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INTERAKCIJA Zn(II) JONA SA HUMINSKOM KISELINOM I MODELIMA HUMINSKIH SUPSTANCI

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Kompleksiranje Zn(II) jona huminskom, benzoevom i salicilnom kiselinom ispitivano je pomoću Šubertove jonoizmenjivačke metode. Ispitivanje je izvršeno na pH 4.0, temperaturi od 25°C i pri konstantnoj jonskoj jačini od 0.01 (NaCl) pomoću Dowex 50WX8 jonoizmenjivačke smole, 100-200 mesh, Na+ forma. Nagib krive log (D_0/D)-1 vs. log cL korišćen je za određivanje sastav kompleksa, odnosno odnosa metal ligand. Vrednost nagiba *n* približno 1 pokazuje da je stehiometrijski sastav kompleksa 1:1. Utvrđeno je da Zn(II) formira mononuklearne komplekse sa benzoevom i huminskom kiselinom. Vrednost nagiba oko 2 za interakciju Zn(II) sa salicilnom kiselinom pokazuje da Zn (II) sa ovim ligandom formira kompleks u kome je odnos metal:ligand 1:2. Dobijene vrednosti logaritma konstante stabilnosti, log K, za komplekse Zn(II) jona sa ispitivanim ligandima pokazuju sledeći redosled jačine kompleksiranja: salicilna kiselina > huminska kiselina > benzoeva kiselina. Dobijene vrednosti log K za komplekse sa benzoevom, salicilnom i huminskom kiselinom su 1,03, 6,39 i 2,23, respektivno. U nastojanju da se bolje razume i kvantifikuje interakcija huminske kiseline sa metalima, salicilicna i benzoeva kiselina su korišćene kao njeni model ligandi.

THE INTERACTION OF Zn(II) ION WITH HUMIC ACID AND HUMIC-MODEL LIGANDS

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The complexation of humic, benzoic and salicylic acid with Zn(II) was investigated by Schubert's ion-exchange method. The analysis was done at pH 4.0, at the temperature of 25 °C and at an ionic strength of 0.01 (NaCl) by using Dowex 50WX8 exchange resin, 100-200 mesh, Na+ form. Slopes of curves log (D_0/D)-1 vs. log c_L was used for the determination of metal-ligand ratios. The values of *n* near 1 indicate that stoichiometries of the complexes are 1:1. It was found that Zn(II) formed mononuclear complexes with benzoic acid humic acid. The value of the slope near 2 for the interaction of Zn(II) and salicylic acid indicates that Zn(II) forms the complex with 1:2 metal:ligand ratio. The obtained values for log K for Zn(II) complexes with investigated ligands show the following sequence of the complex strength: salicylic acid > humic acid > benzoic acid. The obtained values of log K for complexes with benzoic, salicylic and humic acid are 1.03, 6.39 and 2.23, respectively. In an effort to understand and quantify humic-metal interactions, salicylic and benzoic acid were used in the study of complexation properties of humics.