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**Special Issue on enabling knowledge based smart manufacturing systems**

Smart manufacturing is targeted as the next generation of manufacturing by many national and international strategic development. The increasingly rich production data, the integration and extensive application of information technology, and the intelligent data processing and system modeling methods have collectively enabled smart manufacturing. Building upon them, manufacturing system modeling, knowledge acquisition, design and real-time control are the key components.

The central theme of the Special Issue will be *emerging opportunities and future directions in enabling knowledge based smart manufacturing systems*. This special issue will focus on how the promise of smart manufacturing could be fulfilled by providing knowledge either from models before operations and/or from data during operations of manufacturing systems. The goals of the special issue are (1) to present the state-of-the-art research in science, engineering and methodologies for knowledge based automated manufacturing systems, and (2) to provide a forum for experts to disseminate their recent advances and views on future perspectives in the field. Topics to be covered include, but are not limited to:

- Flexible, agile and customized manufacturing systems based on knowledge and learning techniques
- Knowledge based software for smart manufacturing systems
- Human-machine interaction for manufacturing automation
- Architectures and paradigms for smart manufacturing systems
- Design optimization for smart manufacturing systems
- Methods and principles for manufacturing knowledge acquisition during runtime
- Evolution of manufacturing knowledge basis for system redesign and optimization
- Performance evaluation, improvement and real-time control and scheduling of manufacturing systems
- Applications and case studies including industrial use cases

**Important Dates**

- Feb 15, 2019: paper submission deadline.
- May 1, 2019: completion of the first round review.
- September 1, 2019: completion of the second round review.
- November 1, 2019: final submission due.
- January 1, 2020: tentative publication date.

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**Paper Submission**

All papers are to be submitted through the IEEE's **Manuscript Central** for Transactions on Automation Science and Engineering <http://mc.manuscriptcentral.com/t-ase>. Please select "Special Issue" under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE Transactions on Automation Science and Engineering publication guidelines <http://www.engr.uconn.edu/~ieeetase/>.