

Future of Instrumentation International Conference

October 7-9, 2013 – The Hyatt Regency Grand Cypress, Orlando, Florida

**Instrumentation, Sensors, and Measurements
for Energy Generation, Delivery, Utilization,
and Security**



Overview

The Future of Instrumentation International Conference (FIIC) 2013 will provide a forum for research scientists, engineers, and practitioners throughout the world to present their latest research findings, ideas, and applications in the area of advanced instrumentation and associated technology. FIIC 2013 will include keynote addresses and invited presentations by eminent scientists.

Past Workshops on the Future of Instrumentation have focused on trends associated with communications, circuit intricacies, and applications of advanced instrumentation. Tracking both the roadmaps of instrumentation development and the analyses of the instrumentation market(s) generated during those meetings has shown a highly accurate prediction of where “future instruments” are heading – both as R&D efforts and commercialization of advanced technologies. FIIC 2013 will continue to investigate the trend analysis of where future instruments are headed in terms of both technology and market, as well as focusing the program on areas such as:

- The role of intrinsically safe, very inexpensive instrumentation
- Crowd sourcing and social networking processing of ubiquitous sensors
- The multitude of issues associated with hyper-dense deployments of wireless instrumentation
- Power – or the lack thereof – for advanced instrumentation
- Cyber-Physical System Security – it’s not just an “IT issue”
- Instrumentation in Extreme Environments - e.g. nuclear and fossil power generation, process industries, petrochemical, mining, and gas turbine engine environments.

Conference Goals

FIIC 2013 will focus on advanced instrumentation, measurement concepts and scientific underpinnings that enable new methods and applications of instrumentation. With instrumentation embedded into an expansive array of applications across virtually every aspect of the energy value chain, FIIC hopes to explore new developments relevant to small modular reactors, coal gasification plants, large and small transmission and distribution systems confronted with significant influx of renewable energy systems, and end use applications including demand responsive industrial processes and buildings. The goal is to assemble a group of technologists, analysts and business leaders to investigate the impact of current trends in instrumentation technology across the full expanse of the energy value chain.

Chairs

Ken Tobin
*Oak Ridge National
Laboratory*

Kim Fowler
*IEEE Instrumentation and
Measurements Society*

Program Committee

Jamie Coble
*Pacific Northwest National
Laboratory*

Max Cortner
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Modeling*

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Technology Laboratory*

Pradeep Ramuhalli
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Laboratory*

James Smith
Idaho National Laboratory

Bill Stange
U.S. Air Force

Peter Tortorelli
*Oak Ridge National
Laboratory*

Mary Anne Yates
*Argonne National
Laboratory*

Why Participate?

This is your opportunity to intersect with leaders who are at the international forefront of instrumentation for industry, government and academia. You will establish collaborations with scientists and technologists in important areas of energy-related instrument research and learn about government and private sector funding opportunities. FIIC 2013 will provide you with opportunities to broaden your horizon in relation to cross-cutting technologies that are developed in one field while providing applicability to others. Such technologies include new sensing technologies and methods, instrumentation systems capable of surviving harsh industrial environments, advanced materials that enable new miniature low-cost sensors, novel signal processing methods, trustworthy wireless sensor networks, and cyber physical security as it relates to instrumentation and controls systems.

Workshop Topics

Topics of interest include but are not limited to:

- Phenomena, Modeling, and Evaluation of Chemical and Gas Sensors
- Biosensors Optical Sensors
- Mechanical and Physical Sensors
- Sensor/Actuator Systems
- Sensor Networks
- Other Sensor Topics
 - Materials, processes, circuits, signals and interfaces, etc.
 - Sensing in cross-contaminant locations
 - Small signal extraction (in the presence of large signals)
- Applications:
 - Environmental Sensing
 - Long range sensing
 - Low-cost sensing
 - Harsh environment sensing

Prospective authors are invited to submit extended abstracts (3-4 pages) via the FIIC conference website <http://FIIC.ieee-ims.org>. The abstract should report on original research results of a theoretical or applied nature and explain the significance of the contribution to the research field. The manuscripts must be prepared according to guidelines provided on the FIIC website.

All papers presented at the conference will be published in the Conference Proceedings and via *IEEE Xplore*. At least one author of any accepted paper must register at non-student rates, attend the conference, and present the paper. Important deadlines are:

- June 22, 2013 Deadline for submission of extended abstracts
- July 26, 2013 Notification of authors of paper acceptance
- September 1, 2013 Deadline final format papers

