Autonomous Motors Powered by Ultrasound


MRSEC researchers working in an international collaboration with French scientists at ESPCI (Paris Tech) have discovered that rocket-shaped metallic micro-rods can be propelled through fluids using ultrasound, with fast translation towards the tapered end and rapid rotation & assembly of rods into circular chains that move like conveyer belts. Since most ways to make micro-objects move autonomously in fluids are incompatible with biological fluids, this bio-friendly ultrasound technique may be a first step towards the design of powered micro-robots that can perform microsurgery or deliver drugs or imaging agents to specific parts of the body.