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# Electrochemical determination of 4-nitrophenol using uniform nanoparticle film electrode of glass carbon fabricated facilely by square wave potential pulses

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## Highlights

1. Uniform nanoparticle film of GC was easily prepared by square wave potential pulses.
2. The fabrication involves repeated anodic oxidation of smooth GC in NaOH solution.
3. The thin film decorated with functional groups showed high electrochemical activity.
4. The effects of preparation parameters on CV behaviors of 4-NP were investigated.
5. The film exhibited good performances for voltammetric determination of 4-NP.

## Abstract

Voltammetric determination of 4-nitrophenol (4-NP) has been preformed at uniform nanoparticle film electrode (UNFE) of glass carbon (GC) (GC-UNFE). The

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