

1. Title of the special session

Artificial intelligence and Optimization in Industry 4.0

2. A short description about significance of the session (maximum one paragraph)

Industrial automation is only a small part of the smart factory revolution, but it is a natural next step in the quest for greater efficiency and productivity. In addition, artificial intelligence has the potential to offer up entirely new commercial channels. Artificial intelligence (AI) has changed the way industry operates, thanks to a new type of human-machine interaction. Manufacturers may increase product quality, cut costs, and streamline production processes with the use of AI approaches developed for Industry 4.0. Artificial Intelligence (AI) approaches must be used in conjunction with emerging technologies, including Internet of Things (IoT), 3D printing, robotics, machine learning, 5G cloud/fog/edge computing and digital twins, among others, to drive Industry 4.0. Industry 4.0 or smart manufacturing needs firms to engage with experts to develop appropriate and bespoke solutions because of the difficulty of employing AI. It's also quite expensive and necessitates extensive internal and technical expertise to implement the AI technologies required in Industry 4.0. In Industry 4.0, zero-carbon activities are also difficult to implement.

3. Sub topics in the session

- Innovative operations using artificial intelligence
- artificial intelligence and optimization in Industry 4.0
- AI and optimization for deployment of smart factory, facility planning, scheduling, and logistics optimization in Industry 4.0
- AI and cloud/fog/edge computing in Industry 4.0
- AI and Private 5G network in Industry 4.0
- AI and digital twin in Industry 4.0
- AI and Blockchain in Industry 4.0
- AI and the Internet of things in Industry 4.0
- AI applications for smart manufacturing
- sustainability and zero carbon in Industry 4.0
- digital manufacturing

4. Contact details of the session organisers along with institute affiliations

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