Special Issue

Advances in Ultrasonic Motors

Message from the Guest Editors

Ultrasonic motors, driven by the inverse piezoelectric effect, utilize piezoelectric materials to generate ultrasonic vibrations for motion. Compared to traditional electromagnetic (EM) motors, they offer advantages such as low speed, high-torque output, precise control, compact design and high resistance to EM interference. Additionally, they produce minimal heat, enhancing system stability and enabling long-term use. Ultrasonic motors are widely applied in fields like Micromachines, Medical imaging, and Aerospace. However, their drawbacks include high production costs and complexity, limited lifespan, and relatively low efficiency. Nonetheless, advancements in piezoelectric materials and control strategies continue to expand the use of ultrasonic motors in various applications. Accordingly, this Special Issue seeks to showcase research papers, short communications, and review articles that focus on (1) novel designs, fabrication, control, and modeling of ultrasonic motor based on all kinds of actuation mechanisms; and (2) new developments of applying ultrasonic motors of any kind in consumer electronics, optical communications, industry, medicine, space, or defense.

Guest Editors

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Deadline for manuscript submissions

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