

**Session title: Intelligent and Distributed Optimization techniques for
Manufacturing and Supply chain systems - IDOM**

Organisers:

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Short presentation:

Nowadays, manufacturing control systems have evolved from reactive and informative decision support systems to proactive and intelligent manufacture management frameworks. Competitive industries require optimal/adaptive and interactive manufacturing processes in order to respond to dynamic market requirements. In response, advanced manufacturing control systems are configured as distributed architectures based on artificial intelligence, capable to support environment disturbances. However, these techniques, specifically Multi-Agent systems and Holonic Manufacturing Systems, are in general not featuring optimal performances. Conversely, Operational Research decision support systems achieve optimality under centralized architectures. Still, these are weak supporting adaptable processes subject to environmental disturbances. Consequently, researchers recently have focused in articulating optimality and flexibility paradigms in order to construct a robust optimal-wise and adaptable mechanism.

The aim of this session is to present recent advances on techniques based on efficient, robust and adaptive methods providing realistic solutions to different problems in manufacturing and supply chain systems. Papers should focus on the development of intelligent control and distributed systems that respond optimally to environmental perturbation.

Authors are invited to submit original contributions on Distributed Optimization methods for Manufacturing and Supply chain systems, including but not limited to:

- Hybrid techniques (OR and AI) for manufacturing systems,
- Hybrid and Novel Metaheuristics optimisation approaches,
- Adaptive and interactive Optimization,
- Distributed optimization,
- Real-time Optimization.

Keywords: Manufacturing Control Systems; Multi Agent System; Holonic System; Operational Research; Optimality; Robustness; Adaptive metaheuristics.

Important dates:

- Full Paper Submission: May 22, 2014
- Notification of Acceptance: June 22, 2014
- Final Paper Submission: September 8, 2014