



International

*Innovation in Knowledge Based and Intelligent
Engineering Systems*



INVITED SESSION SUMMARY

Title of Session:

Energy efficient manufacturing systems

Name, Title and Affiliation of Chair:

Dr Peter Ball & Dr Konstantinos Salonitis
Cranfield University, UK

Details of Session (including aim and scope):

Energy efficiency is one of the key drivers for sustainability. The availability and affordability of energy is becoming a critical parameter affecting the whole life cycle of the product, and subsequently the production phase as well. Manufacturing accounts for a significant proportion of the global total energy consumption and therefore CO₂ impact. Traditionally the performance of a production system is assessed by monitoring four main classes of manufacturing metrics; namely cost, time, quality and flexibility. The importance of energy efficiency has grown and is increasingly being considered alongside the established metrics. The challenge for the research community is to devise and then, with the help of leading companies, deploy methodologies, techniques and tools to aid the reduction in the energy metric without impacting negatively on the established critical metrics.

This special session is to consider what is the architecture of an energy efficient manufacturing system and, in turn, how it can be designed, improved and managed.

Papers are particularly invited in the following areas related to energy efficient manufacturing systems:

- Features, requirements and technologies for a concept system
- Tools & techniques for design
- Methods for measurement, including obtaining performance data from older production technologies
- Tools and techniques for analysis and developing improvements
- Tools and techniques for modelling and simulation
- Continuous improvement methodologies and cases
- Case studies on management of such systems and what practices are necessary to maintain
- Lean for green manufacturing
- Policies for energy efficient manufacturing

Dates for submission and review of papers

- Submission of paper by: t.b.c.
- Return of first review by: t.b.c.
- Submission of revisions by: t.b.c.
- Confirmation of paper acceptance by: t.b.c.

Main Contributing Researchers / Research Centres (tentative, if known at this stage):

Website URL of Call for Papers (if any):

To be developed

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