AI Enhanced Reliability Assessment and Predictive Health Management

Theme: With the rapid advances of Internet-of-Things (IoT) and big-data technologies, there have been increasing interests in the development and implementation of advanced artificial intelligence methods to address reliability and prognostic challenges in various industrial systems. This would potentially complement the downsides of the conventional physics-based models and statistical models that might not sufficiently account for the dynamic natures of complex engineering systems. To this end, diverse types of artificial intelligence methods have been developed in light of the massive and multi-dimensional data collected through the sensors and IoT devices. In particular, advanced AI methods, such as deep learning, transfer learning and reinforcement learning, are well-suited to utilize big-data to enhancing the reliability and prognostics of industrial systems, from the aspects of condition monitoring to predictive maintenance.

This special section will focus on (but not limited to) the following topics:

·AI methods for reliability assessment
·AI methods for condition monitoring and fault diagnosis
·AI methods for remaining useful life prediction
·AI methods for reliability design and redundancy allocation
·AI methods for condition-based maintenance and predictive maintenance
·Explainable AI for reliability and PHM
·Predictive maintenance planning based on AI methods

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Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable: Deadline for manuscript submissions   **October 31, 2021**
Expected publication date (tentative)   May 2022

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