Special Issue on
Recent Advances on Modeling, Control, and Optimization for Complex Engineering Systems

Call for Papers

The last decade has seen a radical step change in the scale and complexity of engineering systems, from industries like petrochemical, pharmaceutical, and light industry and machinery manufacturing to power and energy system, transport, and so forth. Complexity arises from a number of factors, such as the nonlinear coupling among units and variables as well as the uncertainty introduced into the system. Further, the rapid progress of information and communication technologies makes the connections even more complicated and widespread. As the core technologies in dealing with complex systems, the development of new modeling, control, and optimization techniques for large-scale and complex engineering systems has attracted an increasing interest, and it becomes a multidiscipline theme bringing together the modern control theory, computer modeling, intelligent optimization, powerful real-time parallel computing, and networking technology.

The main focus of this special issue will be on the new theories and their applications in modeling, control, and optimization for complex engineering systems, especially in industry applications. The special issue enables researchers worldwide to report their most recent developments and ideas in the field, with a special emphasis on the technical advances proposed within the last five years. Potential topics include, but are not limited to:

- Advanced modeling, control, and optimization for industrial processes
- Networked control system theory and applications
- Production planning and scheduling
- Intelligent computing and the applications
- Power electronics and power drives
- Power system operation and control with integration of renewables
- Electrical machinery and electrical apparatus
- Intelligent control systems in energy intensive industries and smart grid
- Intelligent transport systems and electric vehicles
- Intelligent sensing technology and instrumentations
- Nonlinear system modeling and control theory and applications

- Fuzzy and neural systems
- Intelligent fault detection
- Flexible manufacturing systems
- Factory modeling and automation
- Advanced image processing technologies
- Advanced adaptive control
- Advanced learning systems
- Smart sensor networks

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First Round of Reviews	Friday, 29 August 2014
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