

Allgemeines Physikalisches Kolloquium

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The Future of Microrobots in Medicine: Ultrasound Technology

Precise, accurate, and wirelessly controlled motion of microrobots can unlock new and exciting possibilities in targeted and precise drug or gene delivery, application of forces on specific cells or tissues, performing biopsies, and facilitating non-invasive surgery. Ultrasound emerges as a highly appealing modality for governing micro and nanorobots, owing to its ability to penetrate deep into tissue, remain unaffected by the opaque nature of animal bodies, and generate a wide spectrum of forces. In this presentation, we will delve into the ultrasound-based micromachines and microrobotics systems that are currently under development at the Acoustic Robotics Systems Lab (ARSL) at ETH Zurich, as well as their prospective applications in the field of medicine.