Registration for the Spring-Meeting of the
German Physical Society
from 04.03. to 09.03.2005
in berlindiv

Express determination of Sr-90 content in environmental samples with dicyclohexyl-18-crown-6 — •Andrei Burak[1], Helmut Fischer[1], Eduard Rudak[2], and Olga Yachnik[2] — [1]Institute of Environmental Physics, University of Bremen, Germany — [2]Institute of Physics of the National Academy of Sciences of Belarus, Minsk, Belarus

A modified method is presented for fast Sr-90 determination in objects of different origin, especially in agricultural production and food. The scientific base of the method of determination of Sr-90 content was described in detail in [1,2]. It is based on chromatographic extraction of strontium from nitrate solutions by dicyclohexyl-18-crown-6 followed by radiometric determination of Sr-90 activity. The extractant belongs to the synthetic macrocyclic polyethers and has the ability to bind strontium with high selectivity so that Sr-90 is extracted with 90-95 percent efficiency. Now the method was modernized and extended to other organic sample types (vegetables, meat, etc.). The sample preparation was carried out by wet ashing. A new resistant styrene-divinyl benzene copolymer was tested and used as column substrate. Sr-90 or Sr-90+Y-90 activity was determined by liquid scintillation counting. Test results and field data of recent samples from Belarus are presented. [1] N. Kremlyakova, A. Novikov, B. Myasoedov, Nucl. Chem. Letters, v. 145/1 (1990) [2] S. Zablotsky, E. Rudak, L. Stopolyanskaya and J. Wiley, Kerntechnik, v.60 (1995)

Location:	berlindiv
Date:	04.03.—09.03.2005
Section:	Environmental Physics
Subject:	New measurement methods in environmental physics
Presentation:	Poster
Email:	aburak@iup.physik.uni-bremen.de
Membership:	with DPG registered society: DPG