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### Special Issue on the Digitalization and Automation of Energy Systems

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#### Special Issue on the Digitalization and Automation of Energy Systems

Recent research trends are toward the digitalization and automation of modern energy systems, such as solar and wind energy storage, electric vehicles, power grids, smart buildings, energy harvesters, etc. The efficiency of these systems increasingly relies on real-time computing, information, and communication technologies to integrate smart controls with hardware infrastructure. In the design, operation, service, and recycling stages, real-time data collection, visualization, prediction modeling, and analysis are required for effective prediction and health diagnosis, maintenance, disassembly, and efficient sorting.

For digitalization and automation, applications and developments of advanced computing, information, and communication technologies, such as Digital Twin technology, Artificial Intelligence (AI), Internet of Things (IoT), Cyber-Physical Systems (CPS), and Block Chain are vital. Digital Twin is an integration of emerging technologies, such as AI, IoT devices, big data, cloud computing, virtual reality technology, collaboration platforms, 5G, sensors, dimension reduction, and real-time interaction of energy systems with their environments. AI, big data, and machine learning techniques are used for modelling, planning, and operation of energy systems. IoT devices combined with edge computing significantly increase possibilities to remotely monitor energy systems, offering better economic solutions and promoting the "circular economy" of energy sectors.

This Special Issue is committed to advanced computing, information, and communication technologies for achieving design, efficient operation and service, sustainable recycling, real-time diagnosis, and efficient integration of energy systems.

#### Topic Areas

- The application of Digital Twins, cyber-physical tools, AI, IoT, Block Chain, edge computing, cloud computing, etc. in energy systems
- Predictive modelling and robust optimization of energy systems
- Big data modelling and energy management of energy storage and grid systems
- Real-time health diagnosis, maintenance, and replacement of energy systems
- Sensors and devices for IoT-based energy systems
- AI and metaheuristics for modeling, planning, operation, maintenance, and control of energy systems
- Information and communication technologies for energy systems
- AI methods for the circular economy for energy sectors
- Augmented and virtual reality for visualization of energy systems

#### Publication Target Dates

Paper submission deadline	<b>June 30, 2023</b>
Initial review completed	<b>August 31, 2023</b>
Special Issue publication date	<b>June 2024</b>

#### Submission Instructions

Papers should be submitted electronically to the journal at [journaltool.asme.org](http://journaltool.asme.org). If you already have an account, log in as an author to your ASME account. If you do not have an account, sign up for an account. In either case, at the **Paper Submittal** page, select the [ASME Journal of Computing and Information Science in Engineering](#) and then select the Special Issue **Digitalization and Automation of Energy Systems**.

Papers received after the deadline or papers not selected for inclusion in the Special Issue may be accepted for publication in a regular issue. Early submission is highly encouraged. Please also email the Editor, Professor Yan Wang, at [yan.wang@me.gatech.edu](mailto:yan.wang@me.gatech.edu), to alert him that your paper is intended for the Special Issue.

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