

Supplementary Materials

Highly Sensitive and Cost-Effective Portable Sensor for Early Gastric Carcinoma Diagnosis

Saw Lin Oo ¹, Shishir Venkatesh ¹, Vaithinathan Karthikeyan ¹, Clement Manohar Arava ¹, Spoorthy Pathikonda ², Peter K. N. Yu ², Terrence C.K Lau ³, Xianfeng Chen ^{4,*} and Vellaisamy A. L. Roy ^{5,*}

- ¹ State Key Laboratory for THz and Millimeter Waves and Department of Material Science and Engineering, City University of Hong Kong, Kowloon, Hong Kong, China; kosawlinoo@gmail.com (S.L.O.); shishir.venkatesh@gmail.com (S.V.); kvecers@gmail.com (V.K.); clementmanohar7@gmail.com (C.M.A.)
- ² Department of Physics, City University of Hong Kong, Kowloon, Hong Kong, China; spoorthy.709@gmail.com (S.P.); peter.yu@cityu.edu.hk (P.K.N.Y.)
- ³ Department of Biomedical Science, City University of Hong Kong, Kowloon, Hong Kong, China; chiklau@cityu.edu.hk
- ⁴ School of Engineering, Institute for Bioengineering, The University of Edinburgh, King's Buildings, Mayfield Road, Edinburgh EH9 3JL, UK
- ⁵ James Watt School of Engineering, University of Glasgow, Glasgow, G12 8QQ, UK
- * Correspondence: Michael.Chen@ed.ac.uk (X.C.); Roy.Vellaisamy@glasgow.ac.uk (V.A.L.R.); Tel.: +44(0)131-650-2784 (X.C.); +44(0)141-330-0856 (V.A.L.R.)

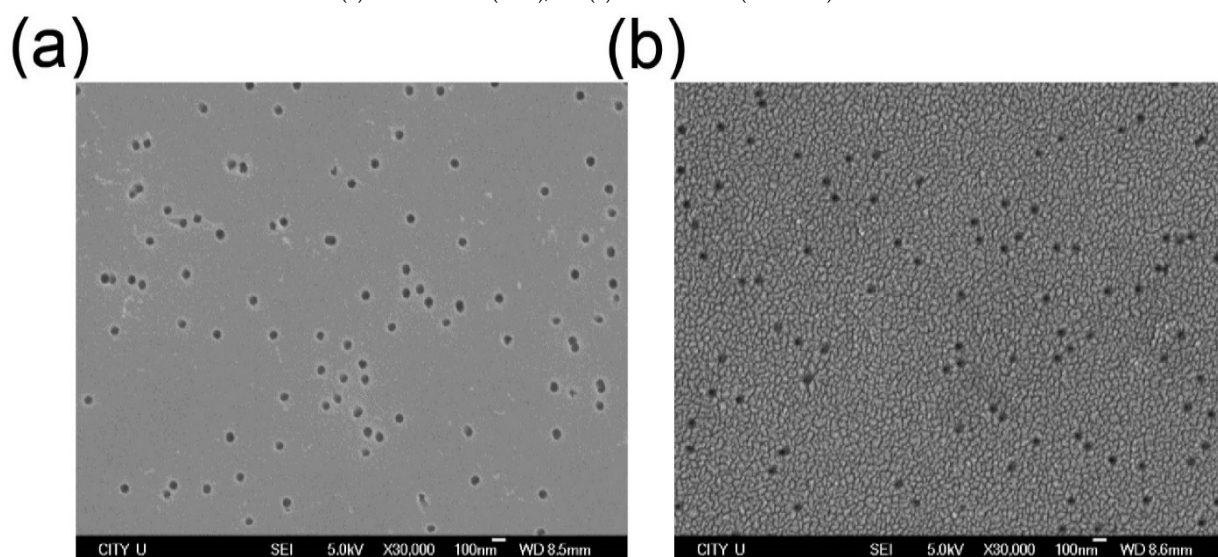


Figure S1. Surface morphology study of PC membrane with different surface modification (a) PC membrane without gold coating (pore size ~50 nm) (b) PC membrane with gold coating (~30 nm).

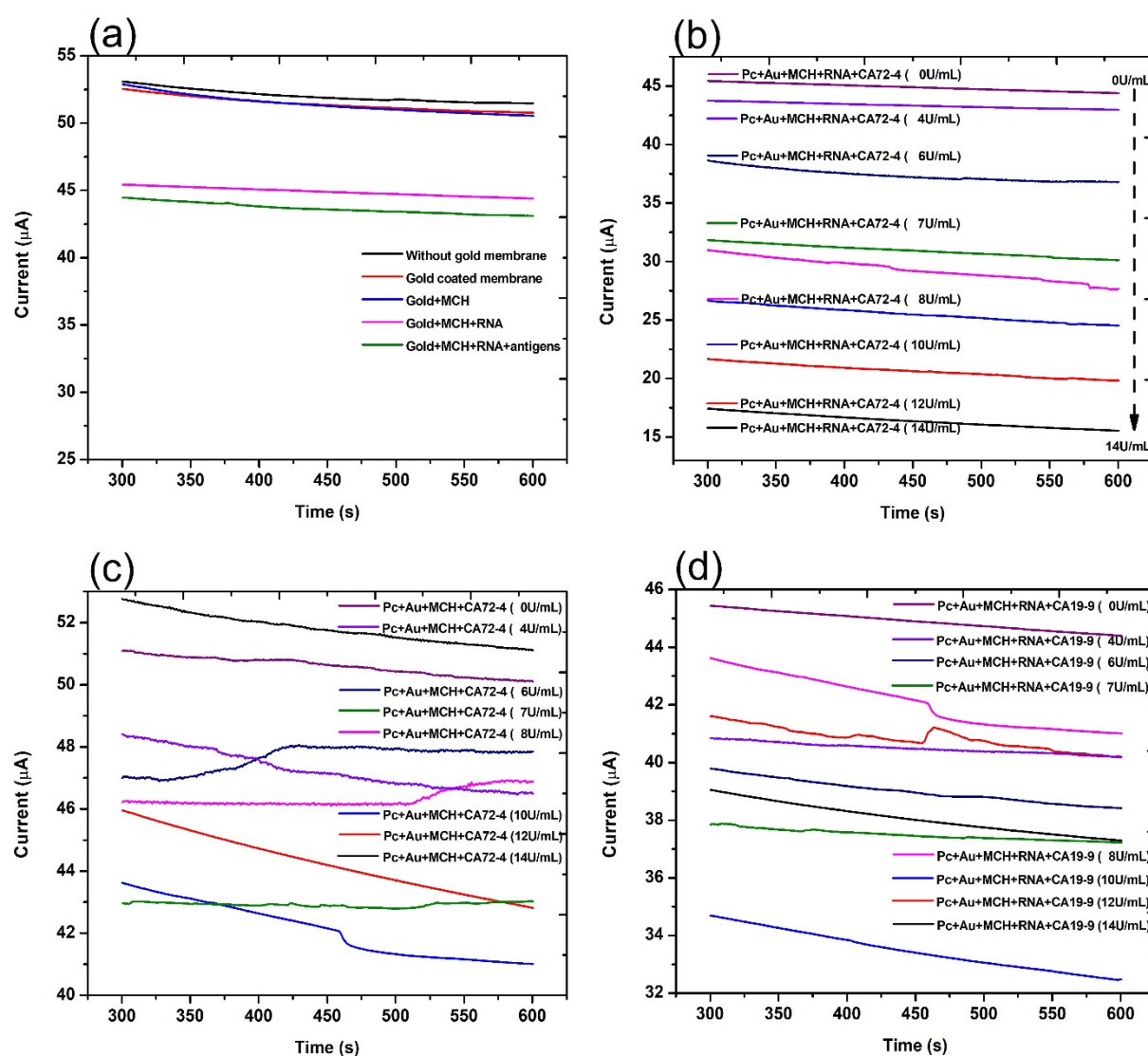


Figure S2. Current and time response graph for the mangified regions (a) Control background membrane. (b) Current and time response of sensing membrane. (c) Current and time electrical response of CA72-4 control membrane. (d) Current and time response of control CA19-9.

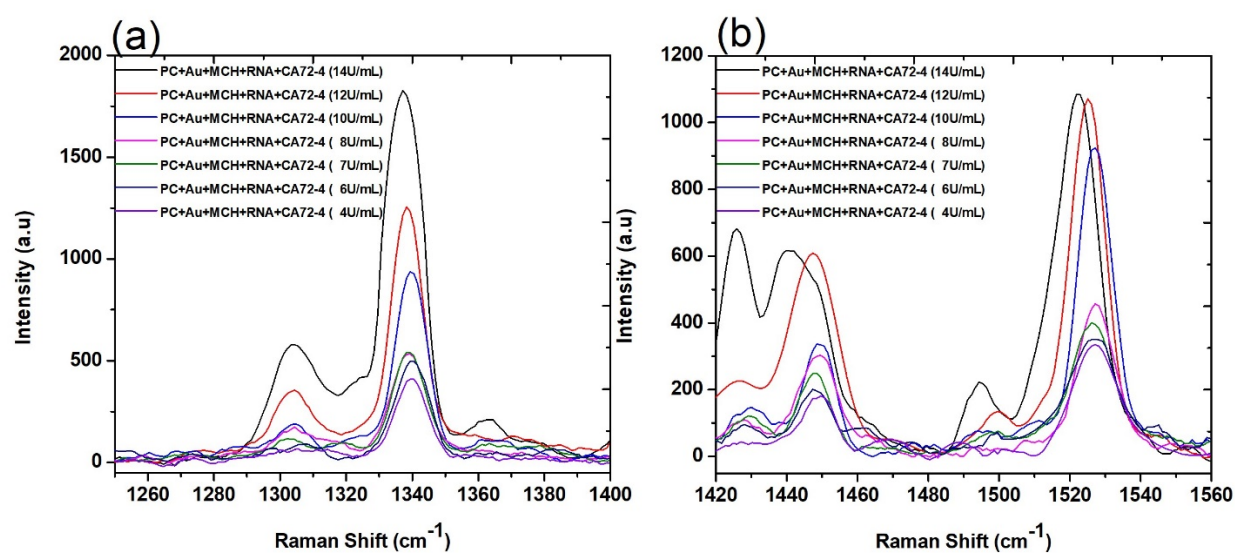


Figure S3. Raman spectra for magnified regions. (a) Raman shift spectra for 1250–1400 cm⁻¹ region. (b) Raman shift spectra for 1420–1600 cm⁻¹ region.