

**THE 47TH ANNUAL CONFERENCE OF THE  
IEEE INDUSTRIAL ELECTRONICS SOCIETY  
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**Special Session on  
“Low Power Smart Sensors for Industrial Applications:  
Hardware and Software Design”**

**Organized by**

Organizer(s):

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## **Call for Papers**

Wireless sensor networks are essential to the industry's 4.0 operability. Associated with concepts such as the Internet of Things and Cyber-Physical Systems, make the smart factory a reality. This is a multidisciplinary research field, through which it is possible to achieve significant progress. The availability of information enables manufacturers to optimize their processes quickly and efficiently. Through intelligent sensor networks, it is possible to acquire the necessary information for the collaboration in the production process. In this scenario, the adoption of wireless networks with a high number of nodes, some of them with energy restrictions, has given

rise to the developed of new energy harvesting methods and associated energy management mechanisms. On the other hand, the cooperation of the various elements of the network is only possible if standards are adopted to promote integration.

This special session aims to provide a forum for discussion that will attract scholars and industry practitioners for sharing and discussing the latest advances in this scientific field. Topics in this session include, but are not limited to:

- Low power wireless sensors
- Energy harvesting
- Embedded systems and hardware/software design and implementation
- Security issues
- System integration and flexible production
- Process monitoring using low power smart sensors
- Signal processing in low power smart sensors
- Teaching engineering standards and new educational technologies for Industry 4.0 based on smart sensors
- Smart sensors standards, test, and certification
- Applications of low power smart sensors

### ▪ **IES Technical Committee Sponsoring the Special Session (if any):**

IEEE IES Standards Technical Committee

IEEE IES TC on Cloud and Wireless Systems for Industrial Applications

IEEE IES TC on Industrial Informatics

IEEE IES TC on Education in Engineering and Industrial Technologies

### ▪ **Brief CV of SS Organizers**

**Reza Abrishambaf** received his PhD degree in Electrical and Electronic Engineering from Eastern Mediterranean University, Cyprus in 2012. He is an Assistant Professor of Electro-Mechanical Engineering Technology at Miami University in the United States. His research interests include Distributed Control Systems, Intelligent Manufacturing, Industrial Wireless Sensor Networks, Industrial Automation and IEC61499 Standard. Dr. Abrishambaf is an IEEE senior member, technical committee member of Cloud and Wireless Systems for Industrial Applications, Sub-group chair of IEEE P21451-002 working group and organized several special sessions for IEEE Industrial Electronics Society conferences.

**Antonio Espirito-Santo:** António Espirito-Santo is currently Head of Department and Professor in the Electromechanical Department, from the Faculty of Engineering, of the University of Beira Interior where he has been a faculty member since 1997. António completed his Ph.D. in Electrotechnical Engineering at the University of Beira Interior and the MSc in

Electrotechnical Engineering at the University of Coimbra. His research interests lie in the scientific area of instrumentation and measurement, ranging from theory to design and implementation. He actively collaborates with other researchers worldwide in several other disciplines promoting the interdisciplinarity. Currently, António is an Integrated Member of the Institute of telecommunications (IT). He also chairs the IEEE P21451-002 Working Group in Low-Power Smart Transducers, sponsored by the IEEE-ISE and co-sponsored by the IEEE-IMS

**Vincenzo Paciello:** received the M.S. degree in electronic engineering and the Ph.D. degree in information engineering from the University of Salerno, Fisciano, in 2002 and 2006, respectively. From 2008 to 2016, he was an Assistant Professor of Electrical and Electronic Measurements with the Department of Industrial Engineering, University of Salerno. Since 2016, he has been an Associate Professor of Electrical and Electronic Measurements with the Department of Industrial Engineering, University of Salerno, Italy. He develops activity of referee for some prestigious international journals and for the evaluation of national and European research projects. His current research interests include mechanical and electronic measurements, wireless sensor networks, instrument interfaces, smart meter, smart sensor network, and digital signal processing for advanced instrumentation. He is participating of different working group for standardization, in particular he was a chair of a sub-group of IEEE P21451.001 and now is vice-chair of IEEE P21451-002 working group.

**Victor Huang:** Dr. Victor Huang is a senior level executive seasoned in high technology industrial management, having served as VP Engineering in 5 separate startups in Silicon Valley, as Deputy Director of the Institute of Microelectronics (IME) in Singapore's highly successful high technology industry, and Technical Manager at AT&T Bell Laboratories. His experience spans the telecommunications industry and electronic mobility, wireless, and consumer products, and VLSI microprocessor chip design. Dr. Huang is an IEEE Life Senior member, Life AdCom member of the IEEE Industrial Electronics Society (IES), IES Technical Committee Chair of Standards, IES representative to the IEEE Standards Board, Secretary and Member of the IEEE Technical Engineering Management Society (TEMS), Member of the IEEE Communications Society, and the TEMS representative to the IEEE Future Directions Initiative on Symbiotic Autonomous Systems.