15ST063 Development of electrochemical nano-biosensors with distributed metal particles

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A new concept of hybrid nano-biosensors was developed based on well-defined methacrylic diblock copolymers and metal nanoparticles (Au and Pd). The nano-composite systems were used as surfactant for modified carbon electrodes. The electrochemical characterization (Potentiostat/Galvanostat method) was performed by using reference redox molecules in order to test the sensors sensitivity and reproducibility at different concentrations of dopamine in acid medium (0.1 M HCl). It was shown that the functionalization of carbon electrodes with well-defined electrically active diblock copolymers and metal nanoparticles offer superior metrological performance for neurotransmitters analyze, comparing to conventional electrodes.
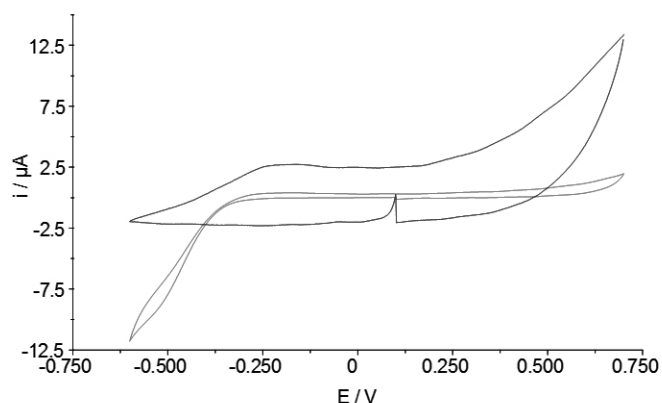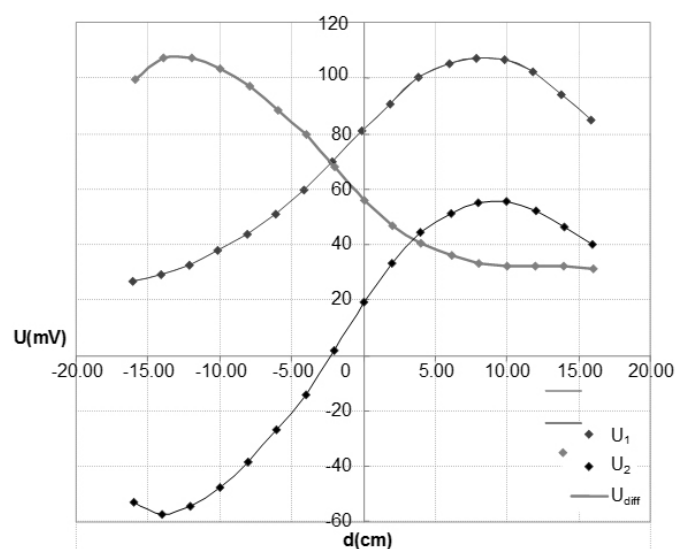

behavior of hybrid electrode (blue line), comparing to simple carbon electrodes (red line), both functionalized in the presence of dopamine

15ST070 Landslide transducer based on amorphous wire strain gauges

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The paper presents a landslide transducer based on amorphous wire strain gauges. It has as sensitive elements 4 such strain gauges. They are connected in a Wheatstone bridge powered with a 1 MHz sine wave. The voltages from the two arms of the bridge are amplified and peak detected. The transducer is build around a low power microcontroller. The voltages from the peak detector are converted into digital and the displacement and the direction are computed and corrected. The result is sent via the serial interface toward a central unit. The originality of the paper consists of the use of such strain gauges as sensitive elements and processing of the signals. The results show a higher sensitivity and the possibility to detect the direction of the displacement.

Experimental results