

ZVOLINSKIY, V. P.

Conference devoted to the discussion of the concept of electro-
negativity. Zhur. VKHO 8 no.2:223-224 '63.

(MIRA 16#4)

(Chemical affinity—Congresses)

ZVOLINSKIY, V.P., nauchnyy sotrudnik

Lomonosov on petroleum. Nauka i zhizn' 30 no.6:15 Je '63.
(MIRA 16:7)

1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.

(Petroleum geology)

(Lomonosov, Mikhail Vasil'evich, 1711-1765)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DANILEPOV, B.S.;
ZVOL'SKA, V.; ZVOISKIY, I.

Conversion electrons from Tu^{165} . Izv. AN SSSR. Ser. fiz.
25 no.9:1092-1095 '61. (MIRA 14:8)

(Thulium--Isotopes)

(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.;
ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of Yb¹⁶⁶ → Tu¹⁶⁶ → Er¹⁶⁶. Izv AN SSSR. Ser. fiz. 25
no.10:1217-1227 0 '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova,
Ob'yedinennyy institut yadernykh issledovaniy.
(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

3

S/020/61/136/002/014/034
B019/B056

AUTHORS: Grigor'yev, Ye. P., Gromov, K. Ya., Dzhelepov, B. S.,
Corresponding Member of the AS USSR, Zvol'ska, V.,
Zolotavin, A. V., Veys, M., and Van Yun-yuy

TITLE: The Decay of the Two-hour Isotope Lu¹⁶⁸

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 325-328

TEXT: In the lutetium fraction forming in the course of an irradiation of tantalum with 660-Mev protons, conversion lines were discovered, which had a period of two hours. The authors investigated the lutetium isotope to which these lines belong. For this purpose they used a β -spectrometer with double focusing, the magnetic field was measured by means of proton resonance, and calibration was carried out according to exactly known lines. Recording was carried out by means of two Geiger-Müller counters. Three conversion lines with a period of (2.15 ± 0.20) hours were discovered; closer details are given in Table 1. By comparing the energy differences between these three lines with X-ray data, it was found that the Lu-isotope goes over into an ytterbium isotope. From the close study

Card 1/5
2

The Decay of the Two-hour Isotope Lu¹⁶⁸

S/020/61/136/002/014/034
B019/B056

of the known Lu-isotopes, of their decays, and their spectra, the authors come to the conclusion that the required isotope with a period of 2.15 hours must be ${}_{71}\text{Lu}^{168}$, which has an odd-odd deformed nucleus. Fig. 3 shows the decay scheme of this isotope. There are 3 figures, 3 tables, and 5 references: 4 Soviet and 1 US. ✓

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova
(Leningrad State University imeni A. A. Zhdanov)
Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: October 6, 1960

Card 2/E₂

S/048/62/026/001/012/018
B125/B102

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., ~~Zvol'ska, V.~~, Zolotavin,
A. V., Malysheva, T. V., Khotin, B. A., and Adam, I.

TITLE: Conversion electrons of the short-lived platinum and tungsten
isotopes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
no. 1, 1962, 120 - 124

TEXT: The conversion electron spectra of the platinum and the tungsten
fractions were measured by a β -spectrometer with double focusing by the
method of nuclear resonance in the intervals 68 - 106 kev, and 70 - 90
kev, respectively. The neutron-deficient platinum and tungsten isotopes
were produced by bombarding gold with 660-Mev protons. Table 1 gives the
parameters of the 16 lines obtained for the platinum fraction. 7 of
these lines have been newly discovered. The 106.43-kev transition cannot
be attributed to one of the Pt isotopes but only to an Ir isotope. The
intensity ratio of the lines L_{II} and L_{III} suggests an E2 or E3-type
transition. Also for the 110.10-kev transition in an iridium nucleus
Card 1/83

Conversion electrons of the...

S/048/62/026/001/012/018
B125/B102

the isotope on whose decay transition takes place cannot be determined due to its insufficiently accurate half line. The L_I , L_{II} , L_{III} lines with the energies 96.71, 97.25 and 98.87 keV of the 110.10-keV transition have a half life of (20 ± 0.3) hr. The ratio of the line intensities of inner conversion on the L-subshells suggests a transition of type $E1$ or $E2+M1$. Also the 93.94-keV transition mentioned in 1960 at the X Soveshchaniye po yadernoy spektroskopii (Tenth Congress on Nuclear Spectroscopy) in Moscow takes place in an iridium nucleus. The three conversion lines with the half life (2.6 ± 0.6) hr and the energies 72.4, 74.3, and 83.2 keV which the authors studied in the 70 - 90-keV spectral range belong to the decay of W^{176} or W^{177} . The first two lines are M- and N-lines of the 74.9-keV transition in Ta. The intensities of the (L_I+L_{II}) , L_{III} , M, and N conversion lines of the well-known transition with $h\nu = 88.35$ keV ($2^+ \rightarrow 0^+$) in Hf^{176} initially increase with the half life (2.5 ± 0.4) hr and then decrease with the half life 8 hr of Ta^{176} . The half life 2.5 hr of W^{176} obtained by the author differs essentially from the value obtained by G. Wilkinson. There are 2 figures, 7 tables,

Card 2/53

Conversion electrons of the...

S/048/62/026/001/012/018
B125/B102

and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: G. Wilkinson, Phys. Rev., 80, 495 (1950).

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of Leningrad State University imeni A. A. Zhdanova). Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy)

Table 1. Energies and half lives of the intensity decrease of some conversion lines of the platinum fraction. ✓
Legend: (1) $T_{1/2}$ (hr); (2) identification; (3) isotope.

Card. 3/8
3

40098

S/048/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzhelepov, B. S., Zvol'ska, V., Zvol'skiy, I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26
no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167} , the γ -spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β -spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 keV; whereas for $E_e < 56$ keV the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-MeV protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of
Card 1/2

S/048/62/026/008/009/028
B104/B102

The Tu^{167} decay scheme

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables. f

Table 1. Relative intensities of Tu^{167} γ -rays.

Legend: (1) E_{γ} , keV, (2) results, (3) K. Gromov, et al., Materialy III. Soveshohaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

E_{γ} , keV	(2)	(3)	(4)
207,9	240 ± 35	100	100
531,8	100	3,2 ± 0,5	5,6
700	3,6 ± 0,5	(~0,8)	—
790	< 0,15	2,3 ± 1	—
880	< 0,15	~1,1	—

Card 2/0 2

GROMOV, K.Ya.; ZHELEEV, Zh.T.; ZVOL'SKA, V.A.; KALINNIKOV, V.G.

Decay of Er^{161} . IAd. fiz. 2 no. 5:783-793 N '65.

(MIRA 18:12)

1. Ob'yedinennyy institut yadernykh issledovaniy. 2. Sotrudnitsa
Prazhskogo Instituta yadernykh issledovaniy, Chekhoslovakiya
(for Zvol'ska).

ACC-NR: AP6016896

SOURCE CODE: UR/0367/65/002/005/0783/0793

AUTHOR: Gromov, K. Ya.; Zhelev, Zh. T.; Zvol'ska, V.; Zvol'ska, V.; Kalinnikov, V. G.
ORG: Joint Institute of Nuclear Research (Ob'yedinyaniy Institut yadernykh issledovaniy); Zvol'ska/Prague Institute of Nuclear Research (Pražský institut yadernykh issledovaniy)

TITLE: Decay of Er sup 161

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 783-793

33
D

TOPIC TAGS: radioactive decay, positron, erbium, holmium, spectrometer, electron spectrum

ABSTRACT: ¹⁷ Positron radiation of Er¹⁶¹ ($E_0 = 820 \pm 40$ keV) was observed with a triple-focusing magnetic spectrometer. Data are presented for the conversion electron spectrum and the multiplicity of certain transitions in the Ho¹⁶¹ nucleus. The Er¹⁶¹ → Ho¹⁶¹ decay-scheme is determined and presented. The 1897 and 1943 keV levels are interpreted as three-quasi-particle states. The authors express deep thanks to A. V. Kudryavtsova for the help on the work and to N. I. Pyatov and V. M. Mikhaylov for checking the decay-scheme. Orig. art. has: 5 figures and 2 tables. (JPRS)

SUB CODE: 20 / SUBM DATE: 09Apr65 / ORIG REF: 011 / OWH REF: 010

SOV REF: 012

Card 1/1 BLG

2

S/C48/63/027/002/005/023
B104/8180

AUTHORS:

Orlov, K. Ya., Dotsyepov, B. S., Zvol'skii, V.,
Zvol'skiy, I., Poltavin, A. V., Pelekis, E. L., and
Pelekis, E. L.

TITLE:

The Tu^{165} decay scheme

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 27, no. 2, 1963, 195-199

TEXT. The decay scheme of Tu^{165} suggested in a previous work by the authors (Izv. AN SSSR, Ser. fiz., 25, 1032 (1961)) was checked by $\gamma\gamma$ -coincidence tests and by determining the multipole orders in the E_{α}^{165} transitions. The spectrum of the conversion electrons was taken with a double focusing β -spectrometer in the range 5-60 keV. From the intensity ratios the multipole order for most transitions with energies below 40 keV could be determined. The coincidences were determined on a β -channel analyzer. The γ -ray scheme shown in the figure was constructed from the results. It is identical with that of the previous part 1/3

The Tu^{165} decay scheme

S/046/63/027/002/005/023
B104/B130

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.

Legend: (1) 29 hours; (2) 10 hours.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.;
KALINNIKOV, V.G.

Decay of Tu^{163} . Izv.AN SSSR.Ser.fiz. 27 no.2:182-194 F '63.
(MIRA 16:2)
(Thulium isotopes--Decay)

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; LEBEDEV,
N.A.; URBANETS, Ya.

Decay scheme of Tu^{167} . Izv. AN SSSR. Ser. fiz. 26 no.8:
1019-1026 Ag '62. (MIRA 15:11)

(Thulium--Decay)

GRIGOR'YEV, Ye.P.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZOLOTAVIN, A.V.;
MALYSHEVA, T.V.; KHOTIN, B.A.; ADAM, I.

Conversion electrons from short-lived platinum and tungsten
isotopes. Izv. AN SSSR. Ser. fiz. 26 no.1:120-124 Ja '62.
(MIRA 15:2)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo
gosudarstvennogo universiteta im. A.A.Zhdanova, Ob'yedinenny
institut yadernykh issledovaniy i Institut geokhimii i
analiticheskoy khimii im. V.I.Vernadskogo.

(Electrons)

(Platinum—Isotopes)

(Tungsten—Isotopes)

CZECHOSLOVAKIA/Human and Animal Physiology. Lactation

T-10

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65594

Author : Pachnerovs Eva, Brutar Vlastimil, Zvolaska Eva
Inst : -
Title : The Possibility of Augmenting Lactation.

Orig Pub : Lekar. listy, 1954, 9, No 1, 10-14

Abstract : No abstract

Card : 1/1

Possibility of increasing of milk secretion in Lactation; 2nd
communication. Cesk. gyn. 19 no.4:275-279 July 54.

1. Z I. por. klin., predn. prof. MUDr Karel Klaus.
(LACTATION, physiology
milk secretion increasing, results of exper.)

21(7)
AUTHORS:

SOV/48-23-7-16/31
Bunakov, V. Ye., Dzhelepov, B. S., Zvol'skiy, I., Sergiyenko, V.A.

TITLE:

The Coincidences of the Conversion Electrons in the Decay
 $\text{Se}^{75} \rightarrow \text{As}^{75}$ (Sovpadeniya konversionnykh elektronov pri raspade
 $\text{Se}^{75} \rightarrow \text{As}^{75}$)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 7, pp 859-863 (USSR)

ABSTRACT:

The authors investigated, by means of a lens- β -spectrometer, the coincidences of the conversion electrons of the above-mentioned decay, the isotope Se^{75} being obtained by a (n, γ) -reaction in the irradiation of the enriched isotope Se^{74} . The decay of Se^{75} was investigated in a number of papers; the lines of the γ -spectrum and the coincidences are indicated. The spectrum, recorded by the spectrometer, of the conversion electrons of this decay is shown in figure 1, and is supplemented by the level scheme. The observed coincidences of conversion electrons are indicated, and it is ascertained that their relative number lies between 0.5 and 3. The coincidences of various lines recorded by the spectrometer are shown in

Card 1/2

The Coincidences of the Conversion Electrons
in the Decay $\text{Se}^{75} \rightarrow \text{As}^{75}$

SOV/48-23-7-16/31

several diagrams, and the results are discussed in detail. Finally, it is stated that the results obtained improve the data of previous papers (Refs 3-5). The authors thank A. V. Zolotavin for placing at their disposal the isotope Se^{75} , and mention L. Gorzhak, student of the LGU, who participated in the measurements. There are 5 figures, 1 table, and 6 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskii institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A. A. Zhdanov)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DZHELIZHOV, B.S.;
ZVOL'SKA, V.; ZVOLSKIY, I.

Conversion electrons from Tm^{165} . Izv. AN SSSR. Ser. fiz.
25 no.9:1092-1095 '61. (MIRA 14:8)

(Thulium--Isotopes)

(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.;
ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of $\text{Yb}^{166} \rightarrow \text{Tm}^{166} \rightarrow \text{Er}^{166}$. Izv AN SSSR. Ser. fiz. 25
no.10:1217-1227 0 '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova,
Ob'yedinennyy institut yadernykh issledovaniy.
(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

DZHELEPOV, B.S.; ZVOL'SKIY, I.; NIKITIN, M.K.; SERGIYENKO, V.A.

Coincidences between conversion electrons of the dysprosium fraction.
Izv.AN SSSR.Ser.fiz. 25 no.10:1246-1255 0 '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova i
Ob"yedinennyy institut yadernykh issledovaniy.
(Electrons--Spectra) (Dysprosium--Decay)

Coincidences between conversion electrons produced in the decay
of Ho¹⁶⁰ → Dy¹⁶⁰. Izv.AN SSSR.Ser.fiz. 25 no.10:1228-1245 0
'61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova,
Ob"yedinennyy institut yadernykh issledovaniy.
(Holmium→Decay) (Dysprosium→Decay)

S/048/62/026/002/005/032
B101/B102

AUTHORS: Dzhelepov, B. S., Zvol'skiy, I., Nikitin, M. K., and
Sergiyenko, V. A.

TITLE: Coincidences between conversion electrons resulting from the
Dy¹⁵³ — Tb¹⁵³ decay

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 26, no. 2, 1962, 202-204

TEXT: The coincidences between conversion electrons of the transitions of
80.84 + 82.48; 99.7, and 147.5 + 149.0 keV with Dy¹⁵³ electrons of
170-230 and 173.6 keV were studied (Figs. 1, 2). The Dy fraction was
chromatographically separated from a tantalum target bombarded with
660-MeV protons. The sources contained Dy¹⁵³ ($T_{1/2} = 6.4$ hrs); Dy¹⁵⁵
(10 hrs); Dy¹⁵⁷ (8 hrs); Dy¹⁵⁹ (144 days); Tb¹⁵³ (2.3 days); and Tb¹⁵⁵
(5 days). As the measurements with a double-lens beta-ray spectrometer
began 18 hrs after the irradiation of the Ta target and took about 15 hrs,
the short-lived Dy isotopes with $A < 153$ had already decayed. The Dy

Card 1/0 3

Coincidences between conversion...

S/048/62/026/002/005/032
B101/B102

preparation was precipitated onto a slightly aluminized collodion film. It is concluded from the experimental data that the 80.8-, 163.3-, and 253.3-kev levels excited in the Dy^{153} decay do exist in Tb^{153} . Ye. N. Rozhin, K. Ya. Gromov, and V. A. Khalkin are thanked for assistance. There are 3 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Leningradskiy gos. universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Fig. 1. Coincidences of $L_{80.84} Dy^{153} + L_{82.48} Dy^{153} + L_{83.01} Dy^{157}$ electrons. Broken line: spectrum of conversion electrons, recorded by one half of the spectrometer. Continuous line: count rate of coincidences.

Legend: abscissa: $H\alpha$, oe·cm. Ordinate: left: $N_{single} \cdot 10^{-3} \cdot \text{min}^{-1}$;
right: $N_{coinc} \cdot 10^{-2} \text{ hr}^{-1}$.

Card 2/3 3

Coincidences between conversion...

S/048/62/026/002/005/032
B101/B102

Fig. 2a. $N_{\text{single}} \cdot 10^{-4} \text{ min}^{-1}$ as a function of H_{G} .

Fig. 2b. spectrum of conversion electrons. Diagram (a): coincidences of K99.7 electrons of Dy^{153} ; diagram (b): coincidences of L80.84 + L82.48 electrons of Dy^{153} + L83.01 electrons of Dy^{157} ; diagram (c): coincidences of K147.5 + K149.0 + L99.7 electrons of Dy^{153} .

Legend: abscissa: H_{G} , oe.cm; ordinate of diagrams (a), (b), and (c): $N_{\text{coinc}} \cdot \text{hr}^{-1}$.

Card 3/4 3

40098

S/O48/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzheleпов, B. S., Zvol'ska, V., Zvol'skiy,
I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26
no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167} , the γ -spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β -spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 keV; whereas for $E_e < 56$ keV the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-MeV protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of
Card 1/2

The Tu^{167} decay scheme

S/048/62/026/008/009/028
B104/B102

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables. f

Table 1. Relative intensities of Tu^{167} γ -rays.

Legend: (1) E_{γ} , kev, (2) results, (3) K. Gromov, et al., Materialy III. Soveshchaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

(1)	(2)	(3)	(4)
207,9	240±35	100	185
531,8	100	100	100
700	3,6±0,5	3,2±0,5	5,6
790	~0,15	~0,8	—
880	~0,15	2,3±1	—
	~0,1	~1,1	—

Card 2/02

GROMOV, K.Ya.; YENCHEV, D.A.; ZHELEV, Zh.T.; ZVOL'SKIY, I.; KALINNIKOV, V.G.;
KUZNETSOV, V.V.; MA KHO IK; MUZIOL', G.; KHAN' SHU-ZHUN' [Han Shu-jun]

Decay scheme of Tb^{152} . IAd. fiz. 1 no.4:562-572 Ap '65. (MIRA 18:5)

1. Ob'yedinenny institut yadernykh issledovaniy.

APPROVED FOR RELEASE: Thursday, September 26, 2002
GROMOV, K.A.; DZHEZHEV, B.S.; ZVOLSKII, V.; ZVOL'SKIY, I.;
KALINNIKOV, V.G.

Decay of Tu^{163} . Izv. AN SSSR. Ser. fiz. 27 no. 2:182-194 F '63.
(Thulium isotopes--Decay) (MIRA 16:2)

8 048 66 007 002 009 023
004 00

AUTHORS: Iosadze, G. I., G. I. Gerasimov, P. D., G. I. Suda, V. I.,
Ivanov, I. I., Kostin, A. V., Palezia, S. L., and
Serebrennikov, V. I.

TITLE: The Tu^{165} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 27, no. 4, 1961, 115-119

TEXT: The decay scheme of Tu^{165} suggested in a previous work by the
authors (Izv. AN SSSR, Ser. fiz. i khim. nauki, 1960, 1111) was checked by
 $\gamma\gamma$ -coincidence tests and by determining the multipole orders in the
 Er^{165} transitions. The spectrum of the conversion electrons was taken
with a double focusing spectrorometer in the range 1-60 keV. From the
observed ratios the multipole order for each transition at given energies
was determined. The multipole orders were determined
from the ratios of the intensities of the γ transitions. The decay scheme was
rechecked from the results obtained. It is identical with that of the previous
Card 1/3

The Tu^{165} decay scheme

S/048/63/027/002/005/023
B/04/3180

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.

Legend: (1) 23 hours; (2) 10 hours.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOI'SKIY, I.; LEBEDEV,
N.A.; URBANETS, Ya.

Decay scheme of Tu^{167} . Izv. AN SSSR. Ser. fiz. 26 no.8:
1019-1026 Ag '62.

(MIRA 15:11)

(Thulium--Decay)

1. ZVEN'SKIY
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

2. USSR (600)
4. Briquets (Fuel)
7. Briquetting lumber waste. Za ekon. mat. no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

ZVOL'SKIY, P.I.

Results of the revision of plans and estimates in the Perm
Economic Region. Prom.stroi. 37 no.10:7-10 0 '59.
(MIRA 13:2)

1. Leningradskiy Promstroyproyekt.
(Perm Province--Construction industry--Consts)

ZVOL'SKIY, S. T.

ZVOL'SKIY, S. T.: "Determination of the relative content of isotopes in bicomponential low-activity mixtures using the beta-ray absorption method." Kiev State Pedagogical Institute imeni A. M. Gor'kiy. Kiev, 1956.
(Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

SO: Knizhnaya Letopis', No. 26, 1956

ZVOL'SKIY, S.T. [Zvol's'kiy, S.T.]

All-Union Conference on Peaceful Use of Atomic Energy. Geol. zhur.
18 no.1:109-110 '58. (MIRA 11:5)
(Atomic power--Congresses)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol'skyi, A.IE.]

Determination of the moisture content and compactness of soils
by means of radioactive isotopes. Geol.zhur. 18 no.5:12-22
'58. (MIRA 12:1)

(Soils--Analysis) (Radioisotopes)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
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CIA-RDP86-00513R002065710017-2
CIA-RDP86-00513R002065710017-2"

ZVOL'SKIY, S. (Zvol's'kiy, S.), kand.fiziko-matem.nauk; LYAL'KO, V., inzh.-
geolog

The rays that look into the depths. Znan. ta pratsia no.5:6-7 My '60.
(Prospecting--Geophysical methods)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol's'kiy, S.T.]

Results of the utilization of trace neutrons and gamma rays in the
study of soil moisture and density. Geol. zhur. 20 no. 4:45-53 '60.
(MIRA 14:4)

(Soil physics) (Trace elements) (Gamma rays)

BABINETS, Audrey Yevtkhiyevich; ZVOL'SKIY, Stanislav Timofeyevich;
BURKSER, Ye.S., otv.red.; SHTUL'MAN, I.F., red.izd-va; YEFIMOVA,
M.I., tekhn.red.

[Investigation of the compactness and moisture content of soils
by means of radioactivity] Issledovanie plotnosti i vlazhnosti
gruntov metodami radioaktivnykh izlucheni. Kiev, Izd-vo
Akad.nauk Ukrainskoi SSR, 1961. 139 p. (Akademiia nauk URSR,
Kiev, Instytut geologichnykh nauk. Trudy. Seriia gidrogeologii
i inzhenernoi geologii, no.6.). (MIRA 15:5)

1. Chlen-korrespondent AN USSR (for Burksér).
(Radioactivity) (Soil research)

2 VOLS SKIP, 5.7

102

PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniya v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. g. Riga, v 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopayemykh (Radioactive Isotopes and Nuclear Radiation in the National Economy of the USSR; Transactions on the Symposium Held in Riga, April 12 - 16, 1960, in 4 volumes. v. 4: Prospecting, Surveying, and Mining of Mineral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskyy komitet Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy; ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A. Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

Radioactive Isotopes and Nuclear (Cont.)

SCV/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tekhnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

Card 2/11

Radioactive Isotopes and Nuclear (Cont.)

SO7/5592

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Alekseyev, F. A. Present State and Future Prospects of Applying the Methods of Nuclear Geophysics in Prospecting, Surveying, and Mining of Minerals	5
Bulashevich, Yu. P., G. M. Voskoboynikov, and L. V. Misyukin. Neutron and Gamma-Ray Logging at Ore and Coal Deposits	19
Gordeyev, Yu. I., A. A. Mukher, and D. M. Srebrodol'skiy. The	
Card 3/11	

- and Isotopes for the Exploration of Oil-Bearing Regions in the
ChIASSR (Chechen-Ingush ASSR) and Stavropol'skiy Krai 210
- Shapiro, D. A. Application of Radioactive Radiation and Isotopes
For the Exploration of Oil Wells in Tatariya 219
- Blankov, Ye. B., and T. N. Blankova. Use of the Method of In-
duced Activity for Controlling the Flooding of Oil Fields in
Tatariya 226
- Dvorkin, I. L., B. M. Orlynskiy, and A. N. Plokhonnikov. Use
of the Anomalous Neutron Parameters of Chlorine Nuclui to Con-
trol the Flooding of Oil Fields 237
- Babinets, A. Ye., and S. T. Zvol'skiy. Results of Using the
Method of Scattered Neutrons and Gamma Radiation in Studying
Rock Moisture and Density 246
- Sokolov, I. Yu., V. A. Polyakov, and V. V. Lushnikov. Appli-
cation of Radioactive Indicators in Studying the Concentration
Card 9/11

URBANEC, J.; KAJFOSZ, J.; ZVOLSKY, J. (Zvol'skiy, I.); NOVGORODOV, A.

Investigation of Dy155 → Tb155 decomposition. Chekhosl fiz
zhurnal 13 no.8:573-578 '63.

1. Laboratoriya yadernykh problem, Ob'yedinennyy institut
yadernykh issledovaniy, Dubna, SSSR.

ZVOLSKY, Josef, dr.

New trends in oral hygiene. Prum potravln 13 no.4:189-190
Ap '62.

1. Severoceske tukove zavody, n.p., Usti nad Labem.

ZVOLSKY K.

J-11

CZECHOSLOVAKIA /Chemical Technology. Chemical Products and
Their Application - Fats and oils. Waxes. Soap.
Detergents; Flotation reagents

Abs Jour : Referat Zhur - Khimiya, No 2, 1958, 6078

Author : Zvolsky K., Redlich P.

Inst : Not given

Title : Chromatography in the Industry of Fats

Orig Pub : Prumysl potravın, 1955, 6, No 11, 559

Abstract : It is shown that it is possible to separate, by the chromatographic method, 7 pure fat acids (lauric, myristic, palmitic, stearic, butyric, linolenic and erucic).

Card 1/1

ZVOJSKY, P.; MALINA, L.

Mental factors in vitiligo. Cesk. psychiat. 59 no.4:222-228
Ag '63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU
v Praze Dermatologicka klinika lekarske fakulty hygienicke
KU v Praze.

(VITILIGO) (PSYCHOLOGY)

ZVOLSKY, P.

The age factor in the outcome of therapeutic results in alcoholics.
Cesk. psychiat. 58 no.5:321-323 0 '62.

1. Psychiatricka klinika fak. vseob. lek. University Karlovy v Praze.
(ALCOHOLISM) (AGING)

ZVOLSKY, P.

Genetics in psychiatry. Cas. lek. cesk. 102 no.50:234-236
13 D'63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU v
Praze; prednosta: prof. dr. V.Vondracek, DrSc.

*

ZVOLSKY, P., Psychiatric Clinic (Psychiatricka klinika), Faculty of General Medicine (Fakulta vseobecneho lekarstvi), Charles University, Prague, and MALINA, L., Dermatological Clinic (Dermatologicka klinika), Faculty of Medical Hygiene (Lekarska fakulta hygienicka), Charles University, Prague.

"Psychic Factors in Vitiligo"

Prague, Ceskoslovenska Psychiatrie, Vol LIX, No 4, August 63, pp 222-228.

Abstract [Authors' English summary]: Two groups of patients suffering from vitiligo were investigated from the view point of psychic factors in the origin and development of the disease. It was found that the random group, and more so the group with stressful factors linked to the onset of the disease, differed significantly from the control group. Authors argue against the view that psychic factors play a decisive role in the development of vitiligo. Fifteen references, including 1 Czech.

HASKOVEC, L.; ZVOLSKY, P.; FALTUS, F.

Neuroses in the general practice. (A group of neurotics from the center of district physicians and its comparison with a similar group from a psychiatric clinic). Cesk. psychiat. 61 no.5:314-330 0 '65.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi Karlovy University v Praze.

ACC NR: AP6031816

AUTHOR: Haskovec, L.---Gashkovets, L.; Zvol'skiy, P.---Zvol'skiy, P.; Faltus, F.---
Faltus, F. 16
B

ORG: Psychiatric Clinic, Faculty of General Medicine, Charles University, Prague
(Psychiatricka klinika fakulty vseobecneho lekarstvi KU)

TITLE: Neurosis ²² in the outpatient offices of general practitioners

SOURCE: Ceskoslovenska psychiatrie, no. 5, 1965, 314-330

TOPIC TAGS: psychoneurotic disorder, clinical medicine, health, psychology, psychiatry

ABSTRACT: Detailed study of 103 outpatient neurotic patients from various general practitioners in Prague compared with clinic patients by a number of criteria. In general, the former were either very severe and chronic neurotics or very early and mild cases, the clinic cases being more homogeneous in this regard. In former patients, somatic and occupational problems predominated; in the clinic patients, affective and sexual or marital ones overshadowed everything else. Conclusions for practice and public health policy. Orig. art. has: 17 tables. [Based on authors' Eng. abst.] [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 004

BICAN, Josef, inz. CSc.; ZVONAR, Ladislav, inz.

Alloys for thermocouples used in the metallurgical industry.
Hut listy 19 no. 6:421-425 Je '64.

1. Research Institute of Metals, Panske Brezary (for Bican).
2. Kovohtis Vestec National Enterprise (for Zvonar).

ZVONAR, V.

International symposium on macromolecular chemistry, Moscow, 1960.
 Makromolekulare Chemie 100: 1-18 (1960).
 International Symposium on Macromolecular Chemistry, Prague, 1960. Paper 10, 1-15, 1960. Papers and Abstracts, Section I, Prague, 1960. 36 p. 3,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry.
 Tech. Re. 7. V. Polymers.

PURPOSE: This collection of articles is intended for chemists and researchers interested in macromolecular chemistry.

CONTENTS: This is Section I of a multivolume work containing miscellaneous reports on macromolecular chemistry in Moscow. The material includes data on the synthesis and properties of polymers, and on the processes of polymerization, copolymerization, polycondensation, and polyaddition. Each part is presented in full or summarized in French, English, and Russian. Data are given in papers, 24 of which were presented by Soviet, American, European, and Czechoslovakian scientists. 26 personalities are mentioned. References accompany individual articles.

Traykova, M., I. B. Dolgoplyk, I. G. Durnavina, S. K. Kozlovskaya, and V. S. Kuznetsov (USSR). The Synthesis of Cis- and Trans-Isomers of Polymers on Oxide Catalysts and a Study of Their Structure and Properties. 13

Katolich, V. G. V. Sinyay, N. K. Pivovarskiy (USSR). Synthesis and Polymerization of Esterified Polycrylates. 47

Radtsig, M. I. M. V. Sinyay, and V. S. Kuznetsov (Czechoslovakia). The Structure of Hardened Unsaturated Polymers. 98

Radtsig, M. I. M. V. Sinyay, and V. S. Kuznetsov (USSR). New Method of Preparation of Polymers and Their Outcomes. 64

Radtsig, M. I. M. V. Sinyay, and V. S. Kuznetsov (USSR). Analysis of Cross-Linked Polymers. 72

Radtsig, M. I. M. V. Sinyay, N. K. Pivovarskiy, V. S. Kuznetsov, and G. A. Gerasimov (USSR). On the Synthesis and Properties of Cyclic and Linear Polymers of the Types of Poly-polyol and Polyphenylacetylene. 90

Radtsig, M. I. M. V. Sinyay, N. K. Pivovarskiy, V. S. Kuznetsov, and G. A. Gerasimov (USSR). Cyclic Polymerization and Copolymerization of Diarylacetylene. 107

Radtsig, M. I. M. V. Sinyay, N. K. Pivovarskiy, V. S. Kuznetsov, and G. A. Gerasimov (USSR). Synthesis of Crystalline Polyacrylonitriles. 118

Radtsig, M. I. M. V. Sinyay, N. K. Pivovarskiy (USSR). Polymerization of Polyfunctional Compounds. 123

Solomon, O. F. M. D. Solov'ev, K. A. Solov'ev, and M. T. Solov'ev (USSR). Polymerization of Vinylacetone in the Presence of Butyllithium and Titanium Chloride Type Catalysts. 131

Kornik, V. V. S. I. Solov'ev, and V. S. Kuznetsov (USSR). On the Preparation of the New Type of Linear Polymers by the Reaction of Polymerization. 141

Kornik, V. V. S. I. Solov'ev, and V. S. Kuznetsov (USSR). The Synthesis of Organosulfon Polymers on a Complex Catalyst (C₂H₅)₂Al₂Cl₂. 152

Kolomoys, G. S. S. I. Solov'ev, and M. V. Kuznetsov (USSR). Characterization of Polymers. 156

Sokolovskiy, M. I. S. I. Solov'ev, V. S. Kuznetsov, D. A. Kozlovskiy, G. I. Kuznetsov, L. I. Lomov, A. I. Borisenko, and V. V. Kuznetsov (USSR). Organotin Polymers. 169

Kornik, V. V. S. I. Solov'ev, and V. S. Kuznetsov (USSR). The Effect of Catalytic Structures on the Polymerization Activity of the Unsaturated Organosulfon Compounds. 167

Kolomoys, G. S. S. I. Solov'ev, and M. V. Kuznetsov (USSR). Cooperative Processes in the Polymerization of Biopolymers. 202

ZVONAR, Vladimir

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and
Their Application, Part 4. - Varnishes, Faints,
Paint Coatings.

H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

Author : Vladimir Zvonar.

Inst :

Title : Colorimetric Determination of Cobalt in Siccatives.

Orig Pub: Chem. prumysl, 1957, 7, No 9, 512-514.

Abstract: A rapid and simplified method of quantitative de-
termination of Co in siccatives is proposed: a
sample containing from 0.4 to 4.0 mg of Co is boiled
with 20 ml of dilute HCl until it decomposes (about
10 min.), after which it is diluted with acetone to
100 ml and colormetered with NH_4 using a calibration
curve. The relative error of this determination is 1

Card : 1/2

CZECHOSLOVAKIA/Chemical Technology, Chemical Products and
Their Application, Part 4. - Varnishes, Paints,
Paint Coatings. H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

to 2% usually, but it reaches 5%, if the Co content was very great or very little, i.e., the error is of the same order as in the case of methods of Co determination requiring much time (combustion of the sample etc.). The content of Mn and some other metals in the siccative interferes with the determination accuracy; Fe should be preliminarily converted into pyrophosphate complex.

Card : 2/2

Distrs: $H_2O(j)$

Melt viscosities of low-molecular-weight polycondensates. Miloslav Bohdanecký, Jiří Tarnochyna, and Vladimír Zvonaf (Research Inst. Synthetic Resins & Varnishes, Pardubice, Czech.). *Chem. Průmysl* 8(33), 383-8(1958). Novolaks were prep'd. by the condensation of *p*-tert-butylphenol and HCHO (molar ratio 1:1) in 1% H_2SO_4 at 100°. After purification by distn. at 200-60° and 1 mm. Hg under N, they were fractionated from 10% NaOH with H_2O . Polyesters were prep'd. from phthalic and maleic anhydride (molar ratio 1:4) and ethylene glycol by heating under CO_2 . The mol. wts. of the novolaks were det'd. cryoscopically in dioxane and ebullimetrically in toluene. The mol. wts. of the polyesters were det'd. by end-group analysis. The melt viscosity of the novolaks was det'd. in an evacuated capillary viscometer with a weighed sample fused in. The melt viscosity of the polyesters was det'd. in a Höppler microviscometer or a Höppler microplastometer. At const. temp. T , $\log \eta$ was a linear function of the mol. wt. M for the novolaks and a linear function of $\log M$ for the polyesters. This dependence on T was expressed by Vogel's equation: $\log \eta = \log B + A/(T - T_0)$. For the novolaks, $B = 1.60 \times 10^{-4}$, $A = 160 + 0.8M$, and $T_0 = 300$. For polyesters, $B = 1.82$, $A = 3751 \log(M/60)$, and $T_0 = 318$. The temperature cannot be simply related to the activation energy of viscous flow, because it also depends on structural changes such as H-bond assocn. H. Newcombe

15
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2-May
1

ZVONAR, V.

"Multilaminate Glass Textile, a New Construction Material," p. 822.
(STROJIRENSTVI. Vol. 4, No. 11, Nov. 1954; Praha, Czech.)

So: Monthly List of East European Accessions, (EEAL), IC, Vol. 4,
No. 4, April 1955, Uncl..

ZVONAR, V.; NOVY, K.

Working laminated plastics reinforced with Fiberglas. p. 837. (STROJIRENSTVI,
Vol. 6, No. 12, Dec 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81508.

Author : Yuracka F., Zvonar V.

Inst :

Title : Synthesis of Organic Peroxides.

Orig Pub: Chem. prumysl. 1957, 7, No 4, 192.

Abstract: It is possible to have explosions during the preparation of peroxides according to Zwakha's method (Ref. Zhur-Khimiya, 1958, 61842). The danger of explosion can be eliminated by adding dimethyl-dibutyl phthalate (I) or tricresyl phosphate to the reaction mixture. Thus, a phlegmatized peroxide is obtained in liquid form or as a paste, which is used in polymerizations; for instance a 50% solution of $\text{CH}_3\text{COOCCOC}_6\text{H}_5$; or the peroxide

Card : 1/2

ZVONAR, V.

Remarks of the synthesis of organic peroxides.

p. 192 (Chemicky Prumysl. Vol. 7, no. 4, Apr. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAJ) I.C. Vol. 7, no. 2,
February 1958

ZVONAR, V.

Colorimetric determination of cobalt in siccatives.

p. 512 (Chemicky Prumysl. Vol. 7, no. 9, Sept. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) IC. Vol. 7, no. 2,
February 1958

I

CZECHOSLOVAKIA/High Polymer Chemistry.

Abstr Jour: Ref Zhur-Khin., No 8, 1959, 29998.

Author : Bohdanecky, M., Tanchyna, J, and Zvonar, V.

Inst :

Title : The Viscosity of Fused Low Molecular Weight
Polycondensates.

Orig Pub: Chem Průmysl, 9, No 7, 302-305 (1958) (in Czech with
English and Russian summaries)

Abstract: It has been found that the Vogel equation gives
an adequate picture of the temperature dependence
of the viscosity of unsaturated polyesters and
fused phenol and p-ter-butylphenol. At constant
temp log increases linearly with the MW of lacquer
resins and varies as the log of the MW of polyesters.
Summary by the authors.

Card : 1/1

80407

Z/009/60/000/01/034/038
E112/E253

5.3832

AUTHORS: Hudeček, Z., and Zvonář, V

TITLE: The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

PERIODICAL: Chemický průmysl, 1960, Nr 1, pp 44-50

ABSTRACT: The authors have studied the properties of laminated glass fibres for corrugated roofing materials. These should be able to transmit as much light as possible. Ideal conditions would be if refractive indices, dispersion and heat-coefficient would be identical for both, the glass fibre and the hardened resin. It has to be born in mind that the optical properties of the resin are changed after setting and polymerisation and the problem is thus reduced to the preparation of a resin which would have identical optical properties to that of the glass fibres. The glass fibres used for the laminates were in all cases boron-glasses, free of alkali of a refractive index 1.548 to 1.553 and an Abbé number 46 to 48. The aim of the present investigation has been the establishing of the fundamental optical properties of unsaturated polyester resins, the effect of starting

Card 1/5

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Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

materials and the change of optical properties during polyesterification and copolymerisation. The authors describe methods of testing. Samples to be tested were prepared by pouring the resins on glass plates and hardening at 100°C in an oven. Methylcyclohexanone-peroxide was used as initiator and cobalt naphtenate was the accelerator. The refraction indeces and mean dispersion were measured by Refracto meter, type Meopta, at -20°C, 0°C, 20°C, 40°C. The following variants were studied:

1. Effect of degree of polymerisation: It was seen that during polyesterification the refractive index increases. Particularly rapidly at the beginning of the reaction.
2. Effect of acid: The authors have studied the optical properties of polyester from maleic, itaconic, and citraconic acid with ethylene glycol. The resins were modified with phthalic anhydride. Results are tabulated, indicating that the character of the unsaturated acid has only very little influence on the optical properties. A very much greater influence is exerted by the saturated

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E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

dicarboxylic acid which is used as modifier. The greatest increase in the refractive index is caused by chlorinated aromatic acids, such as tetrachloro phthalic acid. Effect of modifying acids are given in two tables. The authors have also established that saturated aliphatic dicarboxylic acids reduce the refractive index of the unsaturated polyester.

3. Effect of dioles: Similarly to the acids, the alcoholic components have also an effect upon the optical properties, although not quite so pronounced. The refractive index does not depend on the length of the chain but on the character of the hydroxyle groups, that means whether they are primary, secondary or tertiary. The refractive index decreases with increased substitution. The presence of a chlorine in the molecule of the diol considerably increases the refractive index, but an ether-linkage works in the opposite way. The lowest refractive indices are obtained from dipropylene glycol.

Card 3/5

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Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

4. Effect of Monomers: The authors have studied the effect of styrene and methyl methacrylate. Whereas the effect of styrene was negligible that of methyl methacrylate was considerable.
5. Effect of temperature: The refractive index is affected by temperature in a linear relationship but it was seen that the character of the polyester itself exerts only a small effect. The influence of the monomer is of greater importance. The authors conclude from their work that it is almost impossible to produce a glass laminate in which the optical properties of glass and resin can be completely compensated. The best method of modification of optical properties would seem to be the choice of the diole and the saturated dicarboxylic acid, while the unsaturated acids show hardly any effects. The authors suggest as starting materials 1,3-butanediol and cycloolefinic acids. A further modification may be achieved by diluting the polyester resin with methyl methacrylate. The authors were unable to eliminate the differences of thermal coefficient

Card 4/5

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E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

between glass and resin.

There are 6 figures, 6 tables and 8 references, 4 of which are German, 1 Czech, 1 Japanese and 1 Swedish.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků,
Pardubice (Research Institute of Synthetic Resins and
Varnishes, Pardubice) ✓

SUBMITTED: June 30, 1959

Card 5/5

39002
Z/009/62/000/006/002/002
E112/E153

11.2220

AUTHOR: Zvonař, Vladimír

TITLE: Thermodynamics of fire resistance of unsaturated polyester resins

PERIODICAL: Chemický průmysl, no.6, 1962, 321-326

TEXT: Theoretical aspects of the burning and flammability of synthetic resins are discussed. A free radical mechanism is postulated which, similarly to a free radical initiated polymerisation, is characterised by chain propagation, termination, transfer and inhibition. The fire and flame retarding action of some substances, particularly the halogenated hydrocarbons, is based on chain termination but the exact mechanism is unknown. It is proposed that they function by withdrawing free hydrogen atoms or hydroxyl radical by reaction with the halogen. Halogenated hydrocarbons with more labile halogen substituents (bromine or iodine) will, consequently, provide a greater flame retarding efficiency, e.g. hydrogen, containing 15% methyl antimony oxide as a fire retarding filler is discussed. Practical
Card 1/3

Thermodynamics of fire resistance... Z/009/62/000/006/002/002
E112/E153

work includes the determination of the correlation of structure of resin, its thermodynamic parameters and fire resistance. Only chlorinated resin components are considered and the effect of the nature of the chlorine bond on fire resistance is determined. The method of investigation consists of comparing structurally analogous chlorinated and non-chlorinated resin components, e.g. propylene glycole (1,2); 3-chloropropylene glycole (1,2); phthalic acid; tetrachlorophthalic acid, etc. Other chlorinated hydrocarbons under investigation included: dichlorendomethylene-hexahydrophthalic-anhydride, hexachlorendomethylele-tetrahydrophthalic-anhydride, chlorotetrahydrophthalic acid. Result: best flame-proofing action was achieved by modifying the resin with hexachlorendomethylene-tetrahydrophthalic anhydride (HET). The other chlorinated modifiers were less active. The addition of antimony oxyde improved considerably the basic fire-resistance of the polyester resin. Characteristic parameters of the burning of resins (length of flame, loss of weight, rate of burning, temperature of ignition and flame extinction) are affected by the concentration of antimony oxyde in the resin mixture, by the

Card 2/3

Thermodynamics of fire resistance... Z/009/62/000/006/002/002
E112/E153

chlorine content and by the temperature to which the resin is exposed. The parameters' numerical values increase with increased temperature, with the result that at sufficiently high temperatures all differences of flammability between standard- and modified resins disappear. The numerical values of the parameters decrease with an increase of the chlorine content of the resin, and this is in agreement with the free radical theory of flame inhibition.

There are 5 figures and 4 tables.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků,
Pardubice
(Research Institute of Synthetic Resins and
Lacquers, Pardubice)

SUBMITTED: November 30, 1961

Card 3/3

ZVONAR, Vladimir

Accelerant as optical indicator of the copolymerization of
unsaturated polyester resins. Chem prum 12 no.2:106-109 F '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Vladimir

Scientific conference on designing engineering constructions
from glass laminates. Chem pram 12 no.9:525-526 S '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Valdimir

New development trends in the Farbwerke Hoechst Factory.
Chem prum 13 no.5: Supplement: Makromolekularni latky. 13
no.5:278-279 My 1963.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

SOURCE CODE: GE/0004/65/012/011/0660/0663

AUTHOR: Zvonar, V. (Graduate engineer)

(C)

39
B

ORG: Research Institute for Synthetic Resins and Varnishes, headed by Ordelt, Z.
(Graduate engineer; Candidate of Sciences), Pardubice, Czechoslovakia

TITLE: Water absorption of glass-reinforced laminates and effect of water on their
elasticity modulus

SOURCE: Plaste und Kautchuk, v. 12, no. 11, 1965, 660-663

TOPIC TAGS: laminated material, polyester plastic, elasticity, porosity

ABSTRACT: The rate of liquid penetration into laminated materials reinforced by glass fiber has been studied, and the relationship between the elasticity modulus and the liquid content observed. The basic linear correlations between the E modulus and the liquid content were established for various temperatures. The relationships derived are valid for the state of equilibrium. Liquids used in the course of the experiment were: water, methanol, water with an emulsifier, glycerin, gasoline and mineral oil. Test laminates included the eight-layer, heat-treated plastic Y Plast 35, and the unsaturated polyester resin CHS-Polyester 104. The experiment has shown a relationship between the porosity, (regulated by the glass-reinforcement content and the surface treatment), liquid-absorption capacity, and elasticity modulus in the laminates. Orig. art. has: 7 figures, 2 tables, and 11 formulas.

Card 1/2

[KP]

L 362728

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710017-2

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710017-2

ACC NR: AP6009285

SUB CODE: 11/ SUBM DATE: 17Aug64/ ORIG REF: 008/ OTH REF: 003/ SOV REF: 002

ns
Card 2/2

CZECHOSLOVAKIA

ZVONAR, V

Research Institute of Synthetic Resins and Lacquers,
Pardubice

Prague, Collection of Czechoslovak Chemical Communi-
cations, No 1 January 1967, pp 280-287

"Velocity of flow of liquid in capillaries."

ZVONAR, Vladimir; ZAHRADNIKOVA, Anna

Simple method for determining contact angles. Chem prum 15 no.4:
242-244 Ap '65.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.
Submitted December 17, 1964.

ZHONAREV, A. (g. Borovichi, Novgorodskoy oblasti); RAST, S., instruktor

Answers to activists' questions. Sov. profnciuzy 18 no.11:27 Je '62.
(MIRA 15:6)

1. Gruzinskiy respublikanskiy sovet professional'nykh soyuzov,
g. Tbilisi.

(Trade unions)

ZYONAREV, A.; KASPARYAN, A.

Be sensitive to efficiency suggestions. Fin.SBSR 17 no.8:67 Ag '56.
(MIRA 10:12)
(Finance)

66375

21,1800, 21,5300

SOV/120-59-5-28/46

AUTHORS: Gus'kov, Yu.K. and Zvonarev, A.V.

TITLE: A Thermocouple System for the Measurement of Large Neutron Fluxes

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 121 - 122 (USSR)

ABSTRACT: In nuclear-reactor experiments, it is useful to have a simple neutron detector which may be used to measure, rapidly and in a wide range, neutron fluxes in the presence of large γ -ray background. A simple thermocouple system is described in the present paper and is shown in Figure 1. The detector consists of two thermocouples made up of chromel and copper-nickel (56% Cu, 43% Ni) junctions. The detector is shown schematically in Figure 1, in which 1 is an aluminium frame, 2 is an aluminium disc which centres the detector in the reactor channel, 3 is an insulator, 4 are the free ends of the thermocouples, 6 is a steeltube with U_3O_8 enriched (75%) with U^{235} , 7 is a steel tube filled with Pb_3O_4 , 8 is the common end of the thermocouples (the Cu-Ni alloy). 4

Card1/3

66375

SOV/120-59-5-28/46

A Thermocouple System for the Measurement of Large Neutron Fluxes

The amount of U_3O_8 and Pb_3O_4 in the two tubes is about the same. Figure 2 shows the calibration curve for the detector in which the neutron flux is plotted horizontally and the output of the thermocouple in mV, vertically. As can be seen from Figure 1, the thermocouples are connected in opposition so that the e.m.f. measured across the free chromel ends is equal to the difference in the thermal e.m.f. of the two thermocouples. The measured thermal e.m.f. difference is a measure of the heating due to the fission of U^{235} . The heating of the thermocouple due to the housing medium and γ -rays is automatically compensated. The instrument has been tested in an experimental cooled channel of an atomic power station, using fluxes between 5×10^9 and 1.5×10^{13} neutron/cm sec. One of the disadvantages of the instrument is that it is not linear for large neutron fluxes. The settling time of the system is about 5 - 10 min.

Card 2/3

4

66375

A Thermocouple System for the Measurement of Large Neutron Fluxes
SOV/120-59-5-28/46

There are 2 figures and 4 references, 1 of which is Soviet,
1 Swedish and 2 English.

SUBMITTED: September 4, 1958

4

Card 3/3

24(0) 21(4)

SOV/89-7-2-13/24

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V.

Electrical

TITLE: Measuring the Resistivity of Boiling Nitrogen Under Irradiation in a Reactor (Izmereniye elektricheskogo soprotivleniya kip-yashchego azota pri obluchenii yego v reaktore)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 165 - 166 (USSR)

ABSTRACT: The measuring instrument consists of a Dewar flask with two 2.4 cm² copper plates (there is an outline sketch) to which wires of the BPTE wire are soldered. The metallic shielding of the cable reaches to the electrodes up to 10 mm. The electrodes are 5 mm apart. The Dewar flask is filled with 118 g of liquid nitrogen. The resistance was measured with the TO-1 instrument (measuring range 10⁶ to 10¹² Ω). The resistance between the two BPTE cables at a neutron flux of 1.5.10¹³ n/cm².sec is more than 10¹⁰ Ω/m. The electrical resistance of liquid nitrogen was ~10¹² Ω/cm³ at a neutron flux of 10¹¹/cm².sec and 4.10⁹ Ω/cm³ at a flux of 1.5.10¹³ n/cm³.sec. When sufficient liquid evapo-

Card 1/2

Measuring the Resistivity of Boiling Nitrogen Under
Irradiation in a Reactor

SOV/89-7-2-13/24

rated to leave the electrodes free the resistance decreased to $7 \cdot 10^7 \Omega / \text{cm}^3$. During irradiation in the reactor the nitrogen boiled very strongly and the evaporation time decreased by one order of magnitude. A. K. Krasin, Doctor of Physical-mathematical Sciences, took an interest in this work. A. G. Vishnyak cooperated in the experiments. There is 1 figure.

SUBMITTED: April 18, 1959

Card 2/2

213000

69094

S/120/60/000/01/047/051

AUTHORS: Gus'kov, Yu.K., Zvonarev, A.V. and Klychkova, V.P.
EO32/E314

TITLE: Preparation of Uranium^A Layers by Evaporation in Vacuo

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1,
pp 143 - 144 (USSR)

ABSTRACT: In nuclear physics it is frequently necessary to use specimens having a uranium layer deposited on them. The present authors have developed an evaporator which will work for 50 hours and can produce layers of U_3O_8 30 - 40 μ thick in a single evaporation. Various types of evaporators were tried, most of which did not have a sufficiently long working life. The most successful was that shown schematically in Figure 1. The evaporator consists of two concentric and cylindrical tungsten spirals made of a wire 1 mm in diameter. The spirals end in a cone, as shown and are surrounded by a tantalum screen (3). 4 - 5 g of U_3O_8 could be placed in the evaporator and the rate of evaporation was 10 g/h. The corresponding rate of growth of the U_3O_8 layer was

Card 1/3

4

69094

S/120/60/000/01/047/051

E/032/E314

Preparation of Uranium Layers by Evaporation in Vacuo

1 - 1.5 mg/min. The power required was about 1 kW. The evaporation was carried out in a vacuum of 10^{-4} to 10^{-5} mm Hg and provision was made for replacing the U_3O_8 in the spiral without opening up the vacuum chamber. In this way 50 - 80 μ thick layers of U_3O_8 could be obtained without difficulty. The uniformity of the deposit was controlled by measuring the β -activity at various points on the specimen (Damodaran, Ref 1). In Figure 1 the notation is as follows:

- 1) tungsten plate, 5 mm thick;
- 2) lower screening plate made of tantalum, 0.1 mm thick;
- 3) tantalum screen, 0.1 mm thick;
- 4) outer tungsten spiral;
- 5) tantalum support for the outer spiral, 0.1 mm thick;
- 6) inner tungsten spiral;
- 7) tantalum cover 0.5 mm thick supporting the inner spiral;
- 8) nickel screen, 0.5 mm thick;
- 9) mica;
- 10) porcelain tube;
- 11) nickel disc, 5 mm thick and containing an insert for the specimen;
- 12) tungsten nut;
- 13) tungsten rod.

Card2/3

4

69094

S/120/60/000/01/047/051

Preparation of Uranium Layers by Evaporation in Vacuo
E/032/E314

This is an abridged translation.
There are 1 figure and 4 references, 3 of which are
Soviet and 1 is English.

SUBMITTED: December 27, 1958

Card 3/3

4

21.1000,24.6820

77227
SOV/89-8-1-21/29

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V., Klychkova, V. P.

TITLE: A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 1, pp 72-75 (USSR)

ABSTRACT: It is known on the basis of light, X-ray, γ -ray, β - and α -particle irradiation of hole-electron semiconductor systems that an electromotive force can be generated. The authors investigated the effects of fission particles originating in one member of the system chosen to be a uranium semiconductor compound. One had to be careful to choose a material which will not change appreciably its electrical properties. Semiconductors with a large number of original lattice defects satisfy such a requirement, and, having the choice between the polycrystalline semiconductors and monocrystals with appreciable amount of impurities, the authors preferred the polycrystalline oxide

Card 1/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

semiconductors. In all experiments U_3O_8 served as the
hole semiconductor with a high work function, and for
low work function electron semiconductor the authors
utilized BaO, TiO_2 , MgO, and Al_2O_3 . Gold and copper
were electrodes for U_3O_8 , magnesium, and titan for the
electron semiconductor. U_3O_8 -BaO and U_3O_8 - TiO_2 samples
were obtained by thermal vacuum evaporation of semicon-
ductor and electrode layers. In the case of U_3O_8 - Al_2O_3 ,
a layer of Al_2O_3 was sprayed on a titanium base, and
then U_3O_8 was evaporated in vacuum, followed by gold or
copper. This did not work for MgO, so a ceramic layer
of MgO, 0.5-mm thick was taken on which a magnesium
electrode on one side, and U_3O_8 with gold or copper on
the other side was sprayed. Working surfaces were 6

Card 2/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

and 2.8 cm^2 , and thickness of U_3O_8 , BaO , TiO_2 was 5 to 20μ and that of Al_2O_3 was 100 to 200μ . Samples were held between bronze holders, with cooper-constantan thermocouple on one of them for temperature determination. Finally, the whole combination was enclosed in aluminum containers and irradiated in the experimentally cooled channel of the atomic reactor, with a density of neutrons and γ -rays between 10^{10} to $10^{13} \text{ cm}^{-2} \cdot \text{sec}^{-1}$ (depending on its power level). Sample temperature was approximately 120°C . The authors investigated the emf V_{∞} , short-circuit current I_{sc} , load characteristic, surface temperature of the samples, and their resistance R at a potential difference of 1.4 v direct and in reverse. Volt-ampere characteristics were taken before and after exposure. All samples showed presence of an emf. Figure 1 represents the case of $\text{U}_3\text{O}_8\text{-MgO}$.

Card 3/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors: Letter to the
Editor

77227
SOV/89-8-1-21/29

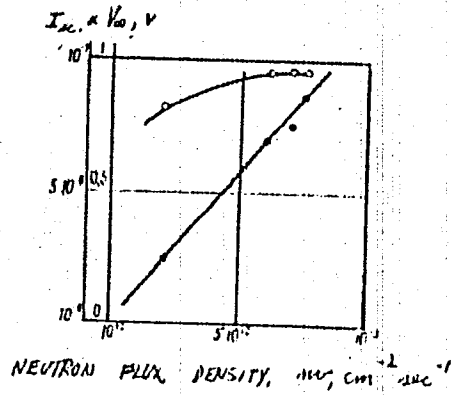


Fig. 1. Emf V_{∞} (o) and current I_{cs} (□) vs neutron flux density nvt for an U_3O_8 -MgO sample.

Card 4/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium;
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

On Fig. 2 is shown the load characteristic, similar to that of a valve photoelement. Neutron flux density was equal to $8 \cdot 10^{12} \text{ cm}^{-2} \cdot \text{sec}^{-1}$. Figure 3 represents typical volt-ampere characteristics of an $\text{U}_3\text{O}_8\text{-Al}_2\text{O}_3$ sample, before and after exposure. A small valve effect is observable after exposure; during irradiation the rectifying coefficient at 1.4 v was between 2 and 10. Figure 4 shows large variations of all characteristics. Special experiments were performed to check the role of the uranium fission fragments in the emf generation process. Some samples irradiated with γ -rays showed three times weaker effect than in the case of neutron irradiation. This compares favorable with the relative ionization of γ -rays and neutrons. One double sample of $\text{U}_3\text{O}_8\text{-Al}_2\text{O}_3$ was prepared, utilizing on one side a uranium sample 10% enriched in U^{235} while on the other, natural U_3O_8 was used. The

Card 5/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

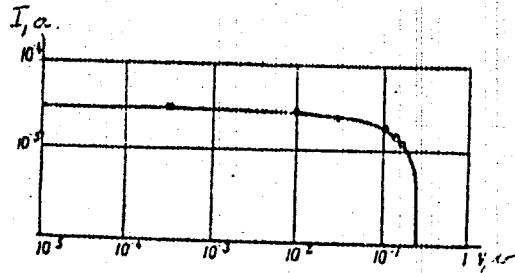
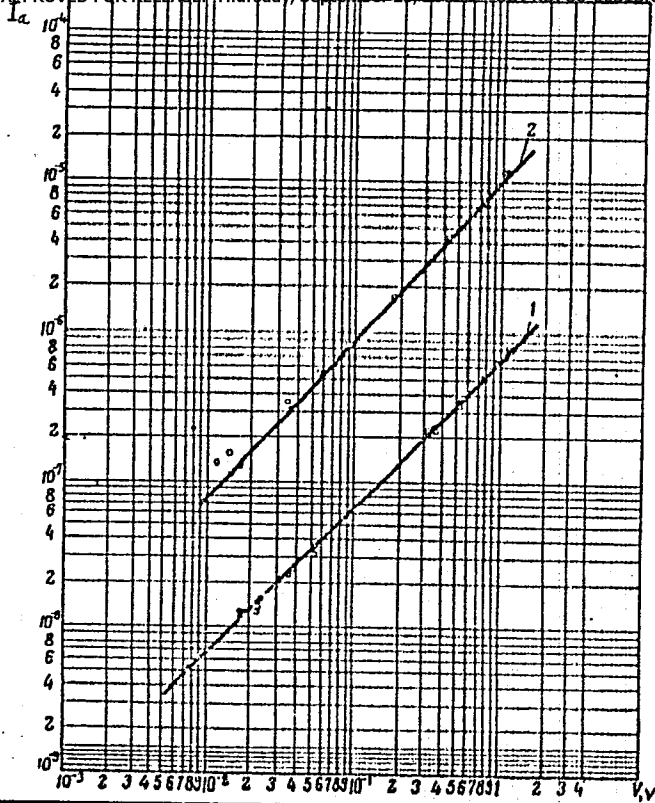


Fig. 2. Load characteristics of an U_3O_8 -MgO sample.



77227, SOV/89-8-1-21/29

Fig. 3. Volt-ampere characteristics of the $U_3O_8-Al_2O_3$ sample before (curve 1) and after (curve 2) exposure in reactor: ●, negative potential on the titanium electrode; ○, positive potential on the titanium electrode.

ZVOLINSKIY, V. P.

Conference devoted to the discussion of the concept of electro-
negativity. Zhur. VKHO 8 no.2:223-224 '63.

(MIRA 16#4)

(Chemical affinity—Congresses)

ZVOLINSKIY, V.P., nauchnyy sotrudnik

Lomonosov on petroleum. Nauka i zhizn' 30 no.6:15 Je '63.
(MIRA 16:7)

1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.

(Petroleum geology)

(Lomonosov, Mikhail Vasil'evich, 1711-1765)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DANILEPOV, B.S.;
ZVOL'SKA, V.; ZVOISKIY, I.

Conversion electrons from Tu^{165} . Izv. AN SSSR. Ser. fiz.
25 no.9:1092-1095 '61. (MIRA 14:8)

(Thulium--Isotopes)

(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.;
ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of Yb¹⁶⁶ → Tu¹⁶⁶ → Er¹⁶⁶. Izv AN SSSR. Ser. fiz. 25
no.10:1217-1227 0 '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova,
Ob'yedinennyy institut yadernykh issledovaniy.
(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

3

S/020/61/136/002/014/034
B019/B056

AUTHORS: Grigor'yev, Ye. P., Gromov, K. Ya., Dzhelepov, B. S.,
Corresponding Member of the AS USSR, Zvol'ska, V.,
Zolotavin, A. V., Veys, M., and Van Yun-yuy

TITLE: The Decay of the Two-hour Isotope Lu¹⁶⁸

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 325-328

TEXT: In the lutetium fraction forming in the course of an irradiation of tantalum with 660-Mev protons, conversion lines were discovered, which had a period of two hours. The authors investigated the lutetium isotope to which these lines belong. For this purpose they used a β -spectrometer with double focusing, the magnetic field was measured by means of proton resonance, and calibration was carried out according to exactly known lines. Recording was carried out by means of two Geiger-Müller counters. Three conversion lines with a period of (2.15 ± 0.20) hours were discovered; closer details are given in Table 1. By comparing the energy differences between these three lines with X-ray data, it was found that the Lu-isotope goes over into an ytterbium isotope. From the close study

Card 1/5
2

The Decay of the Two-hour Isotope Lu¹⁶⁸

S/020/61/136/002/014/034
B019/B056

of the known Lu-isotopes, of their decays, and their spectra, the authors come to the conclusion that the required isotope with a period of 2.15 hours must be ${}_{71}\text{Lu}^{168}$, which has an odd-odd deformed nucleus. Fig. 3 shows the decay scheme of this isotope. There are 3 figures, 3 tables, and 5 references: 4 Soviet and 1 US. ✓

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova
(Leningrad State University imeni A. A. Zhdanov)
Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: October 6, 1960

Card 2/E₂

S/048/62/026/001/012/018
B125/B102

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., ~~Zvol'ska, V.~~, Zolotavin,
A. V., Malysheva, T. V., Khotin, B. A., and Adam, I.

TITLE: Conversion electrons of the short-lived platinum and tungsten
isotopes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
no. 1, 1962, 120 - 124

TEXT: The conversion electron spectra of the platinum and the tungsten
fractions were measured by a β -spectrometer with double focusing by the
method of nuclear resonance in the intervals 68 - 106 kev, and 70 - 90
kev, respectively. The neutron-deficient platinum and tungsten isotopes
were produced by bombarding gold with 660-Mev protons. Table 1 gives the
parameters of the 16 lines obtained for the platinum fraction. 7 of
these lines have been newly discovered. The 106.43-kev transition cannot
be attributed to one of the Pt isotopes but only to an Ir isotope. The
intensity ratio of the lines L_{II} and L_{III} suggests an E2 or E3-type
transition. Also for the 110.10-kev transition in an iridium nucleus
Card 1/83

Conversion electrons of the...

S/048/62/026/001/012/018
B125/B102

the isotope on whose decay transition takes place cannot be determined due to its insufficiently accurate half line. The L_I , L_{II} , L_{III} lines with the energies 96.71, 97.25 and 98.87 keV of the 110.10-keV transition have a half life of (20 ± 0.3) hr. The ratio of the line intensities of inner conversion on the L-subshells suggests a transition of type $E1$ or $E2+M1$. Also the 93.94-keV transition mentioned in 1960 at the X Soveshchaniye po yadernoy spektroskopii (Tenth Congress on Nuclear Spectroscopy) in Moscow takes place in an iridium nucleus. The three conversion lines with the half life (2.6 ± 0.6) hr and the energies 72.4, 74.3, and 83.2 keV which the authors studied in the 70 - 90-keV spectral range belong to the decay of W^{176} or W^{177} . The first two lines are M- and N-lines of the 74.9-keV transition in Ta. The intensities of the (L_I+L_{II}) , L_{III} , M, and N conversion lines of the well-known transition with $h\nu = 88.35$ keV ($2^+ \rightarrow 0^+$) in Hf^{176} initially increase with the half life (2.5 ± 0.4) hr and then decrease with the half life 8 hr of Ta^{176} . The half life 2.5 hr of W^{176} obtained by the author differs essentially from the value obtained by G. Wilkinson. There are 2 figures, 7 tables,

Card 2/53

Conversion electrons of the...

S/048/62/026/001/012/018
B125/B102

and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: G. Wilkinson, Phys. Rev., 80, 495 (1950).

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of Leningrad State University imeni A. A. Zhdanova). Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy)

Table 1. Energies and half lives of the intensity decrease of some conversion lines of the platinum fraction. ✓
Legend: (1) $T_{1/2}$ (hr); (2) identification; (3) isotope.

Card. 3/8
3

40098

S/048/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzhelepov, B. S., Zvol'ska, V., Zvol'skiy, I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26
no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167} , the γ -spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β -spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 keV; whereas for $E_e < 56$ keV the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-MeV protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of
Card 1/2

S/048/62/026/008/009/028
B104/B102

The Tu^{167} decay scheme

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables.

Table 1. Relative intensities of Tu^{167} γ -rays.

Legend: (1) E_γ , keV, (2) results, (3) K. Gromov, et al., Materialy III. Soveshohaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

E_γ , keV	(2)	(3)	(4)
207,9	240 ± 35	100	100
531,8	100	3,2 ± 0,5	5,6
700	3,6 ± 0,5	(~0,8)	—
790	< 0,15	2,8 ± 1	—
880	< 0,15	~1,1	—

Card 2/2

GROMOV, K.Ya.; ZHELEEV, Zh.T.; ZVOL'SKA, V.I.; KALINNIKOV, V.G.

Decay of Er^{161} . IAd. fiz. 2 no. 5: 783-793 N '65.

(MIRA 18:12)

1. Ob'yedinennyy institut yadernykh issledovaniy. 2. Sotrudnitsa
Prazhskogo Instituta yadernykh issledovaniy, Chekhoslovakiya
(for Zvol'ska).

ACC-NR: AP6016896

SOURCE CODE: UR/0367/65/002/005/0783/0793

AUTHOR: Gromov, K. Ya.; Zhelev, Zh. T.; Zvol'ska, V.; Zvol'ska, V.; Kalinnikov, V. G.
ORG: Joint Institute of Nuclear Research (Ob'yedinyanyy Institut yadernykh issledovaniy); Zvol'ska/Prague Institute of Nuclear Research (Pražský institut yadernykh issledovaniy)

TITLE: Decay of Er sup 161

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 783-793

33
D

TOPIC TAGS: radioactive decay, positron, erbium, holmium, spectrometer, electron spectrum

ABSTRACT: ¹⁷ Positron radiation of Er¹⁶¹ ($E_0 = 820 \pm 40$ keV) was observed with a triple-focusing magnetic spectrometer. Data are presented for the conversion electron spectrum and the multiplicity of certain transitions in the Ho¹⁶¹ nucleus. The Er¹⁶¹ → Ho¹⁶¹ decay-scheme is determined and presented. The 1897 and 1943 keV levels are interpreted as three-quasi-particle states. The authors express deep thanks to A. V. Kudryavtsova for the help on the work and to N. I. Pyatov and V. M. Mikhaylov for checking the decay-scheme. Orig. art. has: 5 figures and 2 tables. [SRS]

SUB CODE: 20 / SUBM DATE: 09Apr65 / ORIG REF: 011 / OWH REF: 010

SOV REF: 012

Card 1/1 BLG

2

S/C48/63/027/002/005/023
B104/8180

AUTHORS:

Orlov, K. Ya., Dotsyepov, B. S., Zvol'skii, V.,
Zvol'skiy, I., Poltavin, A. V., Pelekis, E. L., and
Pelekis, E. L.

TITLE:

The Tu^{165} decay scheme

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 27, no. 2, 1963, 195-199

TEXT. The decay scheme of Tu^{165} suggested in a previous work by the authors (Izv. AN SSSR, Ser. fiz., 25, 1032 (1961)) was checked by $\gamma\gamma$ -coincidence tests and by determining the multipole orders in the E_{α}^{165} transitions. The spectrum of the conversion electrons was taken with a double focusing β -spectrometer in the range 5-60 keV. From the intensity ratios the multipole order for most transitions with energies below 40 keV could be determined. The coincidences were determined on a β -channel analyzer. The γ -ray scheme shown in the figure was constructed from the results. It is identical with that of the previous part 1/3

The Tu^{165} decay scheme

S/046/63/027/002/005/023
B104/B130

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.

Legend: (1) 29 hours; (2) 10 hours.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.;
KALINNIKOV, V.G.

Decay of Tu^{163} . Izv.AN SSSR.Ser.fiz. 27 no.2:182-194 F '63.
(MIRA 16:2)
(Thulium isotopes--Decay)

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; LEBEDEV,
N.A.; URBANETS, Ya.

Decay scheme of Tu^{167} . Izv. AN SSSR. Ser. fiz. 26 no.8:
1019-1026 Ag '62. (MIRA 15:11)

(Thulium--Decay)

GRIGOR'YEV, Ye.P.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZOLOTAVIN, A.V.;
MALYSHEVA, T.V.; KHOTIN, B.A.; ADAM, I.

Conversion electrons from short-lived platinum and tungsten
isotopes. Izv. AN SSSR. Ser. fiz. 26 no.1:120-124 Ja '62.
(MIRA 15:2)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo
gosudarstvennogo universiteta im. A.A.Zhdanova, Ob'yedinennyy
institut yadernykh issledovaniy i Institut geokhimii i
analiticheskoy khimii im. V.I.Vernadskogo.

(Electrons)

(Platinum—Isotopes)

(Tungsten—Isotopes)

CZECHOSLOVAKIA/Human and Animal Physiology. Lactation

T-10

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65594

Author : Pachnerova Eva, Brutar Vlastimil, Zvolaska Eva

Inst : -

Title : The Possibility of Augmenting Lactation.

Orig Pub : Lekar. listy, 1954, 9, No 1, 10-14

Abstract : No abstract

Card : 1/1

Possibility of increasing of milk secretion in Lactation; 2nd
communication. Cesk. gyn. 19 no.4:275-279 July 54.

1. Z I. por. klin., predn. prof. MUDr Karel Klaus.
(LACTATION, physiology
milk secretion increasing, results of exper.)

SOV/48-23-7-16/31

21(7)
AUTHORS:

Bunakov, V. Ye., Dzhelepov, B. S., Zvol'skiy, I., Sergiyenko, V.A.

TITLE:

The Coincidences of the Conversion Electrons in the Decay
 $\text{Se}^{75} \rightarrow \text{As}^{75}$ (Sovpadeniya konversionnykh elektronov pri raspade
 $\text{Se}^{75} \rightarrow \text{As}^{75}$)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 7, pp 859-863 (USSR)

ABSTRACT:

The authors investigated, by means of a lens- β -spectrometer, the coincidences of the conversion electrons of the above-mentioned decay, the isotope Se^{75} being obtained by a (n, γ) -reaction in the irradiation of the enriched isotope Se^{74} . The decay of Se^{75} was investigated in a number of papers; the lines of the γ -spectrum and the coincidences are indicated. The spectrum, recorded by the spectrometer, of the conversion electrons of this decay is shown in figure 1, and is supplemented by the level scheme. The observed coincidences of conversion electrons are indicated, and it is ascertained that their relative number lies between 0.5 and 3. The coincidences of various lines recorded by the spectrometer are shown in

Card 1/2

The Coincidences of the Conversion Electrons
in the Decay $\text{Se}^{75} \rightarrow \text{As}^{75}$

SOV/48-23-7-16/31

several diagrams, and the results are discussed in detail. Finally, it is stated that the results obtained improve the data of previous papers (Refs 3-5). The authors thank A. V. Zolotavin for placing at their disposal the isotope Se^{75} , and mention L. Gorzhak, student of the LGU, who participated in the measurements. There are 5 figures, 1 table, and 6 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A. A. Zhdanov)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DZHELIZHOV, B.S.;
ZVOL'SKA, V.; ZVOLSKIY, I.

Conversion electrons from Tm^{165} . Izv. AN SSSR. Ser. fiz.
25 no.9:1092-1095 '61. (MIRA 14:8)

(Thulium--Isotopes)

(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.;
ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of $\text{Yb}^{166} \rightarrow \text{Tm}^{166} \rightarrow \text{Er}^{166}$. Izv AN SSSR. Ser. fiz. 25
no.10:1217-1227 0 '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova,
Ob'yedinennyy institut yadernykh issledovaniy.
(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

DZHELEPOV, B.S.; ZVOL'SKIY, I.; NIKITIN, M.K.; SERGIYENKO, V.A.

Coincidences between conversion electrons of the dysprosium fraction.
Izv.AN SSSR.Ser.fiz. 25 no.10:1246-1255 0 '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova i
Ob"yedinennyy institut yadernykh issledovaniy.
(Electrons--Spectra) (Dysprosium--Decay)

Coincidences between conversion electrons produced in the decay
of $\text{Ho}^{160} \rightarrow \text{Dy}^{160}$. Izv. AN SSSR. Ser. fiz. 25 no. 10:1228-1245 0
'61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova,
Ob"yedinennyy institut yadernykh issledovaniy.
(Holmium--Decay) (Dysprosium--Decay)

S/048/62/026/002/005/032
B101/B102

AUTHORS: Dzhelepov, B. S., Zvol'skiy, I., Nikitin, M. K., and
Sergiyenko, V. A.

TITLE: Coincidences between conversion electrons resulting from the
Dy¹⁵³ — Tb¹⁵³ decay

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 26, no. 2, 1962, 202-204

TEXT: The coincidences between conversion electrons of the transitions of
80.84 + 82.48; 99.7, and 147.5 + 149.0 keV with Dy¹⁵³ electrons of
170-230 and 173.6 keV were studied (Figs. 1, 2). The Dy fraction was
chromatographically separated from a tantalum target bombarded with
660-MeV protons. The sources contained Dy¹⁵³ ($T_{1/2} = 6.4$ hrs); Dy¹⁵⁵
(10 hrs); Dy¹⁵⁷ (8 hrs); Dy¹⁵⁹ (144 days); Tb¹⁵³ (2.3 days); and Tb¹⁵⁵
(5 days). As the measurements with a double-lens beta-ray spectrometer
began 18 hrs after the irradiation of the Ta target and took about 15 hrs,
the short-lived Dy isotopes with $A < 153$ had already decayed. The Dy

Card 1/0 3

Coincidences between conversion...

S/048/62/026/002/005/032
B101/B102

preparation was precipitated onto a slightly aluminized collodion film. It is concluded from the experimental data that the 80.8-, 163.3-, and 253.3-kev levels excited in the Dy¹⁵³ decay do exist in Tb¹⁵³. Ye. N. Rozhin, K. Ya. Gromov, and V. A. Khalkin are thanked for assistance. There are 3 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Leningradskiy gos. universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Fig. 1. Coincidences of 80.84 Dy¹⁵³ + 82.48 Dy¹⁵³ + 83.01 Dy¹⁵⁷ electrons. Broken line: spectrum of conversion electrons, recorded by one half of the spectrometer. Continuous line: count rate of coincidences.

Legend: abscissa: H₀, oe·cm. Ordinate: left: N_{single} · 10⁻³ · min⁻¹;
right: N_{coinc} · 10⁻² hr⁻¹.

Card 2/0 3

Coincidences between conversion...

S/048/62/026/002/005/032
B101/B102

Fig. 2a. $N_{\text{single}} \cdot 10^{-4} \text{ min}^{-1}$ as a function of H_{G} .

Fig. 2b. spectrum of conversion electrons. Diagram (a): coincidences of K99.7 electrons of Dy^{153} ; diagram (b): coincidences of L80.84 + L82.48 electrons of Dy^{153} + L83.01 electrons of Dy^{157} ; diagram (g): coincidences of K147.5 + K149.0 + L99.7 electrons of Dy^{153} .

Legend: abscissa: H_{G} , oe.cm; ordinate of diagrams (a), (b), and (g): $N_{\text{coinc}} \cdot \text{hr}^{-1}$.

Card 3/4 3

40098

S/O48/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzheleпов, B. S., Zvol'ska, V., Zvol'skiy,
I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26
no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167} , the γ -spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β -spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 keV; whereas for $E_e < 56$ keV the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-MeV protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of
Card 1/2

The Tu^{167} decay scheme

S/048/62/026/008/009/028
B104/B102

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables. f

Table 1. Relative intensities of Tu^{167} γ -rays.

Legend: (1) E_{γ} , kev, (2) results, (3) K. Gromov, et al., Materialy III. Soveshchaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

(1)	(2)	(3)	(4)
207,9	240±35	100	185
531,8	100	100	100
700	3,6±0,5	3,2±0,5	5,6
790	~0,15	~0,8	—
880	~0,15	2,3±1	—
	~0,1	~1,1	—

Card 2/02

GROMOV, K.Ya.; YENCHEV, D.A.; ZHELEV, Zh.T.; ZVOL'SKIY, I.; KALINNIKOV, V.G.;
KUZNETSOV, V.V.; MA KHO IK; MUZIOL', G.; KHAN' SHU-ZHUN' [Han Shu-jun]

Decay scheme of Tb^{152} . IAd. fiz. 1 no.4:562-572 Ap '65. (MIRA 18:5)

1. Ob'yedinenny institut yadernykh issledovaniy.

APPROVED FOR RELEASE: Thursday, September 26, 2002
GROMOV, K.A.; DZHEZEV, B.S.; ZVOLSKII, V.; ZVOLSKII, I.;
KALINNIKOV, V.G.

Decay of Tu^{163} . Izv. AN SSSR. Ser. fiz. 27 no. 2:182-194 F '63.
(MIRA 16:2)
(Thulium isotopes--Decay)

8 048 66 007 002/009 023
004/00

AUTHORS: I. M. G. ...
TITLES: The Tu^{165} decay scheme
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 27, no. 4, 1961, 105-109

TEXT The decay scheme of Tu^{165} suggested in a previous work by the
authors (Izv. AN SSSR, Ser. fiz. 1961, 105-109) was checked by
 $\gamma\gamma$ -coincidence tests and by determining the multipole orders in the
 Er^{165} transitions. The spectrum of the conversion electrons was taken
with a double focusing spectrograph in the range 1-60 keV. From the
observed ratios the multipole order for each transition at given energies
was determined. The results were compared with the previous work.
The results are in good agreement with those of the previous
Card 1/3

The Tu^{165} decay scheme

S/048/63/027/002/005/023
B/04/3180

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.

Legend: (1) 23 hours; (2) 10 hours.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOI'SKIY, I.; LEBEDEV,
N.A.; URBANETS, Ya.

Decay scheme of Tu^{167} . Izv. AN SSSR. Ser. fiz. 26 no.8:
1019-1026 Ag '62.

(MIRA 15:11)

(Thulium--Decay)

1. ZVEN'SKIY
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

2. USSR (600)
4. Briquets (Fuel)
7. Briquetting lumber waste. Za ekon. mat. no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

ZVOL'SKIY, P.I.

Results of the revision of plans and estimates in the Perm
Economic Region. Prom.stroi. 37 no.10:7-10 0 '59.
(MIRA 13:2)

1. Leningradskiy Promstroyproyekt.
(Perm Province--Construction industry--Consts)

ZVOL'SKIY, S. T.

ZVOL'SKIY, S. T.: "Determination of the relative content of isotopes in bicomponential low-activity mixtures using the beta-ray absorption method." Kiev State Pedagogical Institute imeni A. M. Gor'kiy. Kiev, 1956.
(Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

SO: Knizhnaya Letopis', No. 26, 1956

ZVOL'SKIY, S.T. [Zvol's'kiy, S.T.]

All-Union Conference on Peaceful Use of Atomic Energy. Geol. zhur.
18 no.1:109-110 '58. (MIRA 11:5)
(Atomic power--Congresses)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol'skyi, A.IE.]

Determination of the moisture content and compactness of soils
by means of radioactive isotopes. Geol.zhur. 18 no.5:12-22
'58. (MIRA 12:1)

(Soils--Analysis) (Radioisotopes)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710017-2
CIA-RDP86-00513R002065710017-2"

ZVOL'SKIY, S. (Zvol's'kiy, S.), kand.fiziko-matem.nauk; LYAL'KO, V., inzh.-
geolog

The rays that look into the depths. Znan. ta pratsia no.5:6-7 My '60.
(Prospecting--Geophysical methods)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol's'kiy, S.T.]

Results of the utilization of trace neutrons and gamma rays in the
study of soil moisture and density. Geol. zhur. 20 no. 4:45-53 '60.
(MIRA 14:4)

(Soil physics) (Trace elements) (Gamma rays)

BABINETS, Audrey Yevtkhiyevich; ZVOL'SKIY, Stanislav Timofeyevich;
BURKSER, Ye.S., otv.red.; SHTUL'MAN, I.F., red.izd-va; YEFIMOVA,
M.I., tekhn.red.

[Investigation of the compactness and moisture content of soils
by means of radioactivity] Issledovanie plotnosti i vlazhnosti
gruntov metodami radioaktivnykh izlucheni. Kiev, Izd-vo
Akad.nauk Ukrainskoi SSR, 1961. 139 p. (Akademiia nauk URSR,
Kiev, Instytut geologichnykh nauk. Trudy. Seriia gidrogeologii
i inzhenernoi geologii, no.6.). (MIRA 15:5)

1. Chlen-korrespondent AN USSR (for Burksér).
(Radioactivity) (Soil research)

2 VOLS SKIP, 5.7

102

PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniya v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. g. Riga, v 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopayemykh (Radioactive Isotopes and Nuclear Radiation in the National Economy of the USSR; Transactions on the Symposium Held in Riga, April 12 - 16, 1960, in 4 volumes. v. 4: Prospecting, Surveying, and Mining of Mineral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy; ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A. Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

Radioactive Isotopes and Nuclear (Cont.)

SCV/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tekhnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

Card 2/11

Radioactive Isotopes and Nuclear (Cont.)

SO7/5592

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Alekseyev, F. A. Present State and Future Prospects of Applying the Methods of Nuclear Geophysics in Prospecting, Surveying, and Mining of Minerals	5
Bulashevich, Yu. P., G. M. Voskoboynikov, and L. V. Misyukin. Neutron and Gamma-Ray Logging at Ore and Coal Deposits	19
Gordeyev, Yu. I., A. A. Mukher, and D. M. Srebrodol'skiy. The	
Card 3/11	

- and Isotopes for the Exploration of Oil-Bearing Regions in the
ChIASSR (Chechen-Ingush ASSR) and Stavropol'skiy Krai 210
- Shapiro, D. A. Application of Radioactive Radiation and Isotopes
For the Exploration of Oil Wells in Tatariya 219
- Blankov, Ye. B., and T. N. Blankova. Use of the Method of In-
duced Activity for Controlling the Flooding of Oil Fields in
Tatariya 226
- Dvorkin, I. L., B. M. Orlynskiy, and A. N. Plokhonnikov. Use
of the Anomalous Neutron Parameters of Chlorine Nuclui to Con-
trol the Flooding of Oil Fields 237
- Babinets, A. Ye., and S. T. Zvol'skiy. Results of Using the
Method of Scattered Neutrons and Gamma Radiation in Studying
Rock Moisture and Density 246
- Sokolov, I. Yu., V. A. Polyakov, and V. V. Lushnikov. Appli-
cation of Radioactive Indicators in Studying the Concentration
Card 9/11

URBANEC, J.; KAJFOSZ, J.; ZVOLSKY, J. (Zvol'skiy, I.); NOVGORODOV, A.

Investigation of Dy155 → Tb155 decomposition. Chekhosl fiz
zhurnal 13 no.8:573-578 '63.

1. Laboratoriya yadernykh problem, Ob'yedinennyy institut
yadernykh issledovaniy, Dubna, SSSR.

ZVOLSKY, Josef, dr.

New trends in oral hygiene. Prum potravln 13 no.4:189-190
Ap '62.

1. Severoceske tukove zavody, n.p., Usti nad Labem.

ZVOLSKY K.

J-11

CZECHOSLOVAKIA /Chemical Technology. Chemical Products and
Their Application - Fats and oils. Waxes. Soap.
Detergents; Flotation reagents

Abs Jour : Referat Zhur - Khimiya, No 2, 1958, 6078

Author : Zvolsky K., Redlich P.

Inst : Not given

Title : Chromatography in the Industry of Fats

Orig Pub : Prumysl potravın, 1955, 6, No 11, 559

Abstract : It is shown that it is possible to separate, by the chromatographic method, 7 pure fat acids (lauric, myristic, palmitic, stearic, butyric, linolenic and erucic).

Card 1/1

ZVOJSKY, P.; MALINA, L.

Mental factors in vitiligo. Cesk. psychiat. 59 no.4:222-228
Ag '63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU
v Praze Dermatologicka klinika lekarske fakulty hygienicke
KU v Praze.

(VITILIGO) (PSYCHOLOGY)

ZVOLSKY, P.

The age factor in the outcome of therapeutic results in alcoholics.
Cesk. psychiat. 58 no.5:321-323 0 '62.

1. Psychiatricka klinika fak. vseob. lek. University Karlovy v Praze.
(ALCOHOLISM) (AGING)

ZVOLSKY, P.

Genetics in psychiatry. Cas. lek. cesk. 102 no.50:234-236
13 D'63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU v
Praze; prednosta: prof. dr. V.Vondracek, DrSc.

*

ZVOLSKY, P., Psychiatric Clinic (Psychiatricka klinika), Faculty of General Medicine (Fakulta vseobecneho lekarstvi), Charles University, Prague, and MALINA, L., Dermatological Clinic (Dermatologicka klinika), Faculty of Medical Hygiene (Lekarska fakulta hygienicka), Charles University, Prague.

"Psychic Factors in Vitiligo"

Prague, Ceskoslovenska Psychiatrie, Vol LIX, No 4, August 63, pp 222-228.

Abstract [Authors' English summary]: Two groups of patients suffering from vitiligo were investigated from the view point of psychic factors in the origin and development of the disease. It was found that the random group, and more so the group with stressful factors linked to the onset of the disease, differed significantly from the control group. Authors argue against the view that psychic factors play a decisive role in the development of vitiligo. Fifteen references, including 1 Czech.

HASKOVEC, L.; ZVOLSKY, P.; FALTUS, F.

Neuroses in the general practice. (A group of neurotics from the center of district physicians and its comparison with a similar group from a psychiatric clinic). Cesk. psychiat. 61 no.5:314-330 0 '65.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi Karlovy University v Praze.

ACC NR: AP6031816

AUTHOR: Haskovec, L.---Gashkovets, L.; Zvol'skiy, P.---Zvol'skiy, P.; Faltus, F.---
Faltus, F. 16
B

ORG: Psychiatric Clinic, Faculty of General Medicine, Charles University, Prague
(Psychiatricka klinika fakulty vseobecneho lekarstvi KU)

TITLE: Neurosis ²² in the outpatient offices of general practitioners

SOURCE: Ceskoslovenska psychiatrie, no. 5, 1965, 314-330

TOPIC TAGS: psychoneurotic disorder, clinical medicine, health, psychology, psychiatry

ABSTRACT: Detailed study of 103 outpatient neurotic patients from various general practitioners in Prague compared with clinic patients by a number of criteria. In general, the former were either very severe and chronic neurotics or very early and mild cases, the clinic cases being more homogeneous in this regard. In former patients, somatic and occupational problems predominated; in the clinic patients, affective and sexual or marital ones overshadowed everything else. Conclusions for practice and public health policy. Orig. art. has: 17 tables. [Based on authors' Eng. abst.] [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 004

BICAN, Josef, inz. CSc.; ZVONAR, Ladislav, inz.

Alloys for thermocouples used in the metallurgical industry.
Hut listy 19 no. 6:421-425 Je '64.

1. Research Institute of Metals, Panenske Brezary (for Bican).
2. Kevohuis Vestec National Enterprise (for Zvonar).

ZVONAR, Vladimir

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and
Their Application, Part 4. - Varnishes, Faints,
Paint Coatings.

H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

Author : Vladimir Zvonar.

Inst :

Title : Colorimetric Determination of Cobalt in Siccatives.

Orig Pub: Chem. prumysl, 1957, 7, No 9, 512-514.

Abstract: A rapid and simplified method of quantitative de-
termination of Co in siccatives is proposed: a
sample containing from 0.4 to 4.0 mg of Co is boiled
with 20 ml of dilute HCl until it decomposes (about
10 min.), after which it is diluted with acetone to
100 ml and colormetered with NH_4 using a calibration
curve. The relative error of this determination is 1

Card : 1/2

CZECHOSLOVAKIA/Chemical Technology, Chemical Products and
Their Application, Part 4. - Varnishes, Paints,
Paint Coatings. H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

to 2% usually, but it reaches 5%, if the Co content was very great or very little, i.e., the error is of the same order as in the case of methods of Co determination requiring much time (combustion of the sample etc.). The content of Mn and some other metals in the siccative interferes with the determination accuracy; Fe should be preliminarily converted into pyrophosphate complex.

Card : 2/2

Distrs: $H_2O(j)$

Melt viscosities of low-molecular-weight polycondensates. Miloslav Bohdanecký, Jiří Tarnochyna, and Vladimír Zvonaf (Research Inst. Synthetic Resins & Varnishes, Pardubice, Czech.). *Chem. Průmysl* 8(33), 383-8(1958). Novolaks were prepd. by the condensation of *p*-tert-butylphenol and HCHO (molar ratio 1:1) in 1% H_2SO_4 at 100°. After purification by distn. at 200-60° and 1 mm. Hg under N, they were fractionated from 10% NaOH with H_2O . Polyesters were prepd. from phthalic and maleic anhydride (molar ratio 1:4) and ethylene glycol by heating under CO_2 . The mol. wts. of the novolaks were detd. cryoscopically in dioxane and ebulliometrically in toluene. The mol. wts. of the polyesters were detd. by end-group analysis. The melt viscosity of the novolaks was detd. in an evacuated capillary viscometer with a weighed sample fused in. The melt viscosity of the polyesters was detd. in a Höppler microviscometer or a Höppler microplastometer. At const. temp. T , $\log \eta$ was a linear function of the mol. wt. M for the novolaks and a linear function of $\log M$ for the polyesters. This dependence on T was expressed by Vogel's equation: $\log \eta = \log B + A/(T - T_0)$. For the novolaks, $B = 1.60 \times 10^{-4}$, $A = 160 + 0.8M$, and $T_0 = 300$. For polyesters, $B = 1.82$, $A = 3751 \log(M/60)$, and $T_0 = 318$. The temperature cannot be simply related to the activation energy of viscous flow, because it also depends on structural changes such as H-bond assocn. H. Newcombe

15
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2-May
1

ZVONAR, V.

"Multilaminate Glass Textile, a New Construction Material," p. 822.
(STROJIRENSTVI. Vol. 4, No. 11, Nov. 1954; Praha, Czech.)

So: Monthly List of East European Accessions, (EEAL), IC, Vol. 4,
No. 4, April 1955, Uncl..

ZVONAR, V.; NOVY, K.

Working laminated plastics reinforced with Fiberglas. p. 837. (STROJIRENSTVI,
Vol. 6, No. 12, Dec 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81508.

Author : Yuracka F., Zvonar V.

Inst :

Title : Synthesis of Organic Peroxides.

Orig Pub: Chem. prumysl. 1957, 7, No 4, 192.

Abstract: It is possible to have explosions during the preparation of peroxides according to Zwakha's method (Ref. Zhur-Khimiya, 1958, 61842). The danger of explosion can be eliminated by adding dimethyl-dibutyl phthalate (I) or tricresyl phosphate to the reaction mixture. Thus, a phlegmatized peroxide is obtained in liquid form or as a paste, which is used in polymerizations; for instance a 50% solution of $\text{CH}_3\text{COOCCOC}_6\text{H}_5$; or the peroxide

Card : 1/2

ZVONAR, V.

Remarks of the synthesis of organic peroxides.

p. 192 (Chemicky Prumysl. Vol. 7, no. 4, Apr. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAJ) I.C. Vol. 7, no. 2,
February 1958

ZVONAR, V.

Colorimetric determination of cobalt in siccatives.

p. 512 (Chemický Průmysl. Vol. 7, no. 9, Sept. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) IC. Vol. 7, no. 2,
February 1958

I

CZECHOSLOVAKIA/High Polymer Chemistry.

Abstr Jour: Ref Zhur-Khin., No 8, 1959, 29998.

Author : Bohdanecky, M., Tanchyna, J, and Zvonar, V.

Inst :

Title : The Viscosity of Fused Low Molecular Weight
Polycondensates.

Orig Pub: Chem Průmysl, 9, No 7, 302-305 (1958) (in Czech with
English and Russian summaries)

Abstract: It has been found that the Vogel equation gives
an adequate picture of the temperature dependence
of the viscosity of unsaturated polyesters and
fused phenol and p-ter-butylphenol. At constant
temp log increases linearly with the MW of lacquer
resins and varies as the log of the MW of polyesters.
Summary by the authors.

Card : 1/1

80407

Z/009/60/000/01/034/038
E112/E253

5.3832

AUTHORS: Hudeček, Z., and Zvonář, V

TITLE: The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

PERIODICAL: Chemický průmysl, 1960, Nr 1, pp 44-50

ABSTRACT: The authors have studied the properties of laminated glass fibres for corrugated roofing materials. These should be able to transmit as much light as possible. Ideal conditions would be if refractive indices, dispersion and heat-coefficient would be identical for both, the glass fibre and the hardened resin. It has to be born in mind that the optical properties of the resin are changed after setting and polymerisation and the problem is thus reduced to the preparation of a resin which would have identical optical properties to that of the glass fibres. The glass fibres used for the laminates were in all cases boron-glasses, free of alkali of a refractive index 1.548 to 1.553 and an Abbé number 46 to 48. The aim of the present investigation has been the establishing of the fundamental optical properties of unsaturated polyester resins, the effect of starting

Card 1/5

82107

Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

materials and the change of optical properties during polyesterification and copolymerisation. The authors describe methods of testing. Samples to be tested were prepared by pouring the resins on glass plates and hardening at 100°C in an oven. Methylcyclohexanone-peroxide was used as initiator and cobalt naphtenate was the accelerator. The refraction indeces and mean dispersion were measured by Refracto meter, type Meopta, at -20°C, 0°C, 20°C, 40°C. The following variants were studied:

1. Effect of degree of polymerisation: It was seen that during polyesterification the refractive index increases. Particularly rapidly at the beginning of the reaction.
2. Effect of acid: The authors have studied the optical properties of polyester from maleic, itaconic, and citraconic acid with ethylene glycol. The resins were modified with phthalic anhydride. Results are tabulated, indicating that the character of the unsaturated acid has only very little influence on the optical properties. A very much greater influence is exerted by the saturated

8-1-57
Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

dicarboxylic acid which is used as modifier. The greatest increase in the refractive index is caused by chlorinated aromatic acids, such as tetrachloro phthalic acid. Effect of modifying acids are given in two tables. The authors have also established that saturated aliphatic dicarboxylic acids reduce the refractive index of the unsaturated polyester.

3. Effect of dioles: Similarly to the acids, the alcoholic components have also an effect upon the optical properties, although not quite so pronounced. The refractive index does not depend on the length of the chain but on the character of the hydroxyle groups, that means whether they are primary, secondary or tertiary. The refractive index decreases with increased substitution. The presence of a chlorine in the molecule of the diol considerably increases the refractive index, but an ether-linkage works in the opposite way. The lowest refractive indices are obtained from dipropylene glycol. 4

Card 3/5

30407

Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

4. Effect of Monomers: The authors have studied the effect of styrene and methyl methacrylate. Whereas the effect of styrene was negligible that of methyl methacrylate was considerable.

5. Effect of temperature: The refractive index is affected by temperature in a linear relationship but it was seen that the character of the polyester itself exerts only a small effect. The influence of the monomer is of greater importance. The authors conclude from their work that it is almost impossible to produce a glass laminate in which the optical properties of glass and resin can be completely compensated. The best method of modification of optical properties would seem to be the choice of the diole and the saturated dicarboxylic acid, while the unsaturated acids show hardly any effects. The authors suggest as starting materials 1,3-butanediol and cycloolefinic acids. A further modification may be achieved by diluting the polyester resin with methyl methacrylate. The authors were unable to eliminate the differences of thermal coefficient

Card 4/5

80407

Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

between glass and resin.

There are 6 figures, 6 tables and 8 references, 4 of which are German, 1 Czech, 1 Japanese and 1 Swedish.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice (Research Institute of Synthetic Resins and Varnishes, Pardubice) ✓

SUBMITTED: June 30, 1959

Card 5/5

39002
Z/009/62/000/006/002/002
E112/E153

11.2220

AUTHOR: Zvonař, Vladimír

TITLE: Thermodynamics of fire resistance of unsaturated polyester resins

PERIODICAL: Chemický průmysl, no.6, 1962, 321-326

TEXT: Theoretical aspects of the burning and flammability of synthetic resins are discussed. A free radical mechanism is postulated which, similarly to a free radical initiated polymerisation, is characterised by chain propagation, termination, transfer and inhibition. The fire and flame retarding action of some substances, particularly the halogenated hydrocarbons, is based on chain termination but the exact mechanism is unknown. It is proposed that they function by withdrawing free hydrogen atoms or hydroxyl radical by reaction with the halogen. Halogenated hydrocarbons with more labile halogen substituents (bromine or iodine) will, consequently, provide a greater flame retarding efficiency, e.g. hydrogen, containing 15% methyl antimony oxide as a fire retarding filler is discussed. Practical
Card 1/3

Thermodynamics of fire resistance... Z/009/62/000/006/002/002
E112/E153

work includes the determination of the correlation of structure of resin, its thermodynamic parameters and fire resistance. Only chlorinated resin components are considered and the effect of the nature of the chlorine bond on fire resistance is determined. The method of investigation consists of comparing structurally analogous chlorinated and non-chlorinated resin components, e.g. propylene glycole (1,2); 3-chloropropylene glycole (1,2); phthalic acid; tetrachlorophthalic acid, etc. Other chlorinated hydrocarbons under investigation included: dichlorendomethylene-hexahydrophthalic-anhydride, hexachlorendomethylele-tetrahydrophthalic-anhydride, chlorotetrahydrophthalic acid. Result: best flame-proofing action was achieved by modifying the resin with hexachlorendomethylene-tetrahydrophthalic anhydride (HET). The other chlorinated modifiers were less active. The addition of antimony oxyde improved considerably the basic fire-resistance of the polyester resin. Characteristic parameters of the burning of resins (length of flame, loss of weight, rate of burning, temperature of ignition and flame extinction) are affected by the concentration of antimony oxyde in the resin mixture, by the

Card 2/3

Thermodynamics of fire resistance... Z/009/62/000/006/002/002
E112/E153

chlorine content and by the temperature to which the resin is exposed. The parameters' numerical values increase with increased temperature, with the result that at sufficiently high temperatures all differences of flammability between standard- and modified resins disappear. The numerical values of the parameters decrease with an increase of the chlorine content of the resin, and this is in agreement with the free radical theory of flame inhibition.

There are 5 figures and 4 tables.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků,
Pardubice
(Research Institute of Synthetic Resins and
Lacquers, Pardubice)

SUBMITTED: November 30, 1961

Card 3/3

ZVONAR, Vladimir

Accelerant as optical indicator of the copolymerization of
unsaturated polyester resins. Chem prum 12 no.2:106-109 F '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Vladimir

Scientific conference on designing engineering constructions
from glass laminates. Chem pram 12 no.9:525-526 S '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Valdimir

New development trends in the Farbwerke Hoechst Factory.
Chem prum 13 no.5: Supplement: Makromolekularni latky. 13
no.5:278-279 My 1963.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

SOURCE CODE: GE/0004/65/012/011/0660/0663

AUTHOR: Zvonar, V. (Graduate engineer)

(C)

39
B

ORG: Research Institute for Synthetic Resins and Varnishes, headed by Ordelt, Z.
(Graduate engineer; Candidate of Sciences), Pardubice, Czechoslovakia

TITLE: Water absorption of glass-reinforced laminates and effect of water on their
elasticity modulus

SOURCE: Plaste und Kautchuk, v. 12, no. 11, 1965, 660-663

TOPIC TAGS: laminated material, polyester plastic, elasticity, porosity

ABSTRACT: The rate of liquid penetration into laminated materials reinforced by glass fiber has been studied, and the relationship between the elasticity modulus and the liquid content observed. The basic linear correlations between the E modulus and the liquid content were established for various temperatures. The relationships derived are valid for the state of equilibrium. Liquids used in the course of the experiment were: water, methanol, water with an emulsifier, glycerin, gasoline and mineral oil. Test laminates included the eight-layer, heat-treated plastic Y Plast 35, and the unsaturated polyester resin CHS-Polyester 104. The experiment has shown a relationship between the porosity, (regulated by the glass-reinforcement content and the surface treatment), liquid-absorption capacity, and elasticity modulus in the laminates. Orig. art. has: 7 figures, 2 tables, and 11 formulas.

Card 1/2

[KP]

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ACC NR: AP6009285

SUB CODE: 11/ SUBM DATE: 17Aug64/ ORIG REF: 008/ OTH REF: 003/ SOV REF: 002

ns
Card 2/2

CZECHOSLOVAKIA

ZVONAR, V

Research Institute of Synthetic Resins and Lacquers,
Pardubice

Prague, Collection of Czechoslovak Chemical Communi-
cations, No 1 January 1967, pp 280-287

"Velocity of flow of liquid in capillaries."

ZVONAR, Vladimir; ZAHRADNIKOVA, Anna

Simple method for determining contact angles. Chem prum 15 no.4:
242-244 Ap '65.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.
Submitted December 17, 1964.

ZHONAREV, A. (g. Borovichi, Novgorodskoy oblasti); RAST, S., instruktor

Answers to activists' questions. Sov. profnciuzy 18 no.11:27 Je '62.
(MIRA 15:6)

1. Gruzinskiy respublikanskiy sovet professional'nykh soyuzov,
g. Tbilisi.

(Trade unions)

ZYONAREV, A.; KASPARYAN, A.

Be sensitive to efficiency suggestions. Fin.SBSR 17 no.8:67 Ag '56.
(MIRA 10:12)
(Finance)

66375

21,1800, 21,5300

SOV/120-59-5-28/46

AUTHORS: Gus'kov, Yu.K. and Zvonarev, A.V.

TITLE: A Thermocouple System for the Measurement of Large Neutron Fluxes

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 121 - 122 (USSR)

ABSTRACT: In nuclear-reactor experiments, it is useful to have a simple neutron detector which may be used to measure, rapidly and in a wide range, neutron fluxes in the presence of large γ -ray background. A simple thermocouple system is described in the present paper and is shown in Figure 1. The detector consists of two thermocouples made up of chromel and copper-nickel (56% Cu, 43% Ni) junctions. The detector is shown schematically in Figure 1, in which 1 is an aluminium frame, 2 is an aluminium disc which centres the detector in the reactor channel, 3 is an insulator, 4 are the free ends of the thermocouples, 6 is a steeltube with U_3O_8 enriched (75%) with U^{235} , 7 is a steel tube filled with Pb_3O_4 , 8 is the common end of the thermocouples (the Cu-Ni alloy). 4

Card1/3

66375

SOV/120-59-5-28/46

A Thermocouple System for the Measurement of Large Neutron Fluxes

The amount of U_3O_8 and Pb_3O_4 in the two tubes is about the same. Figure 2 shows the calibration curve for the detector in which the neutron flux is plotted horizontally and the output of the thermocouple in mV, vertically. As can be seen from Figure 1, the thermocouples are connected in opposition so that the e.m.f. measured across the free chromel ends is equal to the difference in the thermal e.m.f. of the two thermocouples. The measured thermal e.m.f. difference is a measure of the heating due to the fission of U^{235} . The heating of the thermocouple due to the housing medium and γ -rays is automatically compensated. The instrument has been tested in an experimental cooled channel of an atomic power station, using fluxes between 5×10^9 and 1.5×10^{13} neutron/cm sec. One of the disadvantages of the instrument is that it is not linear for large neutron fluxes. The settling time of the system is about 5 - 10 min.

Card 2/3

4

66375

A Thermocouple System for the Measurement of Large Neutron Fluxes
SOV/120-59-5-28/46

There are 2 figures and 4 references, 1 of which is Soviet,
1 Swedish and 2 English.

SUBMITTED: September 4, 1958

4

Card 3/3

24(0) 21(4)

SOV/89-7-2-13/24

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V.

Electrical

TITLE: Measuring the Resistivity of Boiling Nitrogen Under Irradiation in a Reactor (Izmereniye elektricheskogo soprotivleniya kip-yashchego azota pri obluchenii yego v reaktore)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 165 - 166 (USSR)

ABSTRACT: The measuring instrument consists of a Dewar flask with two 2.4 cm² copper plates (there is an outline sketch) to which wires of the BPTE wire are soldered. The metallic shielding of the cable reaches to the electrodes up to 10 mm. The electrodes are 5 mm apart. The Dewar flask is filled with 118 g of liquid nitrogen. The resistance was measured with the TO-1 instrument (measuring range 10⁶ to 10¹² Ω). The resistance between the two BPTE cables at a neutron flux of 1.5.10¹³ n/cm².sec is more than 10¹⁰ Ω/m. The electrical resistance of liquid nitrogen was ~10¹² Ω/cm³ at a neutron flux of 10¹¹/cm².sec and 4.10⁹ Ω/cm³ at a flux of 1.5.10¹³ n/cm².sec. When sufficient liquid evapo-

Card 1/2

Measuring the Resistivity of Boiling Nitrogen Under
Irradiation in a Reactor

SOV/89-7-2-13/24

rated to leave the electrodes free the resistance decreased to $7 \cdot 10^7 \Omega / \text{cm}^3$. During irradiation in the reactor the nitrogen boiled very strongly and the evaporation time decreased by one order of magnitude. A. K. Krasin, Doctor of Physical-mathematical Sciences, took an interest in this work. A. G. Vishnyak cooperated in the experiments. There is 1 figure.

SUBMITTED: April 18, 1959

Card 2/2

213000

69094

S/120/60/000/01/047/051

AUTHORS: Gus'kov, Yu.K., Zvonarev, A.V. and Klychkova, V.P.
EO32/E314

TITLE: Preparation of Uranium^A Layers by Evaporation in Vacuo

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1,
pp 143 - 144 (USSR)

ABSTRACT: In nuclear physics it is frequently necessary to use specimens having a uranium layer deposited on them. The present authors have developed an evaporator which will work for 50 hours and can produce layers of U_3O_8 30 - 40 μ thick in a single evaporation. Various types of evaporators were tried, most of which did not have a sufficiently long working life. The most successful was that shown schematically in Figure 1. The evaporator consists of two concentric and cylindrical tungsten spirals made of a wire 1 mm in diameter. The spirals end in a cone, as shown and are surrounded by a tantalum screen (3). 4 - 5 g of U_3O_8 could be placed in the evaporator and the rate of evaporation was 10 g/h. The corresponding rate of growth of the U_3O_8 layer was

Card 1/3

4

69094

S/120/60/000/01/047/051

E/032/E314

Preparation of Uranium Layers by Evaporation in Vacuo

1 - 1.5 mg/min. The power required was about 1 kW. The evaporation was carried out in a vacuum of 10^{-4} to 10^{-5} mm Hg and provision was made for replacing the U_3O_8 in the spiral without opening up the vacuum chamber. In this way 50 - 80 μ thick layers of U_3O_8 could be obtained without difficulty. The uniformity of the deposit was controlled by measuring the β -activity at various points on the specimen (Damodaran, Ref 1). In Figure 1 the notation is as follows:

- 1) tungsten plate, 5 mm thick;
- 2) lower screening plate made of tantalum, 0.1 mm thick;
- 3) tantalum screen, 0.1 mm thick;
- 4) outer tungsten spiral;
- 5) tantalum support for the outer spiral, 0.1 mm thick;
- 6) inner tungsten spiral;
- 7) tantalum cover 0.5 mm thick supporting the inner spiral;
- 8) nickel screen, 0.5 mm thick;
- 9) mica;
- 10) porcelain tube;
- 11) nickel disc, 5 mm thick and containing an insert for the specimen;
- 12) tungsten nut;
- 13) tungsten rod.

Card2/3

4

69094

S/120/60/000/01/047/051

Preparation of Uranium Layers by Evaporation in Vacuo
E/032/E314

This is an abridged translation.
There are 1 figure and 4 references, 3 of which are
Soviet and 1 is English.

SUBMITTED: December 27, 1958

Card 3/3

4

21.1000,24.6820

77227
SOV/89-8-1-21/29

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V., Klychkova, V. P.

TITLE: A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 1, pp 72-75 (USSR)

ABSTRACT: It is known on the basis of light, X-ray, γ -ray, β - and α -particle irradiation of hole-electron semiconductor systems that an electromotive force can be generated. The authors investigated the effects of fission particles originating in one member of the system chosen to be a uranium semiconductor compound. One had to be careful to choose a material which will not change appreciably its electrical properties. Semiconductors with a large number of original lattice defects satisfy such a requirement, and, having the choice between the polycrystalline semiconductors and monocrystals with appreciable amount of impurities, the authors preferred the polycrystalline oxide

Card 1/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

semiconductors. In all experiments U_3O_8 served as the
hole semiconductor with a high work function, and for
low work function electron semiconductor the authors
utilized BaO, TiO_2 , MgO, and Al_2O_3 . Gold and copper
were electrodes for U_3O_8 , magnesium, and titan for the
electron semiconductor. U_3O_8 -BaO and U_3O_8 - TiO_2 samples
were obtained by thermal vacuum evaporation of semicon-
ductor and electrode layers. In the case of U_3O_8 - Al_2O_3 ,
a layer of Al_2O_3 was sprayed on a titanium base, and
then U_3O_8 was evaporated in vacuum, followed by gold or
copper. This did not work for MgO, so a ceramic layer
of MgO, 0.5-mm thick was taken on which a magnesium
electrode on one side, and U_3O_8 with gold or copper on
the other side was sprayed. Working surfaces were 6

Card 2/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

and 2.8 cm^2 , and thickness of U_3O_8 , BaO , TlO_2 was 5 to 20μ and that of A_2O_3 was 100 to 200μ . Samples were held between bronze holders, with cooper-constantan thermocouple on one of them for temperature determination. Finally, the whole combination was enclosed in aluminum containers and irradiated in the experimentally cooled channel of the atomic reactor, with a density of neutrons and γ -rays between 10^{10} to $10^{13} \text{ cm}^{-2} \cdot \text{sec}^{-1}$ (depending on its power level). Sample temperature was approximately 120°C . The authors investigated the emf V_{∞} , short-circuit current I_{sc} , load characteristic, surface temperature of the samples, and their resistance R at a potential difference of 1.4 v direct and in reverse. Volt-ampere characteristics were taken before and after exposure. All samples showed presence of an emf. Figure 1 represents the case of $\text{U}_3\text{O}_8\text{-MgO}$.

Card 3/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors: Letter to the
Editor

77227
SOV/89-8-1-21/29

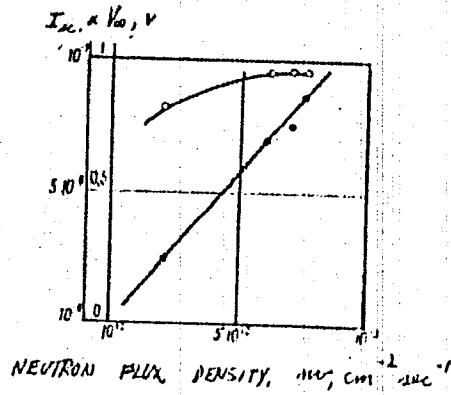


Fig. 1. Emf V_{∞} (o) and current I_{cs} (\square) vs neutron flux density n_{ev} for an U_3O_8 -MgO sample.

Card 4/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium;
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

On Fig. 2 is shown the load characteristic, similar to that of a valve photoelement. Neutron flux density was equal to $8 \cdot 10^{12} \text{ cm}^{-2} \cdot \text{sec}^{-1}$. Figure 3 represents typical volt-ampere characteristics of an $\text{U}_3\text{O}_8\text{-Al}_2\text{O}_3$ sample, before and after exposure. A small valve effect is observable after exposure; during irradiation the rectifying coefficient at 1.4 v was between 2 and 10. Figure 4 shows large variations of all characteristics. Special experiments were performed to check the role of the uranium fission fragments in the emf generation process. Some samples irradiated with γ -rays showed three times weaker effect than in the case of neutron irradiation. This compares favorable with the relative ionization of γ -rays and neutrons. One double sample of $\text{U}_3\text{O}_8\text{-Al}_2\text{O}_3$ was prepared, utilizing on one side a uranium sample 10% enriched in U^{235} while on the other, natural U_3O_8 was used. The

Card 5/10

A Study of Electromotive Forces Generated
in Semiconductor Systems Containing Uranium,
When Irradiated in Reactors. Letter to the
Editor

77227
SOV/89-8-1-21/29

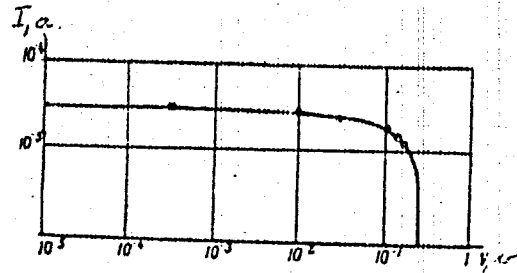
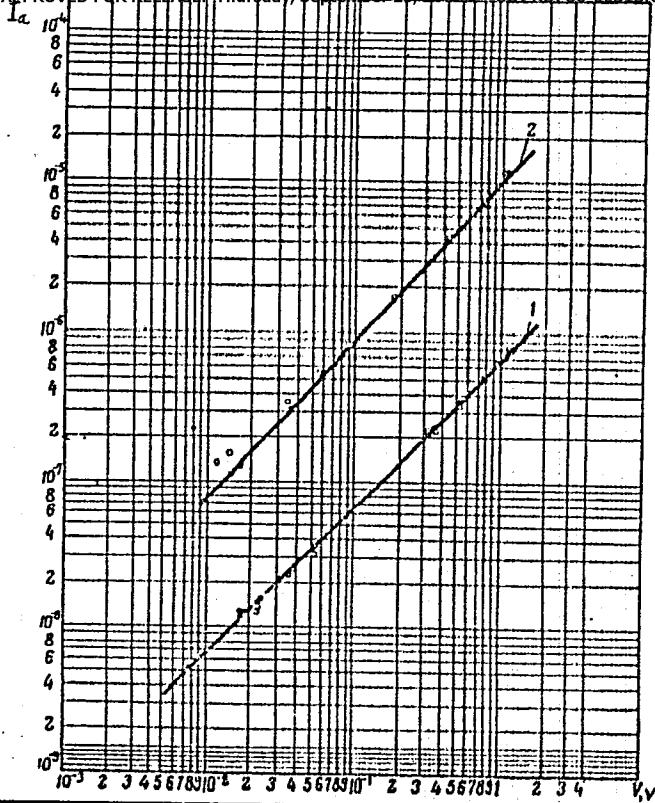


Fig. 2. Load characteristics of an U_3O_8 -MgO sample.



77227, SOV/89-8-1-21/29

Fig. 3. Volt-ampere characteristics of the $U_3O_8-Al_2O_3$ sample before (curve 1) and after (curve 2) exposure in reactor: ●, negative potential on the titanium electrode; ○, positive potential on the titanium electrode.