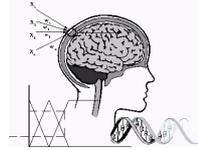




# International

*Innovation in Knowledge Based and Intelligent  
Engineering Systems*



## INVITED SESSION SUMMARY

**Title of Session:**

Sustainability-oriented Industrial Technologies in the domain of Industry 4.0

**Name, Title and Affiliation of Chair:**

Dr. Steffen G. Scholz, Head of research team at the Institute for Automation and Applied Informatics (IAI), Karlsruhe Institute of Technology (KIT), Germany

**Co-chair:**

Ahmed Elkaseer, Associate Professor, Faculty of Engineering, The British University in Egypt (BUE), Egypt

**Details of Session (including aim and scope):**

Given the rate of expansion of recent advanced and smart manufacturing technologies and new associated approaches e.g. Industry 4.0, there exists a real need for parallel sustainability development for these technologies. Especially, these hi-tech technologies are considered to be key enablers for the modern industry with the ability to revolutionise manufacturing with new processes, materials and applications. Their growth is driven by, and plays a significant part in driving the enthusiastic demand for more sustainable and competitive economy. However, enhancing the business atmosphere in the three dimensions of sustainability (social, environmental and economic) will enable to unleash the full potential of these technologies. This will offer enormous opportunities to realise smart sustainable manufacturing in the context of Industry 4.0, which will reflect positively on the manufacturing economy.

This special session aims at attracting state of the art contributions related to sustainability-oriented industrial technologies in the domain of Industry 4.0

In particular, topics include, but not limited to:

- Industry 4.0 sustainability-oriented challenges
- Sustainable energy-driven smart manufacturing technologies
- Sustainability of smart manufacturing processes
- Sustainability challenges for advanced micro- and nano-technologies
- Sustainable aspects for reliable process chains
- Sustainability-oriented process optimization and systems integration
- Sustainability-oriented risk management
- Sustainability-oriented automation processes and technologies
- Safe by design approaches of functional materials in 3D printing
- Life cycle assessment of 3D functional printed components
- Total cost of ownership analysis for digital manufacturing
- Open innovation and technology transfer models for sustainable manufacturing in Industry 4.0
- Innovation culture in businesses as a driver for sustainable actions
- Circular economy models in modern day manufacturing environments

Authors' guidelines and deadline for submissions can be found in the conference website: <http://sdm-25.kesinternational.org/>

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

Karlsruhe Institute of Technology (KIT), Germany

**Website URL of Call for Papers (if any):**

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