# Special Issue

## Towards Industry 5.0: Enabling Technologies, Challenges and Research Opportunities

### Message from the Guest Editors

The basic concept of a sustainable and resilient digital factory establishes a reliable human–machine coevolution relationship through AI, digital technologies, and collaborative robotics. This relationship is crucial for ensuring that human workers and automated systems can work together seamlessly, enhancing productivity while maintaining safety and well-being. 
This concept synthesizes the Industry 5.0 paradigm, which goes beyond the traditional Industry 4.0 focus on automation and data exchange. Industry 5.0 emphasizes human-centric approaches, leveraging the integration of digital technologies and automation to create strategies centered around Digital Twins and human Digital Twins in future manufacturing systems. An important issue that requires attention in the industrial environment, and in particular in the transition, is the characterization and validation of measurement apparatus equipped with AI algorithms fed by smart sensors. These advanced measurement systems are essential for supporting the development and operation of Digital Twins and human Digital Twins, ensuring accurate, reliable data that drive informed decision making.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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