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ASME *Journal of Mechanical Design*
Special Issue on Design Engineering in the Age of Industry 4.0

Industry 4.0 represents the Fourth Industrial Revolution and can be used as a framework to address all aspects of product realization, including the challenges arising in the integration of cyber-systems and physical resources. The emerging paradigm of Industry 4.0 poses new systems design problems at the interface of smart manufacturing, robust and flexible automation, distributed and reconfigurable production systems, industrial IoT, and supply chain integration. Design engineering in the age of Industry 4.0 requires a new paradigm that deals with sustainability of product and service, user experience, and human satisfaction across a smart and connected value chain, as well as the distributed and networked aspect of the product realization processes.

This Special Issue is dedicated to recent advances of design engineering in the age of Industry 4.0. Original papers with an explicit relevance to design issues such as design synthesis, modeling and analysis, or with clear design motivation – whether theoretical or practical in nature – as well as state-of-the-art reviews, new perspectives, and outlooks on future research directions are welcome.

Topics of interest include, but are not limited to:

- Design principles, design theory and methods, design automation, and DFX for Industry 4.0. This includes forecasting/prediction, managing uncertainty, data mining, and machine learning
- Design issues regarding coordinated customer, product, process and logistics decisions in smart factories of the future, integration of supply chain and manufacturing, value chain design, resilience and sustainability of closed-loop smart design, manufacturing and deployment for a circular economy in Industry 4.0
- Design engineering associated with enterprise architectures and ontologies of cyber-physical systems for manufacturing, including design of flexible manufacturing machines and reconfigurable processes, resilient and sustainable manufacturing
- Design engineering associated with new strategies, organization issues, enabling technologies, business models, case studies, and industrial practice, including strategic planning of manufacturing as social-technical systems, human behaviors, societal and economic impacts of smart factories
- Design engineering at the human-technology frontier, cloud-based design and manufacturing, human-robot interaction, workplace design and industrial safety, digital human modeling, and team cognition
- Design engineering associated with decentralized data-driven decision making, autonomy, secure design and manufacturing, online design, and manufacturing marketplaces
- Design automation and decision making based on smart manufacturing systems modeling and simulation, performance measure, economies of scale and scope, valuation and cost accounting of product realization
- Design education, workforce development, cyber training, distributed learning, and cognitive assistance for smart factories and Industry 4.0

Publication Target Dates

Paper submission deadline:	**August 31, 2020**
Initial review completed:	**November 30, 2020**
Final decision:	**January 31, 2021**
Special Issue publication date:	**May 1, 2021**

Submission Instructions

Papers should be submitted electronically to the journal at **journaltool.asme.org**. If you already have an account, log in as author and select **Submit Paper** at the bottom of the page. If you do not have an account, select **Submissions** and follow the steps. In either case, at the **Paper Submittal** page, select the **ASME *Journal of Mechanical Design*** and then select the Special Issue **Design Engineering in the Age of Industry 4.0**. Papers received after the submission deadline may still be considered for the Special Issue, if time and space permits.

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