

Engineering the future by leveraging digital technologies

This session will focus on how digital technologies are used to advance engineering. There are many ways of using digital technologies (e.g., artificial intelligence (AI), virtual reality (VR), augmented reality (AR), and digital twins) in various applications. As the new frontier in the field, this session looks at two applications – smart manufacturing and strategic planning. The academics involved will present and discuss their research, and the benefits of collaboration in this field.

Thursday 16 December

9:00-10:00 GMT
18:00-19:00 JST

Keywords:

**digital technologies,
manufacturing,
strategic planning,
engineering,
sustainability**

Audience:

Industry (engineers, technologists, managers, strategists),
government (policy makers and programme managers),
university (researchers, students), etc.

Organised by:

University of Cambridge Institute for Manufacturing (IfM) and
The University of Tokyo School of Engineering &
Institute of Industrial Science (IIS)

Language: **English**

Registration: **Webinar**

<https://u-tokyo-ac-jp.zoom.us/join/register/tZctc-yqqT4jGNBhA04F8tQEgYhwnato4y0X>



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Agenda

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Welcome, Introductions

Dr Yusuke Kishita (UTokyo)

9:05 GMT
18:05 JST

Digital Triplet of Learning Factory - Enhancing Engineers' Abilities in Smart Manufacturing

Prof Yasushi Umeda (UTokyo)

9:30 GMT
18:30 JST

Integrating AI and VR in strategic planning

Dr Letizia Mortara (Cambridge)

9:55 GMT
18:55 JST

Wrap up

Dr Robert Phaal (Cambridge)

10:00 GMT
19:00 JST

Close

Speakers



Prof Yasushi Umeda

www.susdesign.t.u-tokyo.ac.jp/en/

Prof Yasushi Umeda is Full Professor in RACE (Research into Artifacts, Center for Engineering), School of Engineering, the University of Tokyo, Japan. He holds BE, ME, and Dr. Eng. in Precision Machinery Engineering from the University of Tokyo. He authored/edited 29 books, over 150 peer-reviewed articles, and has 19 patents granted/pending. Five of his papers won best paper awards in scientific journals and international conferences. His research interests include sustainability science, smart manufacturing systems, design theory, life cycle design, and eco-design; especially, his current research interests include life cycle design for sustainable resource circulation.



Dr Letizia Mortara

www.ifm.eng.cam.ac.uk/people/lm367/

Dr Letizia Mortara is a Lecturer at the University of Cambridge and a Senior Fellow at Newnham College, Cambridge. She is a recognised expert in technology intelligence and open innovation and Associate Editor for the R&D Management journal. Her specific research interests include technology intelligence (i.e. activity set-up in order to keep abreast with the latest developments in technology) open innovation, and the advent of digital technologies in manufacturing (e.g. 3D printing) and technology management (e.g. AI and VR) and their implications for business.



Dr Yusuke Kishita

www.susdesign.t.u-tokyo.ac.jp/kishitalab/index_en.html

Dr Yusuke Kishita is Associate Professor at the University of Tokyo. He was Visiting Academic Fellow at University of Cambridge (December 2019-February 2020). His research interests include scenario design for sustainable futures, circular economy, roadmap design, and backcasting. He holds PhD in mechanical engineering from Osaka University, Japan.



Dr Robert Phaal

www.ifm.eng.cam.ac.uk/people/rp108/

Dr Robert Phaal is based in the Department for Engineering at the University of Cambridge. He conducts research in the area of strategic technology management, with a particular interest in the development of practical management tools in technology-intensive firms. He is a chartered engineer, with a PhD in computational mechanics.