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27 HSKIKI

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2021

**27th CROATIAN MEETING
OF CHEMISTS AND CHEMICAL ENGINEERS**

WITH INTERNATIONAL PARTICIPATION • 5th SYMPOSIUM "VLADIMIR PRELOG"
5-8 OCTOBER 2021 • VELI LOŠINJ, HOTEL PUNTA, CROATIA

BOOK OF ABSTRACTS



27th CROATIAN MEETING OF CHEMISTS AND CHEMICAL ENGINEERS
27. HRVATSKI SKUP KEMIČARA I KEMIJSKIH INŽENJERA
5–8 October 2021, Veli Lošinj, Croatia

27th Croatian Meeting of Chemists and Chemical Engineers

with international participation

5th Symposium Vladimir Prelog

5 – 8 October 2021

Veli Lošinj, Vitality Hotel Punta, Croatia

BOOK OF ABSTRACTS

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ANODIC PRETREATMENT OF CARBON GRAPHENE PASTE MODIFIED SCREEN PRINTED ELECTRODE FOR ENHANCING THE ELECTROCHEMICAL SENSING CHARACTERISTICS

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Graphene is emerging as a material with extraordinary physical and chemical properties. Due to its electrochemical properties, it offers vast potential applicability as an effective electrode material.^[1] With anodic pretreatment, it is possible to enhance the electrochemical sensing properties of graphene-modified electrodes. In the present study, electrochemical sensing properties of graphene-modified screen printed electrodes are investigated before and after anodic pretreatment of the electrode. The prepared electrode is electrochemically characterized by cyclic voltammetry and electrochemical impedance spectroscopy. The electrode surface is investigated by scanning electron microscopy, energy dispersive X-ray spectroscopy, and Raman spectroscopy. The heterogeneous electron transfer rate and capacitance is calculated from obtained cyclic voltammograms and electrochemical impedance spectroscopy respectively. Both values are compared before and after anodic pretreatment.

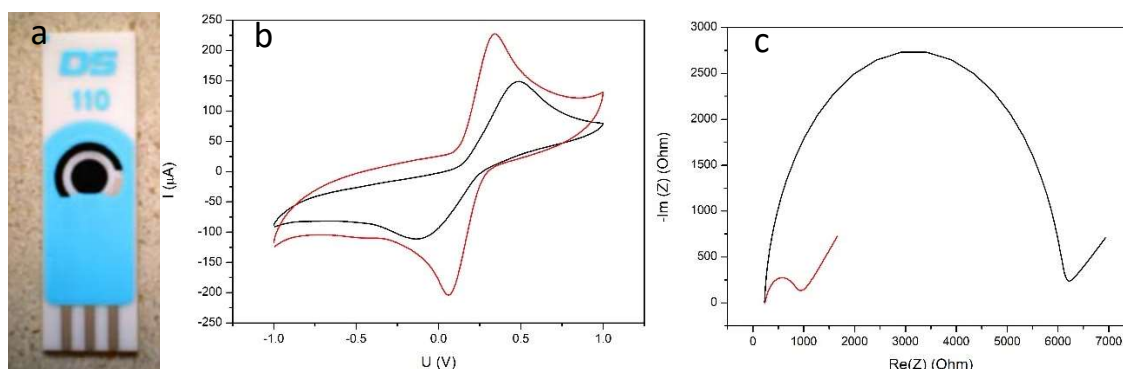


Figure 1. a) Image of used screen printed electrode, b) cyclic voltammograms, and c) Nyquist plots obtained with screen printed electrode before anodic pretreatment (—) and after anodic pretreatment (—).

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- [1] D. A. C. Brownson, C. W. Foster, C.E. Banks, *Analyst* **2012**, *137*, 1815.-1823.