

DOCTORAL THESIS

-abstract-

**MODERN METHODS FOR DETERMINATION OF THE COMPOUNDS OF
BIOMEDICAL INTEREST**

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In recent years there has been observed a progressive evolution of the development of innovative methods for determination of different compounds of biomedical interest such as sweeteners (aspartame, acesulfame K and sodium cyclamate), β -carotene, melatonin, α -amylase, tumor markers (CEA and p53) that plays an important role in finding the unknown amount of compounds in food samples, biological fluids and waste water samples, having a substantial contribution to improve food quality control and also to make an early prediction of certain diseases or to establish a proper diagnosis. The PhD thesis aimed to develop modern methods for determination of the compounds of biomedical interest based on stochastic sensors designed with different functional materials (carbon, graphene, reduced oxide graphene, diamond), using electroactive materials (gold nanoparticles, porphyrins, cyclodextrins, 2,2-diphenyl-1-picrylhydrazyl) and chromophore substances such as (Rhodamine B, Fluorescein). The analysis of biomedical compounds was performed from biological, food and waste water samples, using stochastic and fluorescence methods.