

Supplementary Materials

Polycrystalline cerium oxide based electrochemical sensor for hydrogen peroxide

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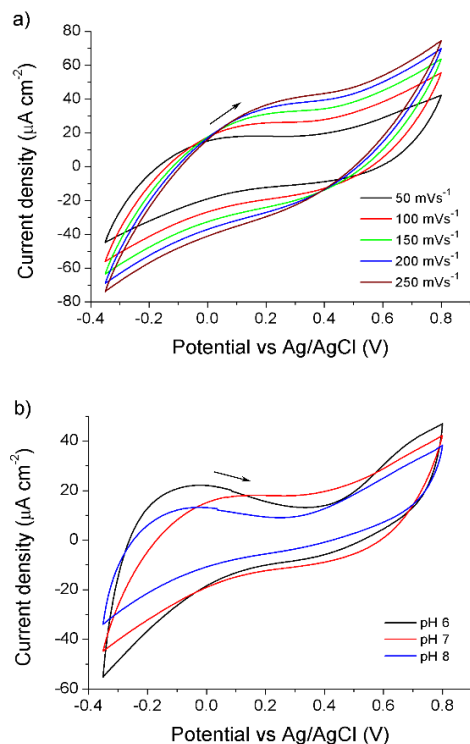


Fig. S1. The CV curves for the CeO₂/GC electrode in 10 mM PBS with 81.2 μM of H₂O₂ measured a) at different scan rates and pH 7 and b) at different pH and scan rate 50 mVs⁻¹.

The behaviour of the CeO₂/GC electrode as function of scan rates (from 50 to 250 mVs⁻¹) and different pH (from 6 to 8) was investigated in order to characterize the performance stability and kinetics of the electrochemical reactions in the working solution (see Fig. S1). With an increasing scan rate the CV curves maintaining the shape gradually increase in intensity, indicating surface controlled electrochemical behaviour [1]. The oxidation current values at 0.65 V observed in the CV curves change by about 5 μA cm⁻² at pH values between 6 and 8 at 25 °C, thus the CeO₂/GC electrode is considered stable under these conditions.

References

- [1] Bagotsky V. S., Fundamentals of Electrochemistry. 2nd Edn. Wiley, 2006.