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Nowadays, industrial systems, like chemical process, manufacturing process, power network, sustainable energy systems, transportation systems, wireless communication network, robotic systems, biomedical systems, and so forth, are becoming more complex, which are generally composed of a couple of interconnected systems, possess high-nonlinear and stochastic dynamics, are equipped with multiple control loops, and operate under noisy environments and varying loads. On the other hand, industrial systems are becoming more expensive, which have higher requirement for operation performance, productiveness, availability, reliability, and safety. Moreover, Industry 4.0 has become the current trend of automation industries, which has great impacts on improving the reliability and operation performance of complex industrial systems. Therefore, it is paramount but challenging to develop effective techniques in modelling, monitoring, and control for complex industrial systems. As rapid developments of industrial automation, cloud and cognitive computation, Internet of things, artificial intelligence, cyber-physical systems, and sensor technologies, modelling, monitoring, and control for complex industrial systems have been greatly stimulated and new techniques and applications have emerged in recent years.

This special issue aims to provide a platform for researchers and engineers to report their recent results, exchange research ideas, and overlook emerging research and application directions in modelling, monitoring, and advanced control for complex industrial systems.

Potential topics include but are not limited to the following:

- ▶ Novel modelling and validation techniques for complex dynamic systems
- ▶ Monitoring and health management for complex industrial systems
- ▶ Advanced control for complex industrial systems
- ▶ Prognosis and remaining useful life prediction for complex industrial systems
- ▶ Knowledge based monitoring and resilient control approaches
- ▶ Real-time implementation for modelling, monitoring, and control approaches
- ▶ Application and integration of various techniques such as chaotic system approaches, evolutionary game theory, cellular automata, and other model, signal, and knowledge based methods
- ▶ Emerging techniques and applications for Industry 4.0 systems

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Submission Deadline

Friday, 29 June 2018

Publication Date

November 2018