Biomimetic soft crawling robot for GI tract inspection

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Introduction
Colorectal cancer (CRC) is the most common cancer in Hong Kong. Incidence rate has been increasing in past two decades in HK [1]. By contrast, after promoting early screen for CRC, incidence and mortality rates of CRC patient in the US are decreasing significantly since 2003 [2]. It shows that recommended CRC screening recommendations will prevent more CRC cases.
The goal of this project is to 1) Provide a complete soft and small size platform for GI tract inspection, therefore enabling intrinsic safety and improving patient’s tolerance; 2) achieve active locomotion, i.e. crawling and bending.

Prototype Design

Inhale/Exhale Control System

Results

(A) Crawling speed

(B) Bending angle

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References