Special Issue

Electroactive Polymer Actuators

Message from the Guest Editor

Electroactive polymers represent an exciting and unique subset of materials that have garnered great interest over the last decade due to their ability to mechanically actuate in response to an applied electric field or to store energy acquired from mechanical deformation of the polymer structure. These materials have potential as sensors through their electrical response to deformation, in energy harvesting, and as actuators. Due to their versatility, electroactive polymers have application in various areas including textiles, robotics, aerospace, and in the medical sector. Therefore, this Special Issue invites articles on the synthesis of electroactive materials, electromechanical testing, material and design optimization, modelling, and real-world applications of these materials. **Keywords:**

- electroactive polymer materials
- flexible sensors
- polymer actuators
- dielectric elastomer
- ionic electroactive polymers
- artificial muscles
- conducting polymers
- polymer gels
- ionic polymer metal composites

Guest Editor

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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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