International Journal of Automation Technology (IJAT)

Call for Papers:

Special Issue on
Machine Accuracy Evaluation

Guest Editors:

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The accuracy of a three-dimensional (3D) positioning system can ultimately be evaluated by measuring a 3D vector between command and actual end effector positions at arbitrary points over the entire workspace. This is a simple and yet challenging metrological problem. The motion accuracy of a machine tool is traditionally evaluated on an axis-to-axis basis, with every error motion of every axis independently measured as a one-dimensional measurement in a different setup. Research efforts have offered several new measurement technologies toward the ultimate goal of 3D position measurement over the entire workspace. Lately, to orientate a tool or a workpiece, more machine tools have rotary axes. The evaluation of both translational and angular error motions of rotary axes is essential. The application of this type of new 3D position/orientation measuring technique is not limited to a machine tool or a coordinate measuring machine (CMM). The applications of an industrial robot could be significantly expanded if its absolute 3D positioning accuracy were guaranteed to a certain level over its entire workspace. New applications for such a robot could include machining, but a new accuracy measurement scheme would be essential.

This special issue covers technical and academic efforts related to the accuracy evaluation of precision machinery. Various machines can be covered, including machine tools, CMMs, and industrial robots. New measuring instruments or schemes will be presented to evaluate various accuracies of a machine (e.g., volumetric, dynamic motion, and machining accuracy), thermal and environmental influences, and long-term performance deterioration. We are also interested in new and unique industrial applications.

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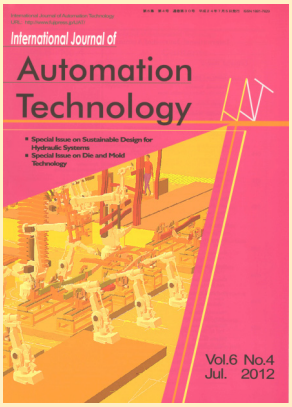

Pages and important deadlines:

Number of pages: 8 pages (but no limit) / 8,000 words
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Submission Deadline: **September 27, 2019**

Publication: May 5, 2020 (Vol.14 No.3)

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