULING OF A CENTER PIVOT SYSTEM**
Susan A OShaughnessy, USDA, Bushland, Texas United States (Susan A.O'Shaughnessy and Steve R. Evett)
- 4:30PM-4:45PM** **Construction of virtual low-noise space for safety and comfortable work under noisy environment**
Naoshi Kondo, Ehime University, Matsuyama, Ehime Japan (Naoshi Kondo, Tomoo, Shiigi, Shigemune Taniwaki, Kazunori Ninomiya, Mitsutaka Kurita, Takao Nishi, Kazuhiko Namba)
- 5:00PM-6:00PM** **POSTER SESSION (Presenters will be present)**
Moderator: Dr. Sundaram Gunasekaran, Univ of Wisconsin, Madison
Location: M101-A,B,C
- Poster #
- #1** **Drag hose manure land application systems and monitoring air emissions by UV-DOAS sensor.**
Md.Zakir Hossain, University of Idaho, Twin Falls, ID United States (Md.Zakir Hossain, Dr. Ron Sheffield, Marti de H.M.)
- #2** **Hypobaric Testing of Environmental Sensors**
April Lovelady, NASA- Kennedy Space Center, Kennedy Space Center, FL United States (John Sager, Ray Wheeler, April Lovelady, Phil Fowler)
- #3** **Machine Vision System for Detecting Rotten Citrus Fruit by Use of UV LED**
Naoshi Kondo, Ehime University, Matsuyama, Ehime Japan (Naoshi Kondo, Kazuya Yamamoto, Shigemune Taniwaki, Makoto Kuramoto, Mitsutaka Kurita, Kazunori Ninomiya)
- #4** **An efficiency of wet air cleaner in the swine fattening housing**
In Hwan Oh, Department of Biosystems Engineering, Konkuk University, Chungju, Chungbuk South Korea (Jong Hyun Lee)
- #5** **Comparison of visible/near infrared transmission and diffuse reflectance spectroscopy for detecting transgenic tomato leaves**
Lijuan Xie, College of Biosystems Engineering and Food science, Zhejiang University, Hangzhou, Zhejiang China (Lijuan Xie, Yibin Ying)

Saturday, June 16

- #6 Prediction of enological parameters in Chinese rice wine using chemometrics and FT-NIRS**
Haiyan Yu, College of Biosystems Engineering and Food science, Zhejiang University, Hangzhou, Zhejiang China (Haiyan Yu, Yibin Ying, Xiaoying Niu, Xingxiang Pan)
- #7 Redox potential as an index for the degree of tea fermentation**
Po-Chung Chen, National Taiwan University, Taipei, Taipei Taiwan (Po-Chung Chen, Richie L. C. Chen, Tzong-Jih Cheng)
- #8 Fluorometric determination of tannin and amino acids in tea infusions with flow-injection analytical system**
Yueh-Tzu Hung, Department of Bio-industrial Mechatronics Engineering, National Taiwan University, Taipei, Taipei Taiwan (Yueh-Tzu Hung, Po-Chung Chen, Richie L.C. Chen, Tzong-Jih Cheng)
- #9 Development of electrochemical immunosensors for rapid detection of pesticide in natural waters**
Xuesong Jiang, College of Biosystems Engineering and Food science, Zhejiang University, Hangzhou, Zhejiang China (Xuesong Jiang, Yibin Ying, Jianping Wang, Zunzhong Ye, Yanbin Li)
- #10 Detection of bacterial contamination in meat using microcantilever sensing technique**
Matthew Kasper, North Dakota State University, Fargo, ND United States (Suranjan Panigrahi)
- #11 Development of Handheld Multispectral Imaging System for Food Safety Inspection**
Michio Kise, USDA-ARS, Athens, GA United States (Michio Kise, Bosoon Park, Kurt C. Lawrence, William R. Windham)
- #12 Determination of Chinese rice wine from different winery by near-infrared spectroscopy combined with chemometrics methods**
Xiaoying Niu, College of Biosystems Engineering and Food science, Zhejiang University, Hangzhou, Zhejiang China (Xiaoying Niu, Yibin Ying)
- #13 Freshness measurement of pork loin using NIRS**
Tu San Park, Seoul National University, Seoul, Seoul South Korea (T.S.Park, S.I.Cho, T.J.Park, H.S.Seo, M.Lee, K.H.Seoul, D.K.Lim)
- #14 fabrication and evaluation of SAW device for detection of Salmonella**
Ki-bok KIM, Korea, Korea
- #15 Classification of closed and open-shell nuts using double tree un-decimated wavelet transforms**
N Firat Ince, University of MN, USA
- #16 An on-farm management for the management of mastitis, ketosis and reproduction in dairy cows.**
J Y Blom, Danish Agril Inst, Denmark

Saturday, June 16

- #17** **Neural-network-based classification of meat: evaluation of techniques to overcome small dataset problems**
Lav S Khot, S. Panigrahi, , Fargo, North Dakota USA
- #18** **evaluation of a commercial electronic nose system for indicator components associated with meat safety**
S. Panigrahi, P. Mohapatra, J. Amamcharla, North Dakota State Univ, Fargo, North Dakota USA
- 6:00PM-8:30PM** **BANQUET**
KEYNOTE SPEAKER
Dr. Norm Scott, Cornell University
"World of 2100:Nanobiotechnology, Renewable Energy and Sustainability"
Location: M100-F,G,H

Sunday, June 17

- 7:00AM-10:00AM** **REGISTRATION**
Location:Exhibit Hall B
- 8:00AM-10:15PM** **SENSOR POLICIES, EMERGING ISSUES, FUTURE DIRECTIONS**
Moderator: Dr. Steve Searcy, Texas A&M University
Location:M100-A,B,I,J
- 8:00AM-8:30AM** **session keynote speakers**
Dr. Subhas Malghan, Director, Center for Devices and Radiological Health/FDA
"Science and Regulatory Issues and Nanotechnology"
- 8:30AM-8:50AM** **INVITED SPEAKER**
Dr. Blake Simons, Sandia National Lab
"The Application of Insulator-based Polymer Microfluidic Devices as Particle Separator and the Impact of Dynamic Surface Coating on Performance"
- 8:50AM-9:10AM** **INVITED SPEAKER**
Dr. Kenneth Watkin, Beckman Institute of Advanced Science & Technology, University of Illinois, Urbana
"Advances in Screening the Cytotoxic Properties of Plant Extracts"
- 9:10AM-9:30AM** **INVITED SPEAKER**
Dr. Ramesh Kanwar, Iowa State University
"Sensor Needs/Issues for Environmental Water System"

Sunday, June 17

- 9:30AM-9:45AM** **INVITED SPEAKER**
Robert Bratland
"Spreezzatura, The Art of Making the Difficult Seem Easy" Adjunct
Mentoring Resources
- 9:45AM-10:00AM** Suranjan Panigrahi, North Dakota State University
"Sensors for Biological Systems: Issues & Challenges"
- 10:00AM-10:15AM** William D. Batchelor, Mississippi State University
"Integrating Sensors-Related Courses in Curriculum"
- 10:15AM-11:30AM** **ROUNDTABLE DISCUSSION**
(INVITED PANELISTS)
"Sensorics: - Present/Future"
Location: M100-A, B, I, J
- 11:30AM-12:00PM** **FOLLOW-UP**
- 12:00PM** **ADJOURN**

CONFERENCE COMMITTEE

Symposium Co-Chair(s): Suranjan Panigrahi, USA
Symposium Co-Chair(s): K.C. Ting, USA

- Vince Bralts, USA • Steve Searcy, USA
- Irfan Ahmad, USA • Sundaram Gunasekaran, USA
- Bosoon Park, USA • William Batchelor, USA
 - Josse De Baedemaeker, Belgium
- Charles Doty, USA • Naoshi Kondo, Japan
- Mark Lanoue, USA • Seong Cho, Korea
 - Ta-Te Lin, Taiwan • Yibin Ying, China
- Bani Mohanty, USA • Mark Riley, USA
 - K. Karna, USA

Technical and Advisory Committee:

Hubert Montas, USA
Majit Misra, USA
R. Pandey, USA