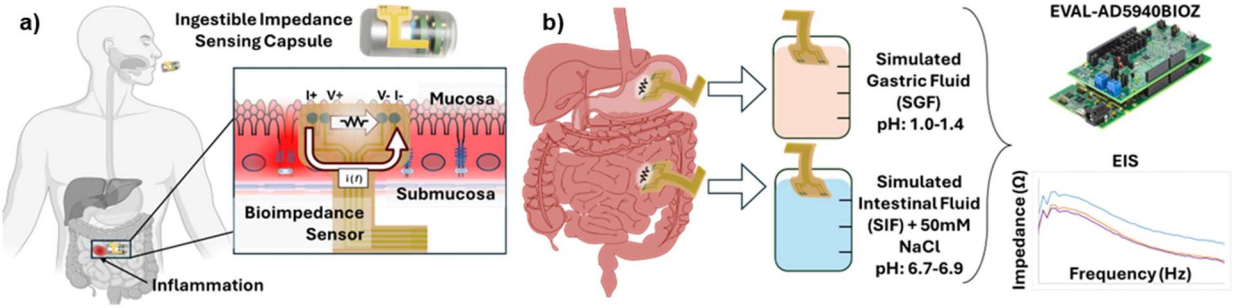
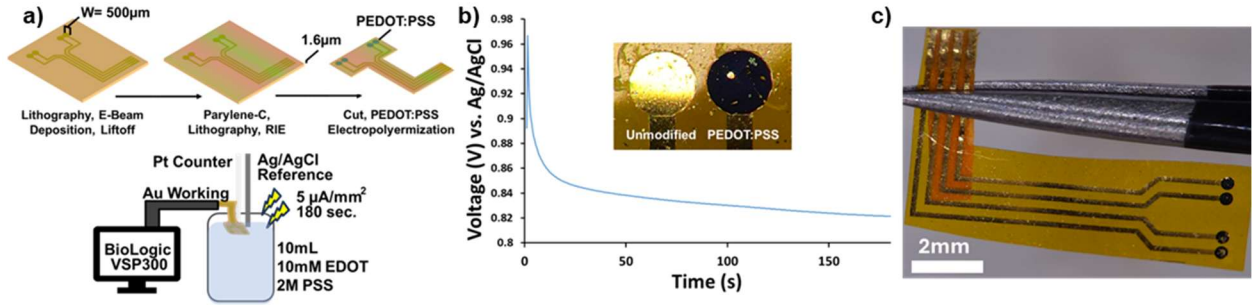
Supplementary Fig. S1: (a) Overview of bioimpedance sensing capsule to detect inflammation in the GI tract. (b) Methodology of testing improved sensor performance in gastric and intestinal fluids.



Supplementary Fig. S2: (a) Fabrication steps of flexible bioimpedance sensor. S1813 on polyimide patterned using MLA150 maskless aligner. 20/200nm of Cr/Au deposited with Angstrom NexDep Ebeam evaporator and patterned with liftoff in sonicated acetone. 1.6µm thick Parylene-C layer coated by DEP-06: Parylene Coater. Trion Phantom RIE at 50W with 100 sccm of O_2 exposes electrodes and contact pads (b) Chronopotentiogram of electropolymerization of PEDOT:PSS film with visual comparison of bare Au and PEDOT:PSS/Au electrode. (c) Microscope image of fully fabricated sensor.



Supplementary Fig. S3: (a) Cyclic voltammogram of PEDOT:PSS-coated vs bare Au electrodes in PBS. (b) Average impedance of bioimpedance sensor over time in SGF. (c) Average impedance of bioimpedance sensor over time in SIF. EIS data recorded at 10 kHz frequency was used for analysis and error bars were created with N = 3 repeats per time interval.