Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Development of an electrochemical sensor based on a cobalt oxide/tin oxide composite for determination of antibiotic drug ornidazole†

Chelliah Koventhan, Venkatachalam Vinothkumar, Shen-Ming Chen*

Department of Chemical Engineering and Biotechnology, College of Engineering, National Taipei University of Technology, No. 1, Chung-Hsiao East Road, Section 3, Taipei 10608, Taiwan.

***Corresponding Author:**

E-mail: smchen78@ms15.hinet.net (S-M Chen),

Fax: +886 2270 25238; Tel: +886 2270 17147.

Number of pages: 05

Number of figures: 05

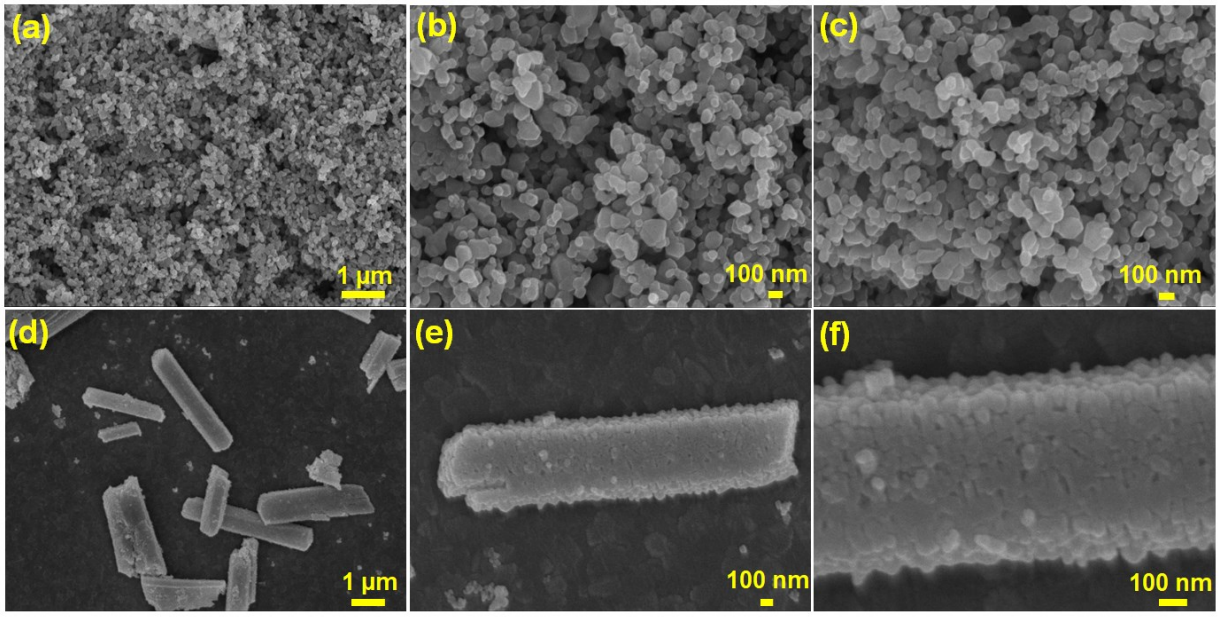

Fig. S1. Typical FESEM images of (a–c) Co_3O_4, and (d–f) SnO_2.

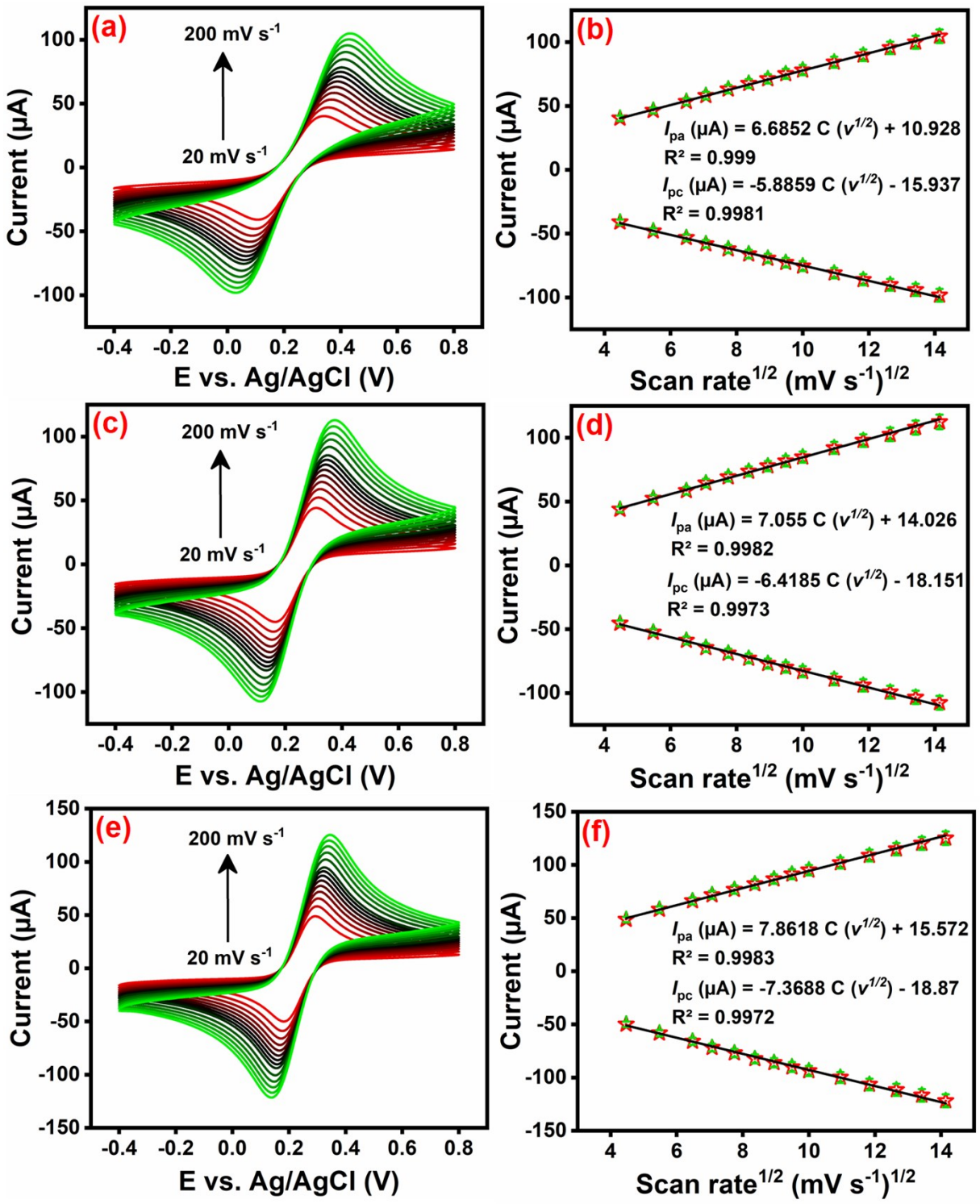

Fig. S2. The CV scan rates (from 20 to 200 mV s^{-1}) of (a) SnO_2/SPCE, (c) Co_3O_4/GCE, (e) Co_3O_4/SnO_2/GCE, and (c,d,f) plots show redox peak current *versus* square root of the scan rate. All the measurements were performed by 5.0 mM $[Fe(CN)_6]^{3-/4-}$ in KCl (0.1 M) solution.

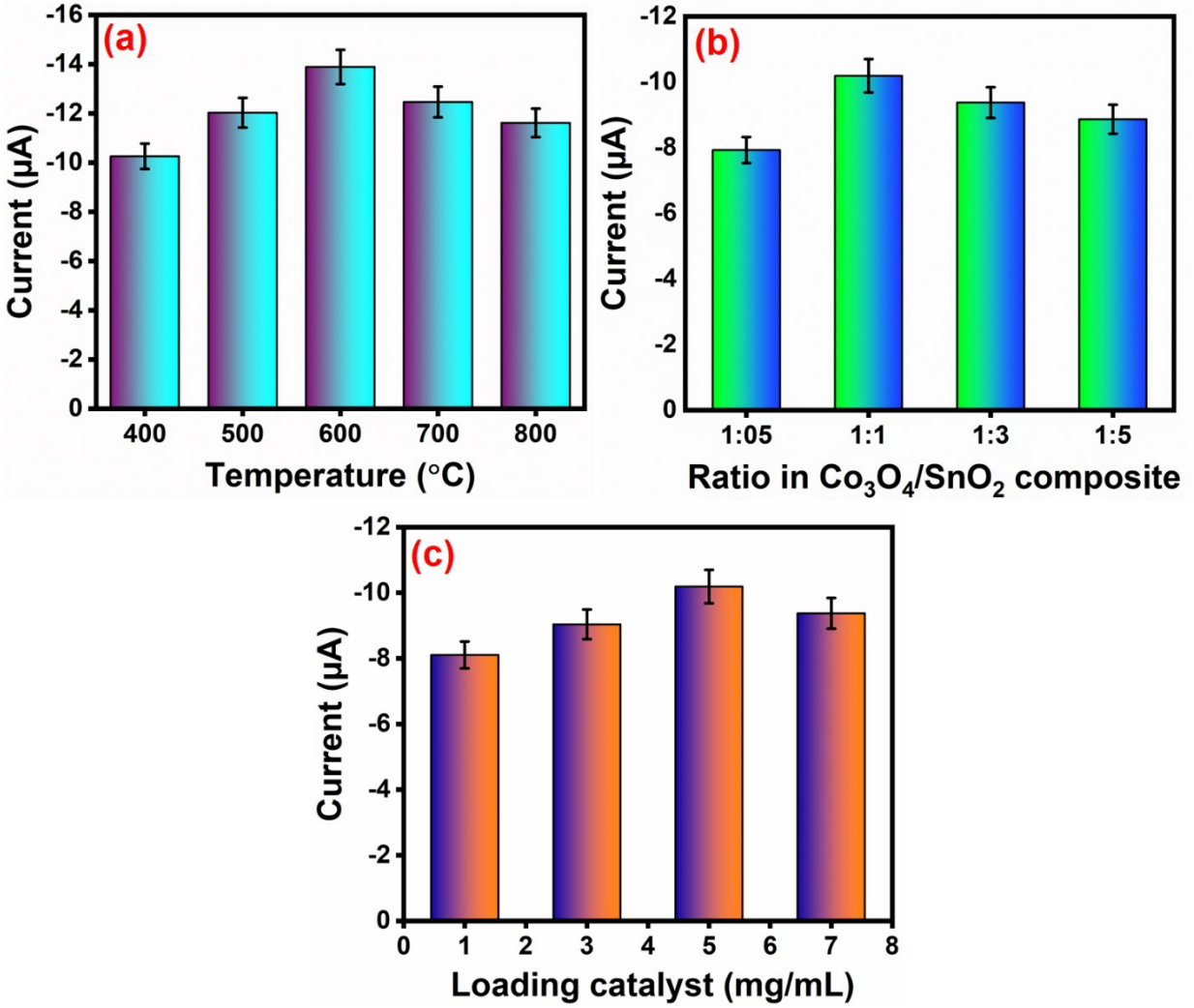

Fig. S3. (a) Temperatures variation of Co_3O_4/SnO_2 composite in 300 μM ODZ, (b) different concentration ratio of SnO_2 in composite towards detection of 200 μM of ODZ, and (c) various loading catalyst such as 1.0, 3.0, 5.0, and 7.0 mg/mL of Co_3O_4/SnO_2 composite for ODZ (200 μM). All the CV experiments were conducted in 0.05 M PBS (pH = 7.0) at 50 mV s^{-1}.

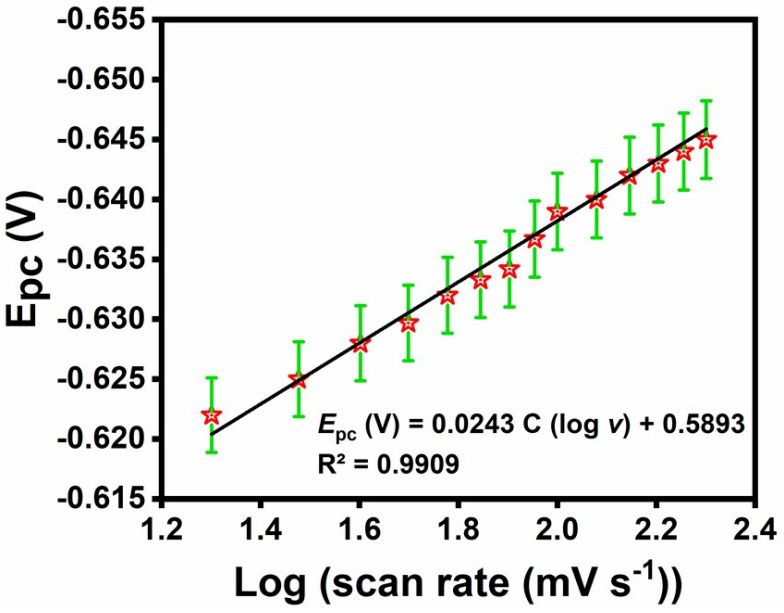

Fig. S4. Linear plot of reduction peak potential (E_{pc}) *versus* logarithmic of scan rate (log *v*).

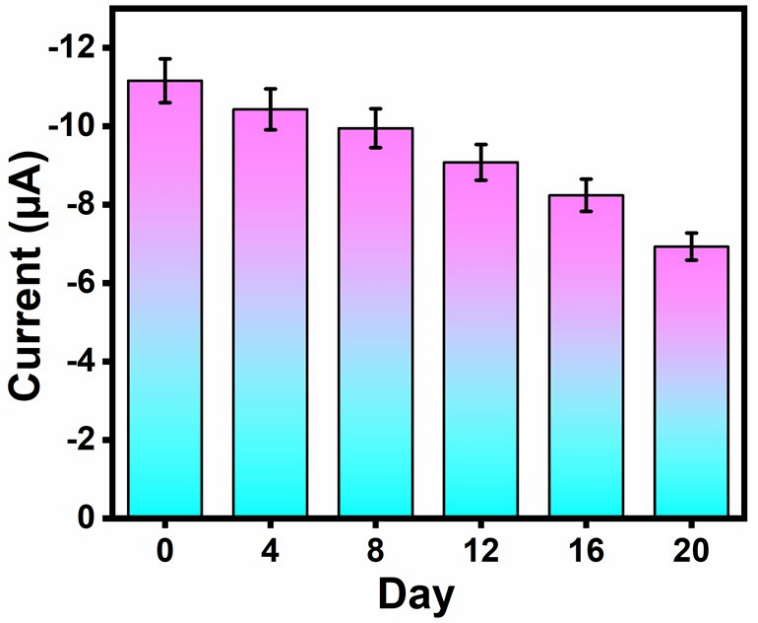

Fig. S5. Storage stability (over 20 days) at the Co_3O_4/SnO_2/GCE in the presence of 200 μM ODZ using 0.05 M phosphate buffer solution (pH = 7.0) at the potential scan rate of 50 mV s^{-1}.