

CC6. Process and Power Systems

At the time of submission of you paper in PaperPlaza, by first selecting "Process and Power Systems", the following keywords in the right column will be listed. By selecting one of them as your "1st keyword", your paper will be handled and reviewed by the members of the IFAC Technical Committee (TC) shown in the left column. For more on Technical Committees under this theme, please see <https://tc.ifac-control.org/6>.

TC Name	Keywords
6.1. Chemical Process Control	Advanced control technology
	Applications in advanced materials manufacturing
	Applications in semiconductor manufacturing
	Batch and semi-batch process control
	Control and optimization of supply chains
	Control of distributed systems
	Control of large-scale systems
	Control of micro- and nano-systems
	Control of multi-scale systems
	Control of particulate processes
	Estimation and control in biological systems
	Estimation and fault detection
	Industrial applications of process control
	Machine learning and data analytics in process control
	Model predictive and optimization-based control
	Monitoring and performance assessment
	Nonlinear model reduction
	Nonlinear process control
	Process control applications
	Process modeling and identification
	Real time optimization and control
6.2. Mining, Mineral and Metal Processing	Advanced process control
	Artificial intelligence in mining, minerals and metals
	Data visualization
	Digital twins for power and process systems
	Equipment condition monitoring
	Expert systems
	Fuzzy control systems
	Intelligent decision support systems
	Machine learning methods and applications
	Maintenance scheduling and production planning
	Measurement and instrumentation
	Monitoring of product quality and control performance
	Neural networks in process control
	Nonlinear signal processing
	Process monitoring and fault diagnosis
	Process observation and parameter estimation
	Process optimisation
	Robotics
	System identification and modelling
	Virtual and augmented reality
6.3. Power and Energy Systems	Analysis and control in deregulated power systems
	Application of power electronics
	Constraint and security monitoring and control
	Control of renewable energy resources
	Control system design
	Distribution automation
	Dynamic interaction of power plants
	Impact of deregulation on power system control
	Instrumentation and control systems
	Intelligent control of power systems
	Modeling and simulation of power systems
	Optimal operation and control of power systems
	Power systems stability
	Real time simulation and dispatching
	Smart grids
	Test and documentation
6.4. Fault Detection, Supervision and Safety of Technical Processes	AI methods for FDI
	Active fault diagnosis
	Analysis of reliability and safety
	Applications of FDI and FTC
	Computational methods for FDI

	Condition monitoring
	Design of fault tolerant/reliable systems
	Distributed fault diagnosis
	Distributed fault-tolerant Control
	FDI and FTC for networked systems
	FDI based on qualitative models
	FDI for discrete-event systems
	FDI for hybrid systems
	FDI for linear systems
	FDI for nonlinear Systems
	FDI with sliding modes
	Fault accommodation and Reconfiguration strategies
	Filtering and change detection
	Filtering and estimation for FDI
	Methods based on discrete event models, on hybrid or on qualitative models for FDI
	Methods based on neural networks and/or fuzzy logic for FDI
	Observer based and parity space based methods for FDI
	Parameter estimation based methods for FDI
	Petri net-based fault diagnosis
	Process performance monitoring/statistical process control
	Reconfigurable control, sensor and actuator faults
	Signal and identification-based methods
	Signal processing for FDI
	Statistical methods/signal analysis for FDI
	Structural analysis and residual evaluation methods