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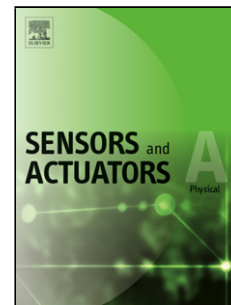
Title: Elliptical-like cross-section ionic polymer-metal composite actuator for catheter surgery

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Elliptical-like cross-section ionic polymer-metal composite actuator for catheter surgery

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HIGHLIGHTS

- We proposed novel IPMC catheter design for surgery.
- It has track-shaped cross-section which has lower second moment of area than true-circle tube.
- We measured the displacement of IPMC catheter by camera measurement system.
- The tip of the catheter moved by 1.67 mm for applied voltages of 2 V.

Abstract

Catheter surgery is one of the surgical methods for brain, vessel, and heart surgery in which doctors insert medical tools through the vessels using catheter tubes. However, as it is performed by human hand, operating upon miniscule vessels, for example, deep within the brain, is difficult. Hence, robot catheter systems that can move the tip of the catheter are desired. Herein, we present a novel method for controlling the

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