

CALL FOR PAPERS

Distributed Sensing for Quality and Productivity Improvement

A Special Issue of *IEEE Transactions on Automation Science and Engineering*

Due to rapid innovations in sensing technology and the rising complexity of manufacturing processes, increasingly less expensive and smart devices with multiple heterogeneous on-board sensors, networked through wired or wireless links and deployable in large numbers, are distributed throughout physical manufacturing systems to maintain the production performance, to ensure the life-cycle quality of products, and to improve the quality of management and service. This system-wide deployment of sensing devices is referred to as distributed sensing. This new technology has resulted in an environment rich in both temporally and spatially dense information, and provides unprecedented opportunities for quality and productivity improvement. The *IEEE Transactions on Automation Science and Engineering* (T-ASE) invites submissions for a Special Issue on *Distributed Sensing for Quality and Productivity Improvement*. The theme is to provide answers to the fundamental issue of how to best utilize the distributed sensor systems for quality and productivity improvement, through a collection of exemplifying research investigations. The aim is to make available to a large audience the state-of-the-art results on some critical research issues in this area.

Specially, the topics for contributions include, but are not limited to:

- Modeling and characterization of distributed sensor systems
- Optimal strategy for prescribing sensor distribution
- Integration of information from heterogeneous sensors
- Collaborative and distributed information processing in a hierarchical network
- Adaptivity study (self-learning, self-organizing capability) of distributed sensor systems
- Reliability, robustness and self-diagnosis of distributed sensor systems
- Methods for monitoring, detection and diagnosis using distributed sensor systems
- Enterprise-level data collection and management
- Data mining, pattern recognition and knowledge discovery in distributed sensing environments
- Autonomous or agent-based methods for distributed sensor networks
- Real-time, in-situ process control in distributed sensing environments
- Infrastructure, hardware and software platforms, and standardization for distributed sensing
- Novel applications of distributed sensing systems

Of special interest are contributions that include results on the application of new methodologies or systems to real-world examples. The illustrative applications, however, do not have to be manufacturing-related. Papers must contain high-quality original contributions and be prepared in accordance with the T-ASE standards and guidelines, including a *Note to Practitioners*. Submitted papers should be original, not previously published, and not under consideration for publication elsewhere. All papers will be reviewed following the regular review procedure of the T-ASE. Please see <http://www.ieee.org/t-ase> for details.

Paper Submission: Please submit your manuscript through the on-line Manuscript Central at <http://mc.manuscriptcentral.com/t-ase>. Please select "Special Issue" under Manuscript Category of your submission, and detailed instructions for authors are provided on-line at the site. If you have difficulties, please contact Editorial Assistant Tatiana Janowycz (ieeetase@engr.uconn.edu) or the Editor-in-Chief Dr. Peter Luh (Peter.Luh@uconn.edu).

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Important Dates:

April 30, 2005: Deadline for paper submission
September 30, 2005: Completion of first review
January 31, 2006: Completion of second review
March 01, 2006: Final manuscript due
July 2006: Publication of the special issue