

Contents

Vol. 41, No. 2, 1999

Simultaneous English language translation of the journal is available from МАИК "Наука/Interperiodica" (Russia).
Distributed worldwide by Kluwer Academic/Plenum Publishers. *Radiochemistry* ISSN 1066-3622

Development of the First Soviet Radiochemical Process for Recovery of Plutonium from Irradiated Uranium

E. I. Il'enko and N. A. Abramova **p. 101** [abstract](#)

Crystal Structure and Spectroscopic Properties of Double Potassium Neptunium(IV) Sulfate

I. A. Charushnikova, N. N. Krot, and Z. A. Starikova **p. 108** [abstract](#)

Absolute Output of *M* X-Ray Radiation from Isotopes of Transplutonium Elements

Yu. S. Popov, D. Kh. Srurov, P. A. Privalova, and G. A. Timofeev **p. 113** [abstract](#)

Dissolution of Uranium(VI) Compounds in Aprotic Phosphorus Oxychloride–Tin Tetrachloride System

G. V. Tikhonov **p. 116** [abstract](#)

Extraction of Uranium and Thorium with Tributyl Phosphate from Acid Solutions Containing Fluoride and Nitrate Anions

V. I. Volk, A. Yu. Vakhrushin, and S. L. Mamaev **p. 120** [abstract](#)

Coprecipitation of Transuranium Elements from Alkaline Solutions by the Method of Appearing Agents.

IV. Coprecipitation of Pu(IV) with Manganese Dioxide and Mn(OH)₂

A. A. Bessonov, A. V. Gelis, V. P. Shilov, and N. N. Krot **p. 124** [abstract](#)

Coprecipitation of Transuranium Elements from Alkaline Solutions by the Method of Appearing Agents.

V. Coprecipitation of Pu(IV) with Fe(III) Hydroxide Produced by Reduction of FeO₄²⁻

A. V. Gelis, A. A. Bessonov, N. N. Krot, and V. P. Shilov **p. 127** [abstract](#)

Coprecipitation of Transuranium Elements from Alkaline Solutions by the Method of Appearing Agents.

VI. Coprecipitation of Pu(IV) and Pu(V) with Fe(III) Hydroxide Produced by Hydrolysis of Nitroprusside

A. V. Gelis, A. A. Bessonov, N. N. Krot, and V. P. Shilov **p. 129** [abstract](#)

Improvement of the Process for Separating Gadolinium and Europium by Europium Cementation

V. M. Lebedev, A. A. Yadovin, and Ya. N. Gordeev **p. 132** [abstract](#)

Tritium Removal from Water Flows and Concentration of Tritium by Isotope Exchange in Systems with Molecular Hydrogen (H₂–H₂O, H₂–Pd)

B. M. Andreev, E. P. Magomedbekov, Yu. S. Pak, M. B. Rozenkevich, Yu. A. Sakharovskii, and I. L. Selivanenko **p. 136** [abstract](#)

Radiation Fields in Tomography on Diffusion Gas Tracers

I. N. Bekman **p. 141** [abstract](#)

Nuclear Spectroscopy in Tomography Based on α-Emitting Diffusion Gas Tracers

I. N. Bekman **p. 149** [abstract](#)

²⁴⁴Cm-Based α-Sources for Space Exploration

V. M. Radchenko, B. M. Andreichikov, H. Waenke, V. D. Gavrilov, B. N. Korchuganov, R. Rieder, M. A. Ryabinin, and T. Economou **p. 155** [abstract](#)

Laboratory Unit for Scanning Extended γ-Radiation Sources

V. D. Gavrilov, I. V. Tselishchev, and N. G. Dikarev **p. 159** [abstract](#)

Sensitivity Enhancement in γ-Spectrometric Determination of Impurity Europium Radionuclides in Production of ¹⁵³Gd

I. V. Tselishchev **p. 164** [abstract](#)

Compounds with Zircon and Monazite Structures and Possibilities of Their Use
for Incorporation of Radionuclides

Yu. F. Volkov **p. 168** [abstract](#)

Ceramic-Matrix Fixation of Medium-Level Concentrated Liquid Waste

T. N. Lashchenova, F. A. Lifanov, and V. A. Solov'ev **p. 175** [abstract](#)

Possibility of Sorption Decontamination of Radioactive Bottoms from Nuclear Power Plants

A. E. Savkin, S. A. Dmitriev, F. A. Lifanov, S. M. Golobokov, Yu. T. Slastennikov, and O. G. Sinyakin **p. 181** [abstract](#)

Behavior of α -Emitting Radionuclides in Groundwaters Contaminated with Liquid Radioactive Wastes

V. M. Korotkevich, V. A. Skuratov, A. A. Zubkov, E. N. Semenov, and N. A. Mikhailova **p. 186** [abstract](#)

Behavior of $^{239,240}\text{Pu}$ and ^{137}Cs in the System Yenisei River–Kara Sea

Yu. V. Kuznetsov, V. K. Legin, A. E. Shishlov, A. V. Stepanov, Yu. V. Savitskii, and V. N. Strukov **p. 190** [abstract](#)

Radiochemical and Selected Physicochemical Characteristics of Lava and Concrete Samples
from Subreactor Room no. 304/3 of the Fourth Block of the Chernobyl Nuclear Power Plant
and Their Connection with the Accident Scenario

A. A. Borovoi, A. S. Lagunenka, and E. M. Pazukhin **p. 197** [abstract](#)
