

Roundtable Meeting, 21-22 October 2016

# Future of Manufacturing

Digitalisation | Personalisation | Localisation | Democratisation

National Institute of Advanced Studies, IISc Campus, Bangalore



## Jointly organized by:

National Institute of Advanced Studies, Bangalore  
Institute for Manufacturing, Cambridge University

## Supported by:

Dept. of Science & Technology, New Delhi  
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## In association with:

Indian Institute of Science, Bangalore  
Indian Institute of Technology (IIT):  
Bombay, Kharagpur, Delhi and Madras  
Central Mfg. Technology Institute, Bangalore

“Disruptive technologies such as 3D Printing, Cloud Computing, Smart Sensors and ICT enabled logistics, are bringing a paradigm shift – from centralized mass production to distributed customized manufacturing, closer to end users. India now has an opportunity to achieve its aspiration of large-scale employment generation by democratising manufacturing using smart technologies in an environmentally sustainable manner to leapfrog to the future.”

- Prof. Sir Mike Gregory,  
Cambridge Univ., UK

- Prof. Baldev Raj,  
NIAS, Bangalore

Invited participants comprise manufacturing domain experts from industry, leading researchers from academic institutes, R&D labs, and Government representatives. All participants will get an opportunity to contribute to the discussions, share their experiences and evolve collaborative proposals to enhance the capabilities and competitiveness of Indian manufacturing companies, especially MSMEs in key sectors.

# Future of Manufacturing



## Future of Manufacturing

The future of manufacturing will build on new technologies enabling product variety at multiple scales, with the following characteristics:

**Digitalisation** of product design, production control, demand and supply integration, for effective quality control at multiple and remote locations

**Personalisation** of products tailored for individual users to support mass product customization and user-friendly enhanced product functionality

**Localisation** of products, point of manufacture, and material use for quick response, just-in-time production and environmental sustainability

**Democratisation** of manufacturing value chain through enhanced participation from designers, producers and end-users

**The paradigm is especially suited to India**, for leveraging its natural, human and IT resources to democratize manufacturing, and leapfrog to a future that is more sustainable.

### Event Outcome:

This initiative builds on a strong foundation laid by Cambridge and NIAS, aligning closely with 'Make in India' and UK 'High Value Manufacturing' initiatives. The participants will include those who have already developed advanced technologies, and will benefit by learning from the speakers (UK and India) how to bring synergy into their endeavors. The event will provide a platform to discuss and evolve new ideas for empowering Indian MSMEs. Mechanisms to facilitate longer-term collaborations between UK and India will be discussed.

### Event Partners

#### Institute for Manufacturing, Cambridge University, UK

The IfM brings together expertise in *management*, *technology* and *policy* to address issues which can help industry and governments create sustainable economic growth, by aligning business and technology objectives.

**Management:** Development of sustainable industrial practice, capturing value from innovation, optimising global operations networks and moving from product to service-based models.

**Technology:** Additive and laser-based manufacturing processes, carbon nanomaterials, advanced information systems and automated identification technologies.

**Policy:** Programmes, processes and practices for translating publicly-funded R&D into new technologies and industries. In each of the above, the IfM carries out research, education and practice by working closely with various organizations.

#### National Institute for Advanced Studies, Bangalore, India

NIAS was conceived and founded in 1988 by the late Mr. J.R.D. Tata, who sought to create an institution to conduct advanced multidisciplinary research. Housed in a picturesque green campus in Bangalore, the Institute serves as a forum to bring together individuals from diverse intellectual backgrounds. They include administrators and managers from industry and government, leaders in public affairs, eminent individuals in different walks of life, and the academicians in the natural and life sciences, humanities, and social sciences. The philosophy underlying NIAS is given shape by its research teams drawn from a variety of disciplines, and by its integrated approach to the study of intersections between science and technology, philosophy, social issues and leadership. The objective is to nurture a broad base of scholars, managers and leaders who would respond to the complex challenges of contemporary India as well as the global society, with insight, sensitivity, confidence and dedication.

### Workshop Coordinators

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