

Electroanalytical analysis of glassy carbon electrode modified with COOH- and NO₂-functionalized polyspyrophosphazenes

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Glassy carbon electrode modified with COOH- and NO₂-functionalized polyspyrophosphazenes were used to study the redox process of a electroactive probe (ferrocene) in non-aqueous electrolyte. The electrochemical behavior of polyphosphazenes substituted with COOH and NO₂ groups has been studied using cyclic voltammetry. Their blocking properties depend on the substituent group and on the substitution/nitration degree. The oxoreduction of the couple Fc/Fc⁺ occurs with rapid redox kinetic at the modified glassy carbon electrode with high nitration degree NO₂-functionalized polyspyrophosphazene. The polymers were immobilized on the glassy carbon surface at different concentrations to study surface charge density effect. In this report were studied the reproducibility, repeatability and stability of the modified electrodes.

Blocking effect

Cyclic voltammetry

Ferrocene

Functionalized polyphosphazenes

Modified electrode