actuators

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Advanced Methods for Modeling, Analysis and Design of Electric Machines and Electromechanical Devices

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Deadline for manuscript submissions:
closed (31 March 2022)

Message from the Guest Editors

Dear Colleagues,

This Special Issue aims to gather and compare advanced methods for the modeling, analysis and design of electric machines and electromechanical devices of any kind (from induction machines to wound field, PM and reluctance synchronous, to switched reluctance, vernier, switched flux, homopolar and other unconventional structures), featuring any topology (from radial and axial flux rotary devices to linear and multi-degree-of-freedom actuators), and including bearingless machines and magnetic levitators.

The presentation of optimized machines designed by properly applying the proposed advanced methods is encouraged, as well as the comparison among different approaches aiming to single out the most effective ones, permitting one to reduce the overall computational burden and ultimately the time required for the whole design and validation process.

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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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