ETFA 2014
19th IEEE International Conference on Emerging Technologies and Factory Automation
CALL FOR PAPERS

September 16-19, 2014; Barcelona, Spain

Sponsored by Technical University of Catalonia, Spain and IEEE Industrial Electronics Society requested

Aim: The aim of the conference is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of technology, as well as actual and potential applications to industrial and factory automation.

Solicited Papers: Research papers reporting on new developments in technological sciences. Industry and development papers reporting on actual developments of technology, products, systems and solutions. Tutorial and survey papers. Work-in-progress papers. In addition, ETFA 2014 solicits special session proposals to stimulate in-depth discussions in special areas relevant to the conference theme. Please consult the conference web page for more details.

Topics within the scope of the conference include:

Information Technology in Automation: IT Modeling techniques (Object-Oriented, Components, Agents, Service Oriented Architectures,…) for Automation Systems; Model Driven Development in Automation (UML, SysML, …); Data Modeling; Virtualization at the Factory Level; Digital Factory; Domain Specific Modeling and Programming Languages (IEC 61131, IEC 61499, …); Integration with MES and ERP Systems (Databases, Semantic Web Services); Tool Chains, Platforms, and Frameworks for Software Design and Development; Security and Safety in Factory, Home and Building Automation; Network Integration in Automation Systems; Dynamically Reconfigurable, Adaptive, and Emergent Automation Software/Systems; Cost-Effective Automation/ Systems (Life-Cycle Cost); Case Studies; Application Reports and Experiences in Practice: Smart Manufacturing, Web-of-Things in the Factory Line; Home and Building Automation; Emerging Energy Systems (Production and Integration).

Industrial Communication Systems: Industrial wireless networks; Industrial Fieldbus networks; Automotive and avionic networks; Home and building automation networks; Wireless sensor networks; Power system automation networks; Smart grids and powerline communications; IP-based and web-based communications; Middleware for industrial communications; Middleware for decentralized control; Real-time communication and synchronization; CoS and performance issues; Dependability, fault tolerance and safety in industrial communications; Security in industrial communications; Networked control systems; Integration of automation networks; Industrial communication case studies.


Automated Manufacturing Systems: Formal Modeling and Analysis of Manufacturing Systems; Scheduling, Simulation, Queuing Systems and Petri Nets; Analysis and Synthesis Techniques, Performance Evaluation and Reliability; Discrete and Continuous Industrial Automation Systems; Automated Manufacturing Systems and Enterprise Integration; Application of Service-Oriented Technologies; Benchmarks and Tools; Applications and Experiences in Practice; Recent Developments in Standardization; Resource Allocation Systems in Manufacturing; Fault Diagnosis, State-Estimation and Identification.

Industrial Control: Process Control; Equipment Control; Intelligent Control; Supervisory Control; Industrial Control Implementation; Discrete and Continuous Automation System; Equipment and Process Monitoring; Fault Detection and Management; Process Modeling and Optimization; Performance Assessment of Control Systems; Control Applications; Large-Scale Systems.

Computational Intelligence and Modern Heuristics in Automation: Intelligent Systems and Control, Modern Heuristics, Artificial Intelligence, and Data Mining in automation and industrial applications; Neural/Fuzzy/Evoluutory approaches in automation; Modern heuristics methods in factory automation based on predictive, adaptive control, recognition, navigation, motion control, competitive, self-organizing learning, and clustering; Computational Intelligence in wireless automation protocols such as Bluetooth, WiFi, and ZigBee; Computational Intelligence in security, reliability, and fault-tolerance in automation; Ant colonies optimization and swarm intelligence in automation; Also Petri Nets, Chaos, Markov models, Support Vector Machines, and Expert Systems.

Intelligent Robots & Systems: Cognitive Robotics; Cooperative and Collaborative Robotics; Multi-Agent Systems and Distributed Robotics Architectures; Human-Robot Interaction; Intelligent Robot Assistants; Intelligent Embedded Systems; Robot Programming; Natural Language Processing; Path Planning and Collision Avoidance; Navigation, Control and Manipulation for Intelligent Robots and Systems; Perception, Environment Description and Map Building; Mobile Manipulation; Planning and Failure Recovery; Network Robotics; Reasoning under Uncertainty; Robot Learning; Advanced Sensors and Vision Systems in Robotics; Usability Studies.

Sensors and Actuators: Sensor devices and sensor arrays; Sensor technology and new sensor principles; Sensor algorithms; Sensor instrumentation; Sensor device architectures; Intelligent sensors; Event-based sampling for sensors; Communication interfaces; Factory and process automation sensors; Smart actuators and drive systems; Electric actuators; Valve automation; Energy-harvesting wireless sensors and sensor applications; Signal processing for sensor applications; Industrial sensor devices; Analytical methods and modeling; Software for sensors; Energy efficiency and intelligent signal processing for wireless sensing; Sensors for urban environmental monitoring; Networked sensors and sensor platforms; Sensor applications for industry, environmental monitoring, corrosion; etc.; Adaptive sensing; Signal treatment and uncertainty estimation in sensors; Contactless detection and measuring systems for the industrial automation; Motion detectors; Neural networks and sensors; Mass-sensitive and fiber-optic sensors; Gas sensors; Nano sensors; Aerospace sensor systems.

Conference Format: The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a potential impact on the research area and potential implementations; work-in-progress (WP) sessions; panel discussions on the state-of-the-art and emerging trends, involving leading experts from industry and academia; and public discussion sessions moderated by leading experts in the field of industrial automation systems.

Submission of Papers: The working language of the conference is English. Two types of submissions are solicited. Long Papers – limited to 8 double column pages in a font no smaller than 10-point. Work-in-progress and industry practice – limited to 4 double column pages in a font no smaller than 10-point. Manuscripts must be submitted electronically in PDF format, according to the instructions contained in the Conference web site.

Best Paper Award: Best paper awards in Factory Automation and Emerging Technologies will be presented at the conference banquet dinner.

Further Information: ETFA2014 Conference Secretariat: Tel: +34 93 401 6974; Fax: +34 93 401 7045; Email: contact@etfa2014.org

Paper Acceptance: Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses.

No-show Policy: The ETFA2014 Organizing Committee reserves the right to exclude a paper from distribution after the conference at IEEEExplore if the paper is not presented at the conference.

Author’s Schedule:

Deadline for submission of long papers: March 15, 2014
Notification of acceptance of long papers: May 15, 2014
Deadline for submission of work-in-progress papers and Industry practice: May 20, 2014
Notification of acceptance of work-in-progress papers and Industry practice: June 20, 2014
Deadline for submission of final manuscripts – regular and special sessions: July 1, 2014
Deadline for submission of final manuscripts – work-in-progress papers and Industry practice: July 1, 2014

http://www.etfa2014.org