

LITERATURE CITED

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NEUTRON DISTRIBUTION IN AQUEOUS SOLUTIONS OF α -ACTIVE SUBSTANCES

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The present report is devoted to a method of measuring the content of an α -active substance in an aqueous solution from the neutron yield of the (α , n)-reaction in oxygen and other light elements. The spatial-energy spectrum of neutrons in a cylindrical vessel containing an aqueous solution of the α -active substance is studied. Cases of the uniform and nonuniform distribution of the α -active substance over the height of the vessel are analyzed.

We chose a modified system of Herzog-Selengut equations for the theoretical solution of the problem. The solution is represented in the form of series of orthogonal polynomials by a Bubnov-Galerkin method. The calculating method is realized in the form of a program for a Minsk-22 computer.

In the experiments modeling the distribution of the α -active substance over the height of the vessel we used a commercial Pu-Be source of fast neutrons. The distribution of neutron flux density was measured with a Don-1 radiometer with an SNM-16 type counter. In the calculations we chose a vessel of the same dimensions as in the model experiments for convenience in comparing the theoretical and experimental results.

ERRATA

In the article of É. G. Tertyshnik et al., "⁸⁵Kr concentration in the atmosphere over the USSR territories in 1971-1975" [Soviet Atomic Energy (At. Energ.), 42, No. 2, 165 (1977)], the following should appear in the literature cited:

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