Special Issue

Power Electronics and Actuators

Message from the Guest Editor

Electromagnetic actuators have been widely used in many areas including aerospace, machine tools, transportation, and so on. The power electronics converter is the main drive for the actuators, with control capability for the motion of the actuator through electromagnetic force. The efficiency, power density, dynamic response, and reliability are the major pursuits of the power electronics drive for the actuator. The control method also presents challenges. With next-generation wide-band-gap power electronics devices, there are new opportunities for the performance of power electronics drive for actuators. This Special Issue is for the progress of power electronics converters for the actuator drive in different applications. Original papers and survey papers are welcome.

Guest Editor

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Deadline for manuscript submissions

closed (31 October 2024)

Actuators

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.3

mdpi.com/si/110083

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About the Journal

Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of $1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

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