



Physical Modelling and Estimator-Based Control as Basis of Energy-Efficient Actuators

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Deadline for manuscript
submissions:

closed (31 May 2018)

Message from the Guest Editors

This call aims at collecting contributions related to the design and feedback control of actuators in any field of applications, where the physical couplings are exploited to obtain more efficient, highly compact and innovative devices. The call is mainly focused on, but not limited to, the following fields:

- Electromagnetic actuators: innovative designs, model-based optimization and observer-based control using the back-electromotive force (bemf)
- Concept and control of devices using Eddy current effects in order to recover energy
- Use of Seebeck-Peltier effects to obtain efficient thermal actuators and corresponding control algorithms
- Piezo-electric system using the back-electro charge force (becf) in control and estimation
- Innovative fluidic actuators in combination with observer-based control.

Moreover, the call also addresses self-sensing effects in feedback-controlled actuators that are implemented by using state and disturbance observers, Kalman Filters or similar estimator structures.

