

Special Session **SS_08** Smart Manufacturing Systems

Brief description of the specific scientific scope of the Special Session:

With advances of the Industry 4.0 concept implementation in the manufacturing process, the reality of smart manufacturing becomes imminent. Smart manufacturing features a combination of real and virtual world. A dynamic virtual representation of physical assets, i.e. their digital replica, is so called as Digital Twin. It continuously learns and updates itself from multiple sources. Digital Twin is a key enabling technology of the smart manufacturing as profiled by the Industry 4.0 paradigm. Another important technology is Collaborative Robotics supported by mixed reality especially in assembly manufacturing processes. The robot can be used as an assistance system for the improvement of the operator's working condition and products assembly quality. To support that, identification and inspection technologies have to be used, as Vision Systems, RFID (Radio Frequency Identification) IIoT (Industrial Internet of Things), MEMS (Micro-Electro-Mechanical Systems) sensors, etc. Edge Computing, Cloud Computing, Big Data, Artificial Intelligence (AI), Computational Intelligence or Soft Computing (subsymbolic AI) are other key enabling technologies for smart manufacturing systems.

List of topics of interest

1. Smart Manufacturing
2. Collaborative Robotics
3. Digital Twin
4. Vision Systems
5. Radio Frequency Identification
6. Industrial Internet of Things
7. Micro-Electro-Mechanical Systems
8. Computational Intelligence, Soft Computing
9. Edge Computing
10. Big Data, Cloud Computing

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