

## عنوان مقاله:

A survey upon Direct electrocatalysis of hemoglobin in a multilayer {nanosilver=PDDA}<sub>n</sub> inorganic-organic hybrid film

## محل انتشار:

اولین کنفرانس ملی کاربرد نانو تکنولوژی در صنایع نفت و پتروشیمی (سال: 1391)

تعداد صفحات اصل مقاله: 4

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## خلاصه مقاله:

A new amperometric biosensor for hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) has been developed that is based on direct electrochemistry and electrocatalysis of hemoglobin (Hb) in a multilayer inorganic-organic hybrid film. o-Phenylenediamine (PDA) was electro-polymerized onto a glassy carbon electrode (GCE), and then negatively charged nanosilver particles and positively charged poly (diallyldimethylammonium chloride) (PDDA) were alternately assembled on the PDA=GCE surface. Finally, Hb was electrostatically adsorbed on the surface of silver nanoparticles. The electrochemical behavior of the resulting biosensor (Hb={nanosilver=PDDA}<sub>n</sub>=PDA=GCE) was assessed and optimized. The performance and factors influencing the biosensor were studied in detail. Under optimal conditions, the immobilized Hb displayed good electrocatalytic response to the H<sub>2</sub>O<sub>2</sub> reduction ranging from 1.3 mM to 1.4 mM with a detection limit of 0.8 mM. In addition, the biosensor exhibited rapid response, good reproducibility, and long-term stability

## کلمات کلیدی:

Direct electrochemistry; silver nanoparticles; hemoglobin biosensor; multilayer inorganic-organic hybrid film

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/179504>

