THEME:

Sensorics refers to the science and technology that deals with the sensor or sensor system and their applications. Biology describes forms and processes of life. Biological systems are frequently developed and sustained through integrating life and engineering for enhancement of complex living systems of plants and animals. For example; Agricultural mechanization (mechanization for crop and food production) has contributed significantly for global food security. This contribution has been ranked as one of the greatest engineering achievements of the 20th century by the National Academy of Engineering. The leading effort of Agricultural Engineers with other scientist/engineers played a vital role in that transformation. Building upon the success of agricultural mechanization, engineers as well as scientists have been advancing mechanization into automation. Our ability to learn from, adapt and control biological systems and processes is critical for future advances in various biological systems including agriculture, biology, animal, food, environment and energy. Biological sensors/ sensing systems are poised for automating systems in unique and novel manner. The purpose of automation is to equip engineered systems with human-like intelligence of perception, reasoning/learning, communication, and task planning/execution. Machine perception is viewed as the foundation of automation. Sensorics makes machine perception possible. Recent advancements in science and technologies related to sensors and sensing systems show tremendous promises to create better and effective solutions for agricultural and biological problems. This specialty conference will create a unique forum for engineers, scientists, and managers (from universities, research organizations, and industries) to share their knowledge, ideas and findings, as well as to learn more about different sensor related technologies and applications for solving various problems in agricultural, food, environment and other biological applications.

TOPIC AREAS:

This conference will cover both the fundamental and applied research activities related to sensor development:

Sensor Technologies
- Emerging sensor technologies (MEMS, Nano technology)
- Machine Perception for sensor/sensing system
- Sensing technologies (computer vision, tactile sensing, spectroscopy, olfactory sensing etc.)
- Sensors development
- Fabrication of new sensor or sensing systems
- Intelligent or smart sensors
- MEMS or nano-sensors
- New materials for sensors

Sensor Applications
- Evaluation of sensors
- Sensors for different applications including but not limited to food safety, food processing, water quality, air pollution, natural resources, animal health, diagnostics etc.
- Issues for Real-world or field scale sensors
- Pattern recognition/ Machine learning techniques for sensor systems
- Sensor standards
- Sensors for autonomous devices

Sensor Education and Policies
- Regulatory issues
- Societal issues for sensors, MEMS, Nano-sensors/systems
- Economics
- Policies and regulations for sensors/sensing devices, integrated devices
- Education