Special Issue

Advanced Technologies in Superconducting Actuators

Message from the Guest Editors

Dear colleagues, Actuators are becoming increasingly necessary in various industries and applications, such as manufacturing, transportation, vehicles and airplanes. In particular, actuators using electromagnetic forces have excellent characteristics. On the other hand, superconducting materials demonstrate many beneficial properties, such as zero electrical resistance, perfect diamagnetism, pinning effect and permanent current. Therefore, superconducting actuators with these excellent characteristics carry great potential. In this Special Issue, we will focus on actuators and actuator systems with superconducting characteristics and the related actuators. A wide variety of journal papers are welcome. Contributions may include, but are not limited to, the following topics:

- superconducting actuators
- superconducting actuator systems
- superconducting levitations
- superconducting transportation vehicles
- superconducting actuators for medical applications
- cryogenic actuators

Guest Editors

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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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