**ABSTRACT**

In this paper we report on the synthesis and characterization of electrocatalytic conjugates of tetraamino cobalt (II) phthalocyanine and single walled carbon nanotubes (CoTAPc–SWCNT-linked) for use as electrode surface modifiers. FTIR, UV–vis and Raman spectroscopies were used to ascertain the chemical linkage between CoTAPc and SWCNT while cyclic voltammetry and rotating disk electrode voltammetry were used to assess the electrocatalytic efficiency of the linked product towards the oxidation of 2-mercaptoethanol. The CoTAPc–SWCNT-linked-GCE demonstrated very good catalytic efficiency relative to CoTAPc–SWCNT-mixed-GCE, CoTAPc-GCE and f-SWCNTs-GCE (functionalised SWCNT). CoTAPc–SWCNT-linked-GCE gave a sensitivity of 0.2 μA/μM and a limit of detection (LOD) of $1.2 \times 10^{-7}$ M for 2-mercaptoethanol (2-ME) at pH 4.