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## Calculation of Diffusion Coefficients and layer thickness for Oxidation of ferrocene derivative at two different electrodes using (RDE) voltammetry

Salah Neghmouche Nacer and Touhami Lanez \*

\*University of El Oued, VTRS Laboratory, B.P.789, 39000, El Oued, **ALGERIA**

Email: [nasersaleh78@yahoo.fr](mailto:nasersaleh78@yahoo.fr)

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### ABSTRACT

*The electrochemical behavior of N'-Ferrocenylmethyl-N'-Phenylbenzohydrazide synthesized is studied by Rotating Disk Electrode (RDE) Voltammetry to study the kinetics of oxidation and the effect of hydrazide group on ferrocene in organic medium. Thus, two different electrodes (Pt and Gc) were used in order to determine this latter. According to the ferrocene taken as a witness the hydrazide group related to the ferrocene made oxidation more difficult. This ferrocenic derivative showed an electrochemical stability, a reversible electrochemical system and an electronic attractor effect of these substitutional ferrocene groups. Finally, we calculated some electrochemical parameters which were: the diffusion coefficients (D), the layer thickness ( $\delta$ ) in addition to the electron transfer rate.*

**Keywords:** Rotating Disk Electrode (RDE), diffusion coefficient, ferrocene derivative, half-wave potential, Randles-Sevcik equation.

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