NEW APPROACHES PREVENTING PASSIVATION IN MONITORING OF ENVIROMENTAL ORGANIC POLLUTANTS

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The aim of this project is to find a new material or a new preparation method which will eliminate potential passivation of the electrodes used for monitoring pollutants so that the electrode can be reusable. Resistance toward passivation together with a high ability to detect the pollutants (phenols, aromatic amines and nitrocompounds, dyes, drugs, etc.) are the reasons why various methods of porous silver preparation have been studied.
The most promising method seems to be the fabrication from powder silver with NH_4HCO_3 as a space holder in a weight ratio 4 : 1. The powders were compacted before sintering and subsequently various sintering methods were observed. The sample sintered in the furnace was brittle but contained predominantly macropores however some of them were destroyed while polishing resulting into occurrence of few aggregated micropores in the surface layer.
The problem still to be solved is the imperfect decomposition of the space holder, which remains in the structure and can lead to the unexpected material behaviour.

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