



International

*Innovation in Knowledge Based and Intelligent
Engineering Systems*



INVITED SESSION SUMMARY

Title of Session:

Computational modelling of sustainable manufacturing

Name, Title and Affiliation of Chair:

Dr. Mingming Tong

College of Engineering and Informatics, NUI Galway, Ireland

Details of Session (including aim and scope):

The overall aim of this invited session is to disseminate the research activities and results in the field of computational modelling with application in sustainable manufacturing.

The papers and presentations of this session can include the computational modelling of energy and/or material efficient method of manufacturing, such as near net shape manufacturing (e.g. additive manufacturing), material recycling, energy management and pollution/waste management etc.

The specific topics can include the computational modelling of fluid flow, heat transfer, material deformation/deposition, material purification, material removal and material metallurgy. This session can also include the presentations in the field of the computationally aided design of the light weight structure and structure optimisation.

This invited session will be a great opportunity for the computational modellers to get together and exchange their ideas and perspectives of computational modelling research, and will provide the experimentalists and industry very helpful advices with regard to the design and optimisation of the sustainable manufacturing. This session expects to attract research papers and presentations from the academia and industry in multiple countries. It will be a platform using which the state-of-the-art computational modelling activities are demonstrated and the attendees can establish new networks to strengthen their collaborative research and make further contribution to the body of knowledge and application of the sustainable design and manufacturing.

This session invites contributions from the following computational modelling research for sustainable manufacturing including (but not limited to):

- Multiscale modelling and experimental validation
- Additive manufacturing
- Casting, welding, rolling, forging, machining
- Material purification and/or recycling
- Energy or emission management
- Environmental impact of manufacturing method/process
- Design optimisation
- Power generation
- Pharmaceutical processes
- Other manufacturing processes

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