

Functional properties of composite sorbents "cation exchanger KU-2×8-metal sulfide"

© Artem E. Bobylev,¹ Vyacheslav Ph. Markov,^{1,2*}

Larisa N. Maskaeva,^{1,2+} and Sergey A. Evtyuhov¹

¹ Department of Physical and Colloidal Chemistry. Ural Federal University
named after the First President of Russia B.N. Yeltsin. Mira St., 19. Ekaterinburg, 620002.

Sverdlovsk Region. Russia. Phone: +7 (343) 375-93-18. E-mail: mln@ural.ru

² Department of Chemistry and Combustion Processes. Ural Institute of Ministry for Emergency Situations
of Russia. Mira St., 22. Ekaterinburg, 620022. Sverdlovsk Region. Russia. Phone: +7 (343) 360-81-68.

*Supervising author; +Corresponding author

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Abstract

The sorption properties of composite sorbents based on strong-acid cation resin KU-2×8 and immobilized in its matrix copper(II), zinc, lead sulfides: KU-2×8–CuS, KU-2×8–ZnS and KU-2×8–PbS was studied. Potentiometric titration of composite sorbents revealed their bifunctional nature, determined dissociation constants values and total capacity of ionic groups. It is shown that full dynamic adsorption capacity of the studied compositions is 1.5-2.0 times higher as compared to a universal cation exchanger KU-2×8 for copper(II), zinc, cadmium at more intensive process kinetics. Synthesized sorbents demonstrated explicit selectivity for copper(II) in presence of trace electrolyte, its uptake under these conditions is 1.3-4.5 times higher than that of cation exchanger KU-2×8.