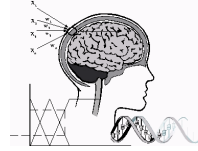




# International

*Innovation in Knowledge Based and Intelligent  
Engineering Systems*



## INVITED SESSION SUMMARY

**Title of Session: Redistributed manufacturing for resilience and sustainability.**

**Name, Title and Affiliation of Chair:**  
**Prof. Chris McMahon, University of Bristol**  
**Prof. Mohamed Naim, Cardiff University**  
**Dr. Laura Purvis, Cardiff University**

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

Manufacturing has undergone a suite of radical transformations over the past decade, the potential of which are only now being harnessed across a range of manufacturing scales from high-value (such as the aerospace industry) to SMEs and community groups. Crudely put, the options for the manufacturer have traditionally been limited to moulding things, bashing things into shape, cutting things and sticking things together. New technologies now allow those methods to be downscaled and locally owned. Other technologies, enabled by the exponential growth of computer power, are changing the manufacturing framework for example by allowing complex shapes to be made layer-by-layer through additive manufacturing and the customisation of products through use of data-driven insight.

Crucially, these new technologies represent highly adaptable manufacturing processes capable of operating at small scales. This offers new possibilities with respect to where and how design, manufacture and services can and should be carried out to achieve the most appropriate mix of capability and employment but also to minimise environmental costs and to ensure efficiency and resilience of provision. In short, manufacturing may now be able to be re-distributed away from centralised factories and global supply chains back into local networks, small workshops or even homes. These technologies and social movements are synergistic as localised manufacturing not only brings about local empowerment but fosters sustainable behaviour by enabling localised production with indigenous sustainable resources to support local economies and communities, as well as the remanufacturing and upcycling that are characteristic of the circular economy.

Given the socio-technical nature of the transitions, this special session of SDM16 invites contributions from diverse disciplinary perspectives, such as manufacturing, design, logistics, operations management, infrastructure, engineering systems, economics, geographical sciences, mathematical modelling, circular economy, big data and beyond.

Contributions of any types are welcome including empirical research, literature reviews, conceptual pieces, case studies and surveys.

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

EPSRC/AHRC “Re-Distributed Manufacturing and the Resilient, Sustainable City” – Bristol, Cardiff, Bath, Exeter, UWE  
EPSRC “Local Nexus Network for Redistributed Manufacturing” – Oxford, Cardiff, Birmingham, Exeter, Newcastle  
EPSRC “RECODE Consumer Goods, Big Data and Re-Distributed Manufacturing” - Cranfield, Cambridge, Brunel, Manchester, Teesside

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

Will put on the network web sites - [www.recode-network.com](http://www.recode-network.com)     [www.rdmrsc.org.uk](http://www.rdmrsc.org.uk)

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