Abstract

This thesis is concentrated on the optimization of conditions for determination of genotoxic environmental pollutants whitch belong to derivatives of polycyclic aromatic hydrocarbons – 1-nitropyrene (1-NP), 1-aminopyrene (1-AP) and 1-hydroxypyrene (1-HP). All three compounds were determined by differential pulse voltammetry (DPV) at boron-doped diamond film electrode in water-methanolic solutions. Further, 1-AP and 1-HP were determined in a model sample of urine. For this purpose, effective separative techniques such as solid phase extraction and high performance liquid chromatography with reverse phase and amperometric detection at above mentioned type of electrode were used. Limits of detection of all tested compounds in water-methanolic solutions are $9 \cdot 10^{-8}$–$3 \cdot 10^{-7}$ mol dm^{-3} using DPV and $1 \cdot 10^{-8}$ mol dm^{-3} for 1-HP and 1-AP in model sample of urine determined by HPLC with amperometric detection.