

## Polymer Rod Actuator System with Electromagnetic Field from Electrode

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Polymeric microsystems, nowadays, attract attention in microelectromechanical system (MEMS) and lab-on-a-chip device. For actuator system, many studies try to achieve diverse and precise motion since, as improve the motion of microactuator, the actuator system cannot apply only for micro-robot, but also microfluidic control system. However previous studies have suffered from fabricating well-aligned microscale system or systematical actuating.

Here, for the first time, I introduce polymeric actuator system, consist of polydimethylsiloxane (PDMS) and cobalt iron oxide (CoFe<sub>2</sub>O<sub>4</sub>), which can react by electromagnetic field. PDMS microarray which contains cobalt iron oxide, is manufactured by photolithography and, after setting an electrode under polymer patch, the motion of the actuator system can be systematically controlled by current.