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### Immobilization of Macrocyclic Compounds with the Purpose of Development of Ion-Selective Electrode for Definition of Rare-Earths Metals

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## IMMOBILIZATION OF MACROCYCLIC COMPOUNDS WITH THE PURPOSE OF DEVELOPMENT OF ION-SELECTIVE ELECTRODE FOR DEFINITION OF RARE-EARTHS METALS

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The chemistry of macrocyclic compounds is one of the fastest developing areas of chemical researches. Objects of research served calix[4]resorcinarene ( $n = 4$ ,  $R = \text{CH}_2\text{--N}(\text{CH}_3)\text{--CH}_3\text{--(O)P(OC}_2\text{H}_5)_2$ ;  $R_1 = \text{CH}_3$ ) — one of representatives the class of macrocyclic receptors formed by *para*-substituted phenolic units linked *ortho* by methylene groups<sup>1</sup> and N,N'-bis-(diisopropoxythiophosphoryl amidothiocarbonyl)-1,10-diaza-18-crown-6 — one of representatives of crown containing thiophosphorylated elementoorganic compounds.<sup>2</sup> The methods of immobilization calix[4]resorcinarene on nitrocellulose film and N,N'-bis-(diisopropoxythiophosphoryl amidothiocarbonyl)-1,10-diaza-18-crown-6 on acetylcellulose film was developed. Their methods were based on mechanical incorporation of organoelement compounds into nitro- or acetylcellulose film with usage of organic solvents and covalently binding glutaraldehyde. The concentrations for immobilization were  $1 \times 10^{-5}$  and  $1 \times 10^{-4}$  M. The data of spectrophotometry at 250–300 nm at the presence of different buffer solutions with pH 4.1–9.7 were showed, that both of this compounds retained cellulose matrix strongly. These results can be used for development ion-selective electrode for definition of metal ions.

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