The Theme: As sensing technologies and wireless communications make rapid advances, industrial sensing applications are going through fast growth. For instance, many types of sensor nodes equipped with communication modules are providing more and more information about industrial production, and managing this newly-accessible sensing information can help to reduce maintenance cost, by automatically identifying the status of modules to avoid system unprepared breakdowns. Moreover, recent innovations in cyber-physical systems interconnecting industrial elements have not only improved their own capabilities, but also enabled them to connect to other networks and to the Internet. Based on above-mentioned advances and innovations, sensing-based integrated intellectualization will be an inevitable process for industrial systems. This ongoing process is addressing complex problems, utilizing the large-scale integration of distributed resources and sensing data, improving the effectiveness and cost-effectiveness of modern industrial production and applications, and overcoming one of the key weaknesses of industrial systems, decision making. New intelligent models, architecture, approaches, algorithms and solutions are needed to cope with the ever-increasing complexity of problems in modern industry, e.g., (i) cyber-physical component and device control problems, (ii) the energy consumption problems of equipment and productive processes, and (iii) the environmental pollution control problems of industrial production.

This Special Section on “Industrial Sensing Intelligence” is to provide a forum for researchers to discuss and exchange their latest achievements in related industrial systems. Topics include, but are not limited to, the following research topics and technologies:

- Innovative forecasting methods for solving complex problems in sensing-based modern industries, e.g., environmental protection
- Integration, processing and analysis of sensing data from spatially-distributed sensors for intelligent control and decision making
- Data mining and knowledge discovery based on Big Data analysis from the aspect of Industrial Internet of Things
- Intelligent control, localization and navigation systems for assets, productive processes and productive participants with the help of Geographic Intelligence or other sensing information from the physical world
- Standardization and test beds in the industrial sensing intelligence domain, for building automation systems, intelligent transport systems, energy management frameworks and structural monitoring infrastructure

Papers discussing new application areas and the resulting new developments at the interface of industrial sensing intelligence are especially welcome. All contributions must focus on industrial sensing system related applications.

Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Informatics http://tii.ieee-ies.org/. Please submit your manuscript in electronic form through Manuscript Central web site: http://mc.manuscriptcentral.com/tii. On the submitting page #1 in popup menu of manuscript type, select: SS on Industrial Sensing Intelligence

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Before submitting manuscript check the review criteria (http://tii.ieee-ies.org/o/RC.pdf) and other information (http://tii.ieee-ies.org/o/DI.pdf)

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable: Deadline for manuscript submissions: August 31, 2015  Expected publication date (tentative): May 2016

Guest Editors:
Lei Shu, Guangdong University of Petrochemical Technology, China, lei.shu@ieee.org
Carlo Cecati, University of L’Aquila, Italy, c.cecati@ieee.org
Michael G. Pecht, University of Maryland, USA, pecht@calce.umd.edu
Vincenzo Loia, University of Salerno, Italy, loia@unisa.it
Noel Crepsi, Institute Mines-Telecom, Telecom SudParis, France, noel.crespi@mines-telecom.fr

Head of the Electronic Engineering Department, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong