

Thesis Title	Preparation of Carbon Nanotube Films by Electrophoretic Deposition for Use as Electrochemical Sensors
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ABSTRACT

In this research, carbon nanotubes CNT films were prepared on copper substrates by electrophoretic deposition (EPD) method. EPD is a convenient, simple and cost-effective technique to fabricate CNT films. The films were prepared by using electric fields, which were applied between two electrodes in a range of 5-50 V and deposition times of 5, 10, 20 and 30 min.

The films thickness increased with increasing of the applied voltages and the deposition times. Oxidation of hydrogen peroxide (H_2O_2) were measured by a cyclic voltametry and amperometric. The prepared conditions for a maximum signal of cyclic voltametry were found at electrode potential of 30 V and deposition time of 10 min. Moreover, linear amperometric result from 0.4 to 2.99 mM of H_2O_2 was obtained. However, the amperometric signals from films was unstable and delayed the response time (40-60 sec) compared with from carbon screen-printed electrode (10 – 20 sec). But the films could be applied to detect the H_2O_2 with higher electrical signal.