

Electronic Supplementary Information (ESI)

Determination of chromium(III) by differential pulse stripping voltammetry at a chitosan-gold nanocomposite modified screen printed electrode

Shixin Wu,^a Nadia Chandra Sekar,^a Swee Ngin Tan,^b Hong Xie^a
and Sum Huan Ng^{*a}

^a Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore 638075, Singapore. E-mail: shng@simtech.a-star.edu.sg; Tel: +65 67938382 (Dr. Sum Huan Ng).

^b Natural Sciences and Science Education Academic Group, Nanyang Technological University, 1 Nanyang Walk, Singapore 637616, Singapore.

Fig. S1 Typical cyclic voltammogram of an unmodified SPE in 0.1 M acetate buffer (pH 5.0). Scan rate: 50 mV/s.

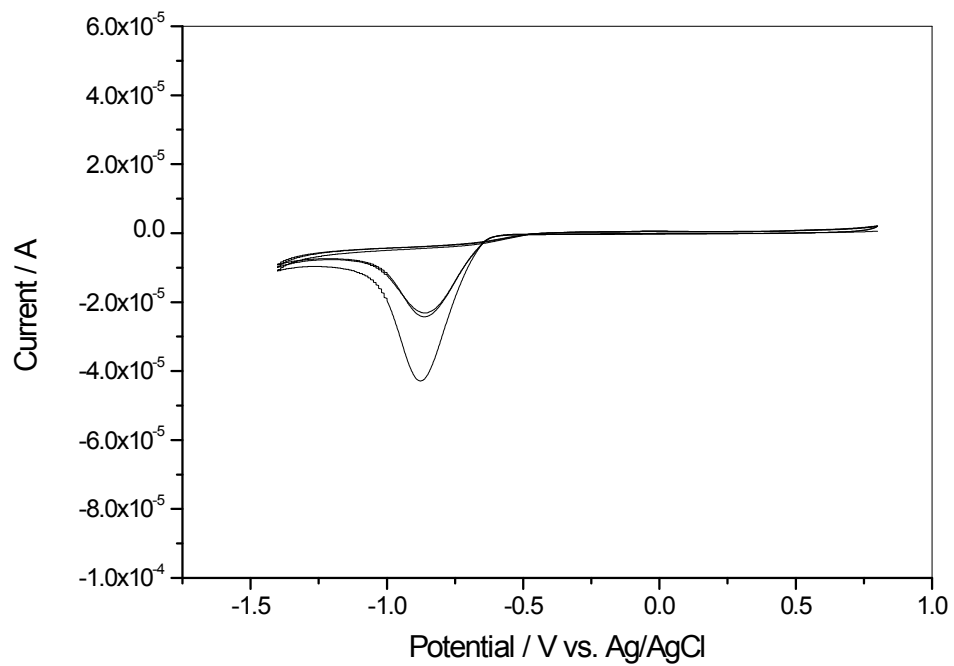


Fig. S2 Differential pulse stripping voltammograms of SPE (dashed line) and Au-SPE (solid line) in 0.1 M acetate buffer (pH 5.0). Accumulation potential: -1.3 V; accumulation time: 360 s. Pulse amplitude: 50 mV, pulse width: 0.05 s, sample period: 0.1 s, step size: 2 mV.

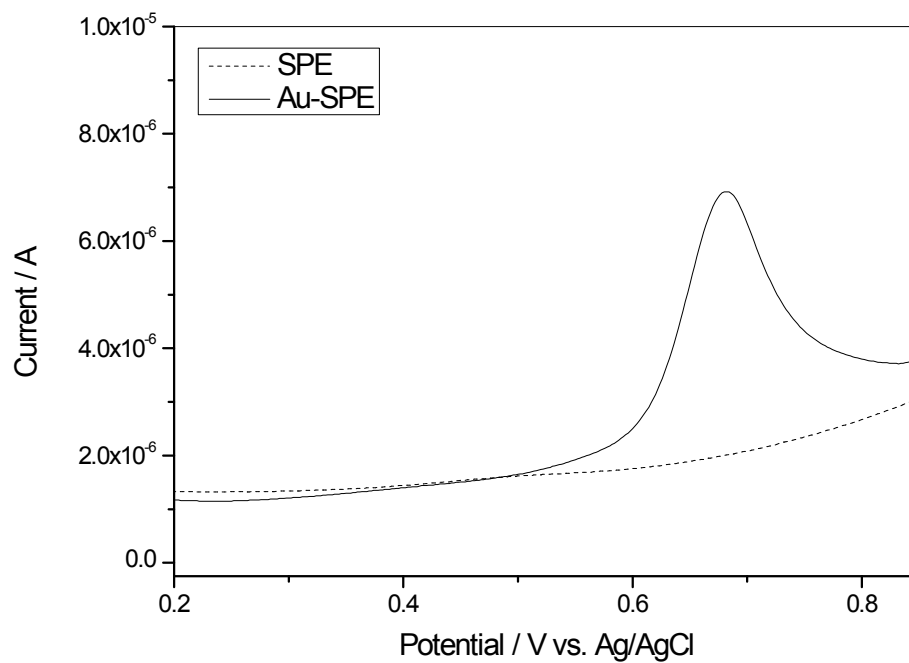


Fig. S3 SEM images of (A, B) bare SPE and (C, D) Chi-Au-SPE.

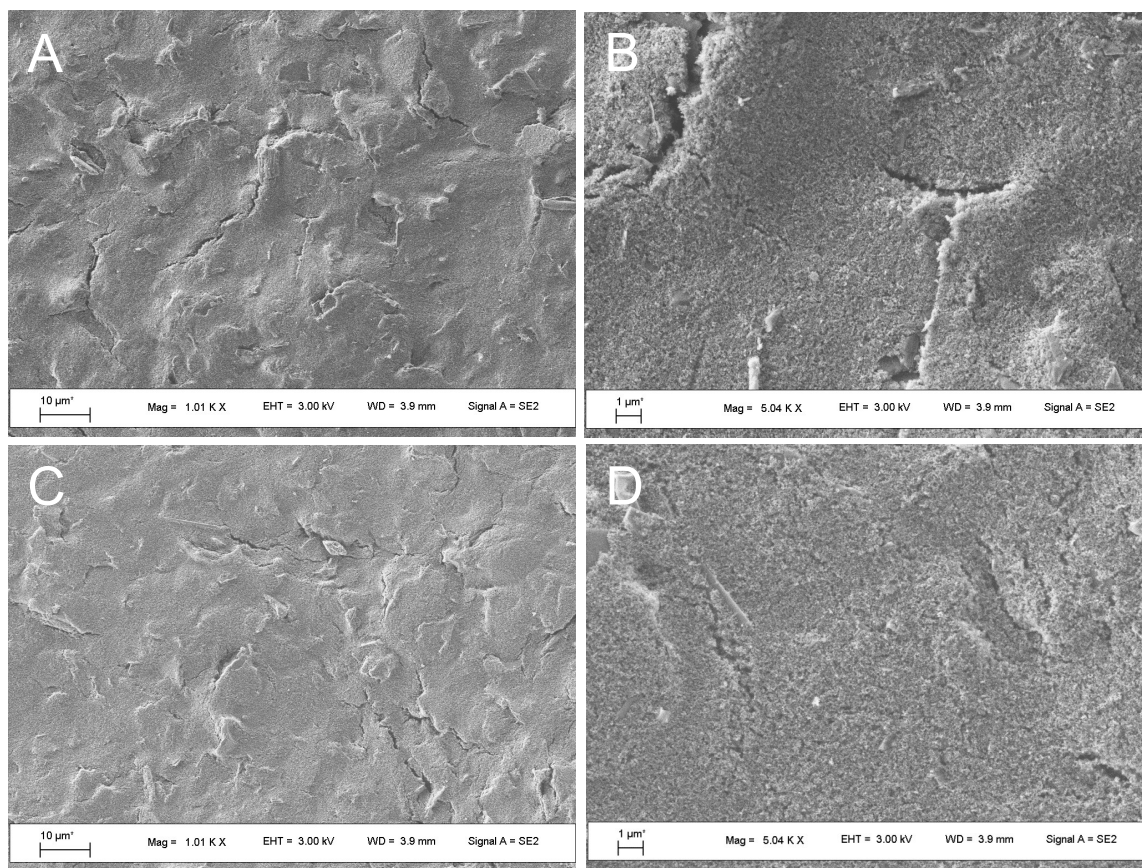


Fig. S4 XPS spectra of (A) bare SPE and (B) Chi-Au-SPE in the N(1s) region. The N signal was very weak in the XPS spectrum of bare SPE. The XPS spectrum of Chi-Au-SPE in the N(1s) region can be resolved into two peaks. The peaks at 399.4 eV, and 401.4 eV may be assigned to NH_2 and NH_3^+ , respectively, which confirms the depositon of chitosan on the SPE.

