IISE Transactions, Design and Manufacturing Focused Issue

Special Issue

Cybernized, Robust, and Sustainable Manufacturing Systems: Analysis, Design and Control

Smart manufacturing has been more prevalent and critical. As important elements and enablers of smart manufacturing, cybernization, flexibility and sustainability play key roles. Specifically, the network-accessed devices and services, robotics, automation, artificial intelligence, as well as industry 4.0, internet of things, clouds, have provided a solid foundation for real-time scheduling and control. With cybernized manufacturing networks, system robustness, such as flexibility and resilience, have enhanced manufacturing capability substantially to respond to dynamically changing markets and demands. Energy efficient and environment friendly manufacturing operations significantly strengthen system sustainability. Building upon them, production systems modelling, analysis, design and control comprise important parts of such systems. Numerous efforts have been devoted to them in both methodology development and practical implementations, generating numerous opportunities for innovations and new challenges for implementations. These have substantially expanded the scope of cybernized, robust, and sustainable manufacturing systems.

This special issue aims to publish original, significant and visionary papers describing scientific methods and technologies with both solid theoretical development and practical importance. The focuses are on *production networks modeling, analysis, design and control of cybernized, robust, and sustainable manufacturing systems*. Rigorous quantitative methods and models supporting real world practice are welcome. Submissions of innovative scientific results from experts in academia and industry are strongly encouraged. Topics to be covered include, but are not limited to the following:

- Flexible, agile and customized manufacturing systems
- Energy efficient and environment friendly manufacturing systems
- Collaborative robots in manufacturing systems design and operation
- Production-inventory-service network operation and optimization
- Human-machine interaction for production optimization
- Industry 4.0, IoT, cloud & AI for smart production
- Cybernized control and optimization in integrated production network
- Resilent design and control for manufacturing systems
- Complex system modeling and design optimization
- Performance evaluation and continuous improvement
- Real-time control and scheduling
- Applications and case studies

All papers are to be submitted through http://mc.manuscriptcentral.com/iietransactions. Please select "*Special Issue*" under Manuscript Category of your submission. All manuscripts must be prepared according to the *IISE Transactions* publication guidelines.

Important Dates

- Paper submission: 12/31/2017
- Completion of 2nd round review: 9/30/2018
- Publication date: 12/2018
- Completion of 1st round review: 4/30/2018
- Final submission: 10/31/2018

Guest Editors

Professor Jingshan Li
University of Wisconsin-Madison, USA
jingshan.li@wisc.edu

Professor Bengt Lennartson
Chalmers University of Technology, Sweden
bengt.lennartson@chalmers.se

Professor Chrissoleon Papadopoulos
Nazarbayev University, Kazakhstan
chrysoleon.papadopoulos@nu.edu.kz

Professor Chao-Bo Yan
Xi'an Jiaotong University, China
chaoboyan@mail.xjtu.edu.cn

Professor Feng Ju
Arizona State University, AZ, USA
feng.ju@asu.edu