

Electronic Supporting Material

Evaluation of different functional groups for covalent immobilization of enzymes in the development of biosensors with oxygen optical transduction

Teresa Ramon-Marquez^a, Antonio L. Medina-Castillo^{b,*}, Jorge F. Fernandez-Sanchez^{a,*}, and Alberto Fernández-Gutiérrez^a

^aDepartment of Analytical Chemistry, University of Granada, Avda. Fuentenueva s/n, 18071 Granada, Spain

^bNanoMyP[®], Nanomateriales y Polimeros S.L., Spin-Off company of the UGR, BIC building, Avd. Innovacion 1, E-18016, Granada, Spain

*Corresponding author: Tel: +34958240451 Fax: +34958243328. E-mail: jffernan@ugr.es (J.F. Fernandez-Sanchez), amedina@nanomyp.com (A.L. Medina-Castillo)

Index

Fig. ESI-1. Optimization of the EPD parameters for the deposition of the oxygen-sensitive particles.

Fig. ESI-2. Optimization of the EPD parameters for the deposition of the enzyme functionalized particles.

Fig. ESI-3. Comparison of the glucose sensing chips obtained with PolymP[®]-H, PolymP[®]-Cl, PolymP[®]-Link and PolymP[®]-Epoxy.

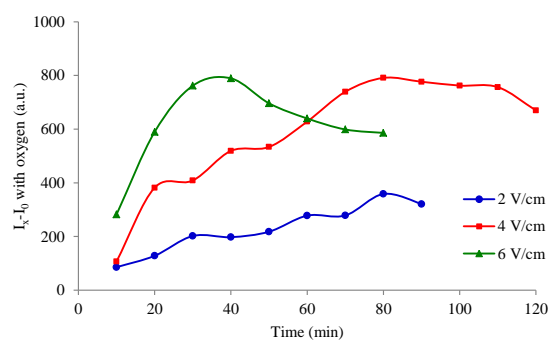


Fig. ESI-1. Variation of the signal response of the oxygen sensitive particles onto a golden chip versus deposition time at different deposition voltages in the determination of 8 ppm O₂ solubilized in water at RT. $\lambda_{exc/em}=395/650$ nm, slits width_{exc/em}= 20/20 nm, decay time 200 μ s, gate time 5 ms, detector voltage 600 V.

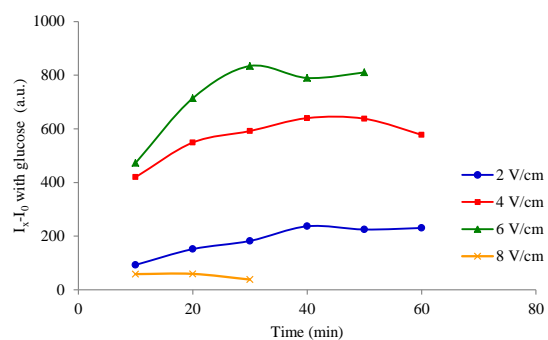


Fig. ESI-2. Variation of the signal response of the GOx functionalized particles onto oxygen-sensitive functionalized gold chip versus deposition time at different deposition voltages. [Glucose]= 100 mg mL⁻¹, $\lambda_{exc/em}=395/650$ nm, slits width_{exc/em}= 20/20 nm, decay time 200 μ s, gate time 5 ms, detector voltage 600 V.

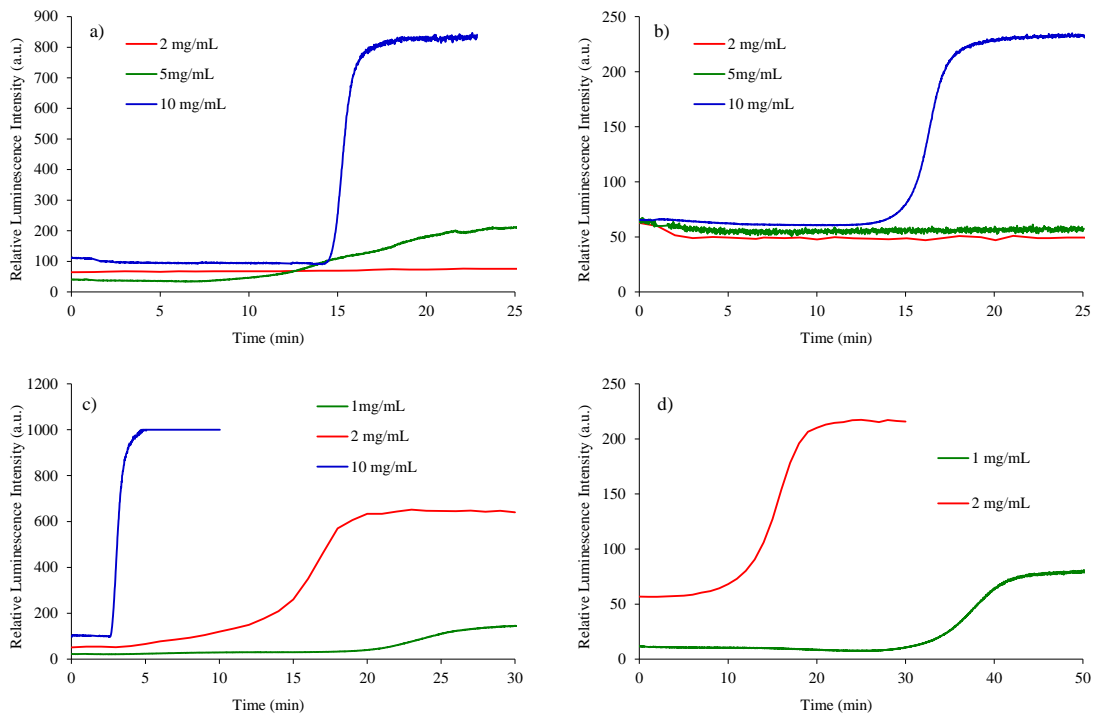


Fig. ESI-3. Response of the chips functionalized with a) PolymP[®]-H, b) PolymP[®]-Cl, c) PolymP[®]-Link and d) PolymP[®]-Epoxy and oxygen-sensitive particles in the determination of glucose.