



&

**8<sup>th</sup> Kurt Schwabe Symposium**

# **Book of Abstracts**

**May 27 – 30, 2019, Split, Croatia**

**7<sup>th</sup> Regional Symposium on Electrochemistry – South East Europe**

**&**

**8<sup>th</sup> Kurt Schwabe Symposium**

*Split, Croatia, May 27-30, 2019*

## **Book of Abstracts**

*Published by*

**International Association of Physical Chemists**

*E-mail: [office@iapchem.org](mailto:office@iapchem.org), URL: <http://www.iapchem.org>*

For Publisher

**Zoran Mandić**

Editors

**Višnja Horvat-Radošević, Krešimir Kvastek, Zoran Mandić**

Design, Page Making and Computer Layout

**Aleksandar Dekanski**

ISBN 978-953-56942-7-4

On Line version only

### Ni-Sn coating as electrocatalyst for ethanol oxidation in alkaline solution

Jelena Lović, Vladimir Jović<sup>1</sup>

ICTM, Department of Electrochemistry, University of Belgrade, Njegoševa 12, 11000, Belgrade, Serbia

<sup>1</sup> Institute for Multidisciplinary Research, University of Belgrade, Kneza Višeslava 1, 11030, Belgrade, Serbia

[jelena.lovic@ihm.bq.ac.rs](mailto:jelena.lovic@ihm.bq.ac.rs)

Ni-Sn alloy coating was deposited galvanostatically at  $j = -100 \text{ mA cm}^{-2}$  from the bath containing  $0.1 \text{ M Sn}^{2+}$  and  $0.1 \text{ M Ni}^{2+}$  ions in the pyrophosphate-glycine solution [1]. The coating sample was investigated for ethanol oxidation reaction (EOR) in alkaline solution using cyclic voltammetry (Fig. 1). Chronoamperometric measurements were used to determine the electrocatalyst stability. The presence of Sn can contribute to the oxidation of the EOR products that poisons the Ni surface sites. Also the presence of Sn atoms within the Ni structure, modifies the electronic density of states of Ni, thus preventing strong binding of poisoning species. This work represents a recommendation in developing cost-effective electrocatalyst with high activity and stability for EOR in DEFCs.

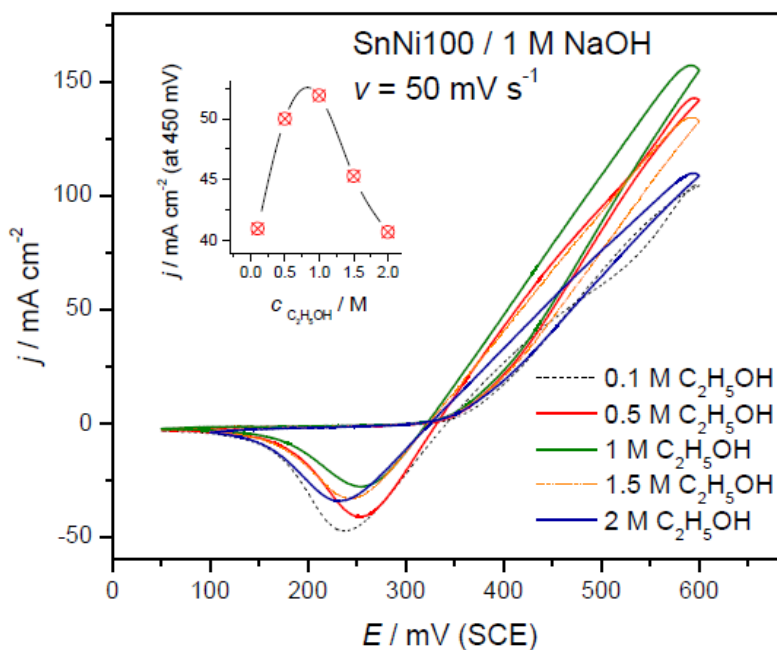


Fig. 1. CVs of Ni-Sn alloy coating in 1 M NaOH recorded for different concentrations of ethanol. Scan rate  $50 \text{ mV s}^{-1}$

This work was financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Project No.172060)

#### References

1. V.D. Jović, U. Lačnjevac, B.M. Jović, Lj. Karanović, N.V. Krstajić, *Int. J. Hydrogen Energ.* 37 (2012) 17882-17891 (<http://dx.doi.org/10.1016/j.ijhydene.2012.09.110>)