

## Accepted Manuscript

Title: Electroanalysis of Hydrogen Peroxide at Boron Doped Diamond Electrode Modified by Silver Nanoparticles and Haemoglobin

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PII: S0013-4686(15)30079-7  
DOI: <http://dx.doi.org/doi:10.1016/j.electacta.2015.07.013>  
Reference: EA 25290

To appear in: *Electrochimica Acta*

Received date: 10-4-2015  
Revised date: 30-6-2015  
Accepted date: 3-7-2015

Please cite this article as: Luyun Jiang, Jingping Hu, John S Foord, Electroanalysis of Hydrogen Peroxide at Boron Doped Diamond Electrode Modified by Silver Nanoparticles and Haemoglobin, *Electrochimica Acta* <http://dx.doi.org/10.1016/j.electacta.2015.07.013>

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# Electroanalysis of Hydrogen Peroxide at Boron Doped Diamond Electrode Modified by Silver Nanoparticles and Haemoglobin

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**Keywords** Hydrogen peroxide; Boron doped diamond electrode; Silver nanoparticles; Haemoglobin;

**Abstract** The electrochemical detection of H<sub>2</sub>O<sub>2</sub> using boron doped diamond electrode modified by silver nanoparticles and haemoglobin is reported. Silver nanoparticle obtained from electrodeposition in the presence of cetyl hexadecylthmonium bromide (CTAB) surfactant shows the best combination of detection limit, sensitivity and reproducibility. The presence of Ag nanoparticles helps bind haemoglobin to the electrode in an active form, leading to a significantly further increase of electrode response to H<sub>2</sub>O<sub>2</sub>. Detection limits below 1 μM are achieved by a synergistic effect of both modifiers, and a good linear signal response is seen up to 8 mM. Interferences from glucose, uric acid, ascorbic acid and dopamine at typical physiological levels are shown to be negligible.

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