

Special Issue on

Key Performance Indicators Relevant Fault Diagnosis and Process Control Approaches for Industrial Applications

CALL FOR PAPERS

With the development of science and technology, automatic control systems have been widely integrated into complex industrial processes such as chemical, polymers, metallurgy, power system, and semiconductor manufacturing. In order to meet ever increasing demands for high production and product quality as well as for economic and ecological operations, today's industrial processes have become more complex and their degree of automation is significantly growing. This development calls for more system reliability, dependability, and safety. Associated with this, process monitoring and control receive considerably enhanced attention, both in the engineering and in the research domains. However, practical processes still continuously pose new challenges due to quality requirements, safety and complex dynamics, performance evaluation, diagnosis, and maintenance, especially the Key Performance Indicators- (KPI-) relevant issues that call for more accurate and efficient operations which challenge the existing process monitoring and control technologies and meanwhile urgently pushes scientists and engineers to develop new methodologies to solve the above unsolved issues for complex practical plants. Therefore, the establishment and development of new model-based or data-driven process monitoring and control technologies are urgent issues in both the theory and applications.

This special issue is to provide a forum for researchers and practitioners to exchange their latest achievements and to identify critical points and challenges for future investigation on the modeling, monitoring and control of complex practical systems. The papers to be published in this issue are expected to provide latest advances of model-based and data-driven approaches, particularly the novel theoretical-supported ideas and algorithms with practical applications.

Potential topics include but are not limited to the following:

- ▶ Modeling methods for complex industrial systems
- ▶ KPI-relevant controller design and optimization methods for energy saving systems
- ▶ Robustness and stability analysis on KPI-relevant control methods
- ▶ KPI-relevant fault detection, isolation and diagnosis methods
- ▶ Lifetime management of automatic control systems
- ▶ hybrid models: integrating data-driven and first-principle models
- ▶ Integrating data-driven and knowledge-based methods in model
- ▶ Other monitoring and control technologies aim to improve efficiency and reduce energy consumption for complex industrial systems

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jcse/apmc/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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