

Polymer-based Tubular Microbots: Role of Composition and Preparation

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SI VIDEOS

SI Video 1. Three different polymer based microbots in 5% H₂O₂ and 2% sodium cholate.

SI Video 2. Propulsion of small microbot (4 μm long) in 4% H₂O₂ and 5% sodium cholate.

SI Video 3. The fastest PEDOT/Pt bilayer microbot (1400 body length s⁻¹) in body temperature (37 °C) in 10% H₂O₂ and 5% sodium cholate.

SI Video 4. The fastest PANI/Pt bilayer microbot (730 body length s⁻¹) in body temperature (37 °C) in 10% H₂O₂ and 5% sodium cholate.

SI Video 5. The fast propulsion of microbots in 10% H₂O₂ and 2.6% sodium cholate with the addition of 0.25% hydrazine.

SI Video 6. The propulsion in hydrazine only in 0.1% hydrazine.

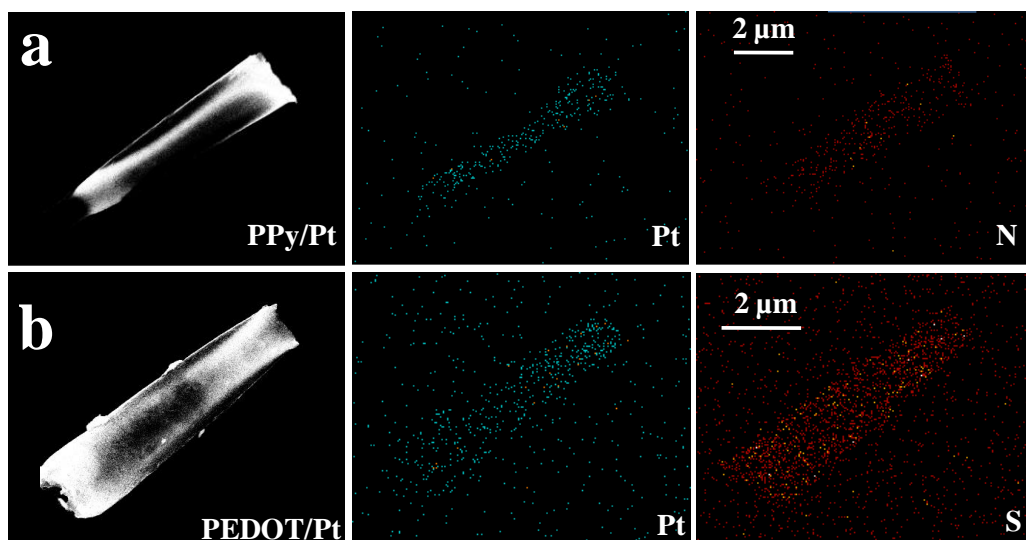
SI Video 7. A PPy-Ag tubular microbot in 15% H₂O₂ and 5% sodium cholate.

SI Video 8. A PPy-Ni tubular microbot in 10% H₂O₂ and 5% sodium cholate.

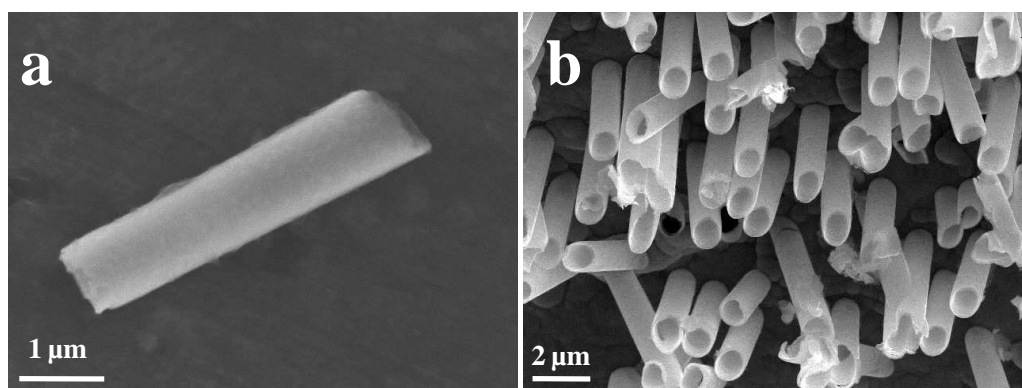
SI Video 9. The biocatalytic propulsion of microbot in 0.5% H₂O₂ and 2% sodium cholate.

SI Video 10. The propulsion of a Au-Pt bimetallic microbot in 10% H₂O₂ and 2% sodium cholate.

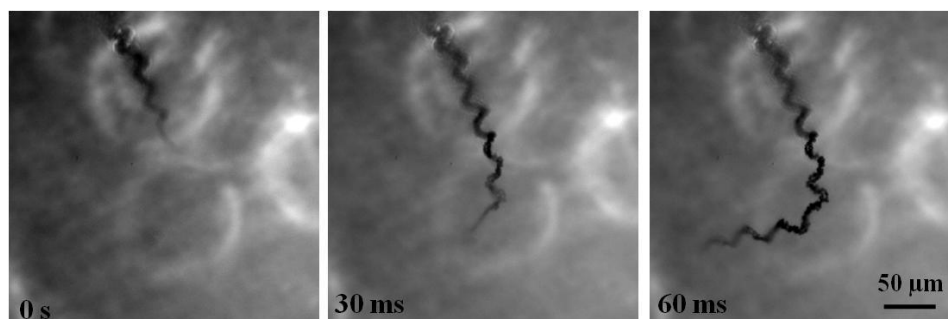
SI Figures



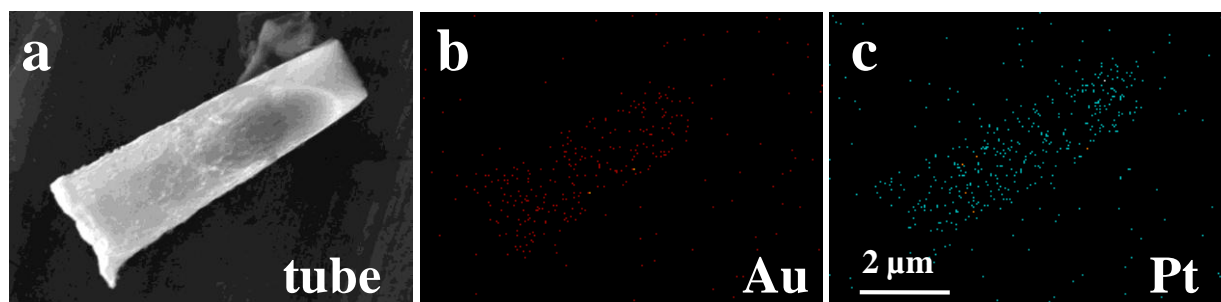
SI Figure 1. The EDX analysis results of the polymer based bilayer microtubes: a) PEDOT/Pt; b) PPy/Pt.



SI Figure 2. The PEDOT/Pt microtube with smaller size: 4 μm in length, outer 1 μm vs. 1.1 μm, inner diameter 700-800 nm.



SI Figure 3. The ultrafast propulsion (700 bl s^{-1}) of the PANI/Pt microbot in 10% H_2O_2 and 2.6% sodium cholate with the addition of 0.25% hydrazine.



SI Figure 4. SEM image of Au/Pt bilayer microtube (a) and EDX results showing metal composition of the Au layer (b) and Pt layer (c).