

Detection of amino acids in solutions by an «electronic eye» system

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Volume effects (counteraction, swelling) in 12 polymeric, ionogenic, and nonionic sorbents in the form of spherical granules in aqueous amino acids (glycine, α -, β -alanines, isoleucine), dipeptide glycyl-glycine and the protein lysozyme are studied by digital microscopy. Granules of polymers are used, for the first time, as sensitive elements of sensor controls. A prototype for an optical multisensor system, an «electronic eye», based on digital video recording of volume effects of several granules in an analyzed solution and the supplied system of processing of the multidimensional data is created.

The choice of granules for use as sensitive elements of multitouch system is theoretically proved and experimentally validated in the experiments with the amino acids and water-soluble medical products, which has been identified and measured in the water solutions.

The possibility of quantitative identification of the general fiber in isotonic solutions and a plaintive liquid by digital microphotographic measurement of effects of the counteraction of granules cation-exchange pitch C 120 E is shown.

Techniques are approved by “EcoWater” Enterprise, in the Laboratory of Mass Analyses of the Voronezh State Architectural-Building University, by the Chair of Pharmaceutical Chemistry and Clinical Pharmacy of the Voronezh State Medical Academy.

