

## Call For Papers



2nd International Electronic  
Conference on Sensors  
and Applications  
15–30 November 2015

### Time Schedule & Deadlines

Abstract Submission: 20 Aug. 2015  
Acceptance Notification: 10 Sep. 2015  
Full Paper Submission: 15 Oct. 2015

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### Sections

A. Biosensors

B. Chemical Sensors

C. Physical Sensors

D. Sensor Networks

E. Applications

P. Posters

S1. MEMS and NEMS

S2. Smart Systems and Structures

S3. Smart Textiles

S4. Sports & Sensors

S5. Factories of the Future

S6. Fiber Optic Sensors

S7. Sensing Technologies for Water  
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## S2: Smart Systems and Structures

Section Chair:

**Dr. Stefan Bosse**, Department of Mathematics & Computer Science, University of Bremen, Bremen, Germany



Trends emerging in engineering and micro-system applications such as the development of sensorial materials show a growing demand for distributed autonomous computing in sensor networks consisting of miniaturized low-power smart sensors embedded in technical structures. A Sensor Network is composed of nodes capable of sensor processing and communication. Smart Systems are composed of more complex networks (and networks of networks) differing significantly in computational power and available resources. They provide higher level information processing that maps the raw sensor data to condensed information. They can provide, for example, Internet connectivity of perceptive systems (body area networks...). These smart systems unite the traditionally separated sensing, aggregation, and application levels, offering a more unified design approach and more generic and unified architectures. Smart systems glue software and hardware components to an extended operational unit.

Smart can be defined on different operational and processing levels and having different goals in mind. One aspect is the adaptivity and reliability in the presence of sensor, communication, node, and network failures that should not compromise the trust and quality of the computed information, for example, the output of a Structural Health Monitoring System (SHM). A Smart System can be considered on node, network, and network of network level. Another aspect of "smartness" is information processing with inaccurate or incomplete models (mechanical, technical, physical) requiring machine learning approaches, either supervised with training at design-time or unsupervised based on reward learning at run-time.

Growing system complexity requires an increase in autonomy of distributed data processing systems, addressed, for example, by the deployment of mobile multi-agent systems carrying and processing information. Self-organizing systems are one major approach to solve complex tasks by decomposing them into smaller and simpler task performed by a large group of individuals.

Smart "Functional" Structures extend classical perceptive systems with actuators responding to changes in the environment or load conditions in real-time, enabling Reactive Perceptive Systems.

Topics included but not limited to are:

- Software engineering for sensing applications and sensor clouds
- Data mining in sensing applications
- Autonomous computing systems, Cognitive Systems, Robotics
- Multi-agent systems and intelligent computing
- Machine learning supporting sensing applications
- Ubiquitous smart systems and applications
- Sensor cloud, cluster and grid computing
- Internet of Things
- Human-computer, human-sensing, and human-machine interaction
- Machine-to-Machine (M2M) networks
- Service-orientated information processing and computing
- Reliable and fault-tolerant system design and algorithms
- Platform design and architectures
- Active perceptive systems coupling sensing + actuation including robotic systems

More Information: <http://sciforum.net/conference/ecsa-2/ecsa-S2>

Contact eMail: [sbosse@uni-bremen.de](mailto:sbosse@uni-bremen.de)

Participants will have the opportunity to examine, explore and critically engage with issues and advances in these areas. We hope to facilitate discussions and exchange within the community.

This event will solely be an online proceeding which allows the participation from all over the world with no concerns of travel and related expenditures. This type of conference is particularly appropriate and useful because research concerned with sensors is progressing rapidly. An electronic conference provides a platform for rapid and direct exchanges about the latest research findings and novel ideas. The participation as well as the "attendance" of this online conference is free of charge.

Accepted papers will be published in the proceedings of this e-conference, and selected papers will be published in Sensors with a 20% discount off the APC. Sensors is an Open Access publication journal of MDPI in the field of the science and technology of sensors and biosensors (<http://www.mdpi.com/journal/sensors>).

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