ALEKSANDROV, A.Yu.; MITROFANOV, K.P.; OKHLOBYSTIN, O.Yu.; POLAK, L.S.; SHPINEL', V.S.

Some features of the Mössbauer effect on Sn^{119} nuclei in organotin oxides. Dokl. AN SSSR 153 no.2:370-373 N '63. (MIRA 16:12)

1. Institut neftekhimicheskogo sinteza AN SSSR i Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova. Predstavleno akademikom A.P.Vinogradovym.

S/0286/64/000/007/0077/0077

ACCESSION NR: AP4031892

AUTHOR: Mel'ttser, L. V.; Shumilovskiy, N. N.; Shpinel', V. S.; Delyagin, N. N.; Bryukhanov, V. A.

TITLE: A device for indicating the correct position of the diaphragm of a motion picture camera. Class 57, No. 161630

SOURCE: Byulleten' izobreteniy i tovarny*kh znakov, no. 7, 1964, 77

TOPIC TAGS: diaphragm position indicator, diaphragm control, objective stop control, camera lens diaphragm, lens diaphragm

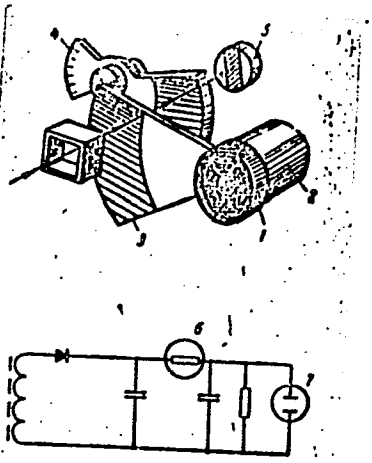
TRANSLATION: The device covered in this author's certificate for indicating the correct position of the diaphragm in the objective of a motion picture camera consists of an indicator and a light flux transducer. In order to simplify the means of indication and simplify the design of the device the indicator is connected to a relaxation generator circuit through the light-sensitive element of the transducer, a photoelement, the illumination of which is governed by two sector blades of varying optical density, one of the blades being rigidly attached to the diaphragm ring of the objective.

Card 1/3

Card

ACCESSION NR: AP4031892

ENCLOSURE: 01



1) diaphragm ring; 2) objective; 3) and 4) sector blades of varying optical density; 5) and 6) photoresistors; 7) neon lamp

Card 3/3

ALEKSANDROV, A. Yu.; BERLYANT, S.M.; KARPOV, V.L.; LESHCHENKO, S.S.; OKHLOBYSTIN, O.Yu.; FINKEL', E.E.; SHPINEL', V.S.

Study by the Mössbauer effect of the behavior of dibutyltin dimaleate as stabilizer in the irradiation of polyethylene. Vysokom. soed. 6 no.11:2105-2107 N '64 (MIRA 18:2)

AP4010298 S/0048/64/028/001/0090/0092

AUTHOR: Danagulyan, A.S.; Strigachev, A.T.; Shpinel', V.S.

TITLE: Decay scheme for Tb^{149} [Report, Thirteenth Annual Conference on Nuclear Spectroscopy held in Kiev, 25 Jan to 2 Feb 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.1, 1964, 90-92

TOPIC TAGS: decay scheme, terbium isotope, terbium 149, conversion electron spectrum, gamma spectrum

ABSTRACT: The present work was a continuation of an earlier investigation of a terbium fraction (A.T.Strigachev, Avtoreferat dissertatsee, M.1962) by means of a magnetic lens spectrograph with photoelectric recording [Abstracter's note: The origin of the Tb fraction is not given, but it was probably obtained by extraction from proton-bombarded tantalum.] The source was prepared by electrolytic deposition of the Tb fraction onto a 0.1 mm diameter platinum wire, which insured a resolution of 0.08%. Several measurements of the conversion electron spectrum were carried out in the energy range from 40 to 700 keV. The emphasis was on identifying the radiations associated with the short-lived (3-4 hours) isotopes Tb^{149} and Tb^{150}. Conversion

Card 1/2

electrons associated with 9 γ-transition were detected; three of these are definitely attributed to Tb^{149} on the basis of the present and earlier measurements. On the basis of the present results and the data of other authors a decay scheme for Tb^{149} is proposed. This shows levels at 165, 352, 816 and 1205 keV in the daughter Gd^{149}. Multipole order assignments are made for some of these transitions. In addition, the better resolution in the present measurements showed that the K line of a 586 keV transition earlier attributed to decay of Tb^{152} actually consists of two close lines due to conversion of a 585.4 keV transition in the decay of Tb^{152} and a 586.5 keV transition in the decay of Tb^{151}. The better resolution also made it possible to separate the L lines of the 271 keV transition in Tb^{152} from the K line of the 315 keV transition in Tb^{152}. "The authors express their gratitude to the radiochemical separation group at the Laboratory of Nuclear Problems for separation of the Tb fraction and for developing the procedure for electrolytic preparation of the source." Orig.art.has: 3 figures.

ASSOCIATION: Nauchno-issledovatel'skii institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta(Scientific Research Inst. of Nuclear Physics, Moscow State University); Laboratoriya yaderny*kh problem Ob"yedinennogo instituta yaderny*kh issledovaniy (Laboratory of Nuclear Problems, Joint Inst. for Nuclear Research)

ALEKSANDROV, A.Yu.; DORFMAN, Ya.G.; LEPENDINA, O.L.; MITROFANOV, K.P.; PLOTNIKOVA, M.V.; POLAK, L.S.; TEMKIN, A.Ya.; SHPINEL', V.S.

Resonance absorption spectra of γ-quanta and the magnetic susceptibility of solutions of some organotin compounds. Zhur. fiz. khim. 38 no.9:2190-2197 S '64. (MIRA 17:12)

1. Institut neftekhimicheskogo sinteza AN SSSR i Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

ACCESSION NR: AP4012566 S/0056/64/046/001/0383/0386

AUTHORS: Mitrofanov, K. P.; Viskov, A. S.; Driker, G. Ya.; Plotnikova, M. V.; Fam, Zui Khiyen; Venevtsev, Yu. N.; Shpinel', V. S.

TITLE: Change in resonance absorption spectra of 23.8 keV gamma rays of Sn-119 during phase transitions in the system $BiFeO_3$-$Sr(Sn_{1/3}Mn_{2/3})O_3$

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 383-386

TOPIC TAGS: resonance absorption, Mossbauer effect, recoilless resonance absorption, ferroelectric antiferromagnetic compound, ferroelectricity, ferro antiferromagnetism, group II stannate, resonance absorption maximum, resonance absorption jump, Mossbauer effect jump, magnetic hyperfine splitting

ABSTRACT: This is a continuation of an earlier investigation by some of the authors (ZhETF v. 44, 2182, 1963) and is aimed at im-

Card 1/2

ACCESSION NR: AP4012566

proving the earlier results and finding the reason for the abrupt change in the relative counting rate at the absorption maximum (ε). The material used has properties similar to that of the earlier investigation, and the addition of manganese made the samples practically single-phase and closer to equilibrium. The test procedure is briefly described. The results indicate that the jump in the value of the Mossbauer effect in solid solutions based on $BiFeO_3$ is the result of magnetic hyperfine splitting (but is not caused by change in the probability of the effect), and is related to an antiferromagnetic phase transition. This conclusion is supported by magnetic measurement results. Orig. art. has: 3 figures.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University); Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 27Sep63 DATE ACQ: 26Feb64 ENCL: 02

Card 2/2

ACCESSION NR: AP4019211 S/0056/64/046/002/0492/0496

AUTHORS: Parfenova, V. P.; Anishchenko, V. N.; Shpinel', V. S.

TITLE: Oriented Tb-160 nuclei in metallic terbium

SOURCE: Zhurnal eksper. i teor. fiz, v. 46, no. 2, 1964, 492-496

TOPIC TAGS: terbium 160, aligned nucleus, oriented nucleus, polarized nucleus, angular distribution anisotropy, hyperfine splitting constant, nuclear specific heat, effective magnetic field

ABSTRACT: An attempt was made to orient the nuclei of metallic terbium to demonstrate the possibility of using the internal magnetic fields of terbium at low temperatures to polarize the nuclei. The Tb^{160} nuclei were polarized in a polycrystalline sample of metallic terbium cooled to 0.03--0.04K by adiabatic demagnetization of potassium chrome alum. The anisotropy of the angular distribution of the 298 keV γ rays was measured and the hyperfine structure splitting

Card 1/3

ACCESSION NR: AP4019211

was found to be A = 0.054 ± 0.007K. The results indicate that the hyperfine splitting in metallic terbium is sufficiently large and can be used to orient the nuclei at low temperatures, but the value of the hyperfine splitting turns out to be lower than expected. Whereas the measurements yield approximately 1.4×10^6 Oe for the effective magnetic field, the value obtained by measuring the nuclear specific heat is 5.7×10^6 Oe. The reason for the discrepancy is still unknown. "In conclusion the authors thank corresponding member N. Ye. Alekseyevskiy of AN SSSR for useful advice and for a fruitful discussion, V. Sokolov for the magnetic measurements of the terbium sample, to Amin-Zaki El-Bahai, who participated in the initial stage of the work, and also to the members of the MGU Low-Temperature Physics Department, headed by corresponding member A. I. Shal'nikov of AN SSSR, for supplying the liquid helium." Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo

Card 2/4 3

ACCESSION NR: AP4019211

universiteta (Nuclear Physics Institute, Moscow State University)

SUBMITTED: 26Jul63 DATE ACQ: 27Mar64 ENCL: 01

SUB CODE: PH NO REF SOV: 005 OTHER: 006

Card 3/4

ACCESSION NR: AP4042552 S/0056/64/046/006/1960/1963

AUTHORS: Shapiro, V. G.; Shpinel', V. S.

TITLE: Anisotropy of the Mossbauer effect in Beta-tin and cassiterite single crystals

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 1960-1963

TOPIC TAGS: Mossbauer effect, tin, tin compound, resonance absorption, absorption spectrum

ABSTRACT: The resonance absorption of 23.8-keV gamma quanta in single-crystal specimens of β-Sn and cassiterite (SnO_2) were investigated at different temperatures to ascertain the anisotropy of the probability of resonance absorption of the gamma quanta. The measurements were made with apparatus described previously (Fam Zuy Khiyen, V. G. Shapiro, V. S. Shpinel', ZhETF v. 42, 703, 1962), in which the absorber could be moved at constant speed and the counting

Card 1/5

ACCESSION NR: AP4042552

rate could be monitored during the course of the experiment. The probability of resonance absorption was determined from the areas under the experimental absorption spectra by a method proposed by By*kov and Fam Zuy Khiyen (ZhETF v. 43, 909, 1962). In single crystals of β-Sn, the anisotropy decreases with decreasing temperature from 400 to 700K, and becomes barely noticeable near the boiling point of nitrogen. In the temperature interval from 293 to 810K, the anisotropy reaches 1.3 and remains constant in the temperature interval. The centers of gravity of the absorption spectra of cassiterite, taken for specimens of different orientations, are noticeably shifted relative to one another, possibly because of the presence of weak quadrupole splitting of the 23.8-keV line in $Sn^{119m}O_2$. The measured values of the resonance-absorption probabilities at liquid-nitrogen temperature differ noticeably from those previously published, namely $f'_{polyer} = 0.34 \pm 0.03$, $f'_{(110)} = 0.32 \pm 0.03$, and $f'_{(0.01)} = 0.35 \pm 0.04$. These results, however, are considered to be

Card 2/5

ACCESSION NR: AP4042552

still inconclusive. "The authors are grateful to N. Ye. Alekseyevskiy for participating in a discussion of the results and for supplying the single-crystal tin, to G. P. Barsanov, director of the Mineralogical Museum of AN SSSR, for the single-crystal cassiterite, and to P. M. Shal'nev for help with the manufacture of the single-crystal SnO_2 absorbers." Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

SUBMITTED: 30Dec63 DATE ACQ: ENCL: 02

SUB CODE: NP NR REF SOV: 004 OTHER: 002

Card 3/5

ACCESSION NR: AP4042552 ENCLOSURE: 01

Resonance absorption probability f' and $\epsilon=[N(\infty) - N_{min}]/N(\infty)$ for two orientations

1 Ориента-ция	293° K		470° K		635° K		810° K	
	ε	f'	ε	f'	ε	f'	ε	f'
(001)	20,9	0,69±0,07	19,6	0,55±0,06	18,3	0,46±0,05	14,7	0,30±0,03
(110)	18,6	0,54±0,05	17,1	0,45±0,05	15,4	0,36±0,04	12,1	0,22±0,02

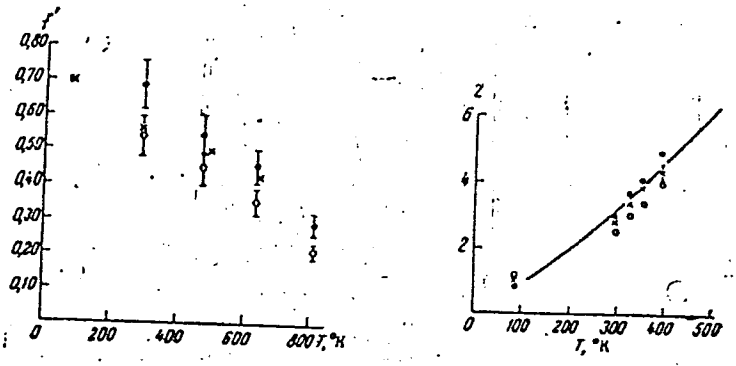
Ориентация 1	2 Значения f'			
	293° K	323° K	353° K	393 °K
3 Поликристалл	0,060±0,006	0,033±0,003	0,020±0,002	0,013±0,001
(001)	0,058±0,006	0,027±0,003	0,016±0,002	0,008±0,001
(110)	0,085±0,009	0,049±0,005	0,034±0,003	0,018±0,002

1 - orientation, 2 - values of f', 3 - polycrystal

Card 4/5

ACCESSION NR: AP4042552

ENCLOSURE: 02



Temperature dependences of resonance abosrption probability (left) and Debye factor (right) for SnO_2 and β-Sn of different orientations

Card 5/5

ACCESSION NR: AP4042558 S/0056/64/046/006/1996/2002

AUTHORS: Bryukhanov, V. A.; Delyagin, N. N.; Kuz'min, R. N.; Shpinel', V. S.

TITLE: Mossbauer effect in binary compounds of tin

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 1996-2002

TOPIC TAGS: Mossbauer effect, tin, tin compound, resonance absorption, phonon, lattice parameter, lattice constant

ABSTRACT: To provide a simple interpretation of the decrease of the effective Debye temperature Θ, which is used to characterize the probability of the Mossbauer effect, with decreasing temperature, in analogy with the explanation of the increase in Θ with decreasing temperature presented by the authors earlier (ZhETF v. 40, 713, 1961), the authors investigated resonance absorption of γ radiation by Sn^{119} nuclei in the binary compounds SnAs, SnSb, SnTe, and SnPt over a

Card 1/5

ACCESSION NR: AP4042558

wide range of temperatures. A simple model of the phonon spectrum, constructed by superposing the Debye and the Einstein spectra, was used in the analysis. The probability of recoil-free absorption and its temperature dependence for all four compounds cannot be described by a single parameter in the Debye approximation. This result is attributed to the influence of the optical branches of the phonon spectrum. The measurements of the absorption line widths, quadrupole interactions, and chemical isomeric shifts are used to analyze the properties of the chemical bonds and the structures of the investigated compounds. The structure and parameters of the lattices were determined by x-ray analysis. Although the experimental results agreed qualitatively with the model, there was no quantitative agreement and the observed temperature dependence of Θ exceeded the predictions based on the considered phonon-spectrum model. "The authors thank A. I. Firov for his assistance." Orig. art. has: 3 figures, 3 formulas and 1 table.

Card 2/5

ACCESSION NR: AP4042558

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

SUBMITTED: 17Jan64 DATE ACQ: ENCL: 02

SUB CODE: SS, NP NR REF SOV: 007 OTHER: 001

Card 3/5

ACCESSION NR: AP4042558

ENCLOSURE: 01

Principal characteristics of the Mossbauer effect

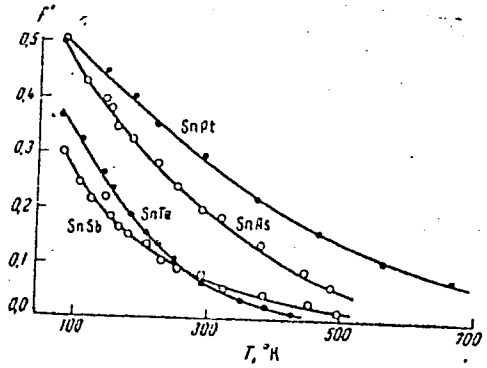
Соединение 1	Γ_a, мм/сек 2	δ, мм/сек		f		θ, °K	
		77° K	290° K	77° K	290° K	77	290
SnAs	0,34±0,02	0,67±0,03	0,62±0,02	0,50±0,05	0,20±0,02	145±15	180±10
SnSb	0,42±0,04	0,80±0,03	0,76±0,03	0,31±0,03	0,084±0,005	110±6	144±3
SnTe	0,36±0,03	1,51±0,02	1,43±0,03	0,37±0,03	0,070±0,006	120±5	139±3
SnPt	—	−0,22±0,02	−0,30±0,02	0,50±0,06	0,30±0,04	145±15	210±10

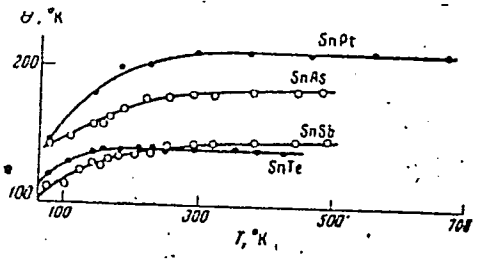
1 - Compound, 2 - mm/sec

Card 4/5

ACCESSION NR: AP4042558

ENCLOSURE: 02





Temperature dependence of recoilless absorption probability (left) and of the effective Debye temperature for the compounds SnAs, SnSb, SnTe, and SnPt

Card 5/5

ACCESSION NR: AP4042372 S/0056/64/047/001/0080/0083

AUTHORS: Bryukhanov, V. A.; Delyagin, N. N.; Shpinel', V. S.

TITLE: Connection between the isomer shifts of the 23.8-keV gamma transition of the Sn-119 nucleus in metallic solid solutions and the dynamic properties of the matrix

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 1, 1964, 80-83

TOPIC TAGS: tin, solid solution, isomeric transition, Mossbauer effect, gamma scattering

ABSTRACT: This is a consequence of earlier measurements by the authors (ZhETF v. 45, 1372, 1963 and v. 46, 825, 1964) of the probability of recoilless absorption of 23.8-keV gamma quanta by Sn^{119} nuclei in various metallic matrices, which yielded good agreement with the theory of the Mossbauer effect and showed that the results can be interpreted on the assumption that the force con-

ACCESSION NR: AP4042372

stants are unchanged. In this investigation, the isomer shifts of the 23.8-keV gamma transition of Sn^{119} introduced as an impurity in various metallic matrices were measured. The measurements were made for solid solutions with low tin concentration (1--3 at. %). The data obtained were compared with a parameter proportional to the effective force constant. A simple and unique connection was established between the electron density at the nucleus of the impurity atom and the dynamic characteristics of the host metal (Encl. 02). It is indicated that an explanation of the observed relation entails difficulties in view of the great variety in the properties of the host metals, but several alternate possible explanations are proposed. "The authors are grateful to Yu. Kagan for valuable discussions and also to P. L. Gruzin in whose laboratory some of the alloys were prepared." Orig. art. has: 1 figure, 2 formulas, and 2 tables.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo

ACCESSION NR: AP4042372

universiteta (Nuclear Physics Institute, Moscow State University)

SUBMITTED: 13Feb64 ENCL: 02

SUB CODE: NP NR REF SOV: 003 OTHER: 001

3/5

ACCESSION NR: AP4042372 ENCLOSURE: 01

Values of parameter $\Theta_0^2 M_0$, proportional to force constants

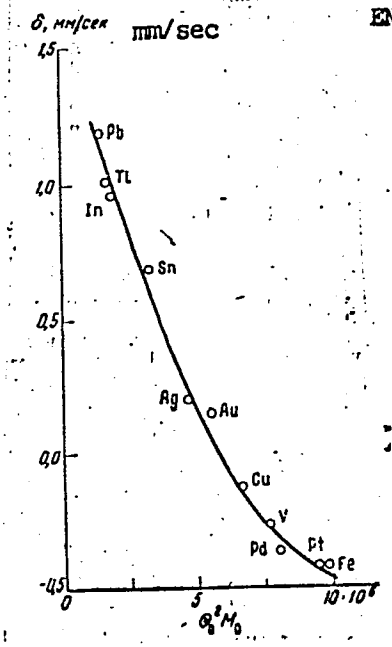
Матрица Matrix	δ, мм/сек mm/sec	Θ_0, °K	$\Theta_0^2 M_0 \cdot 10^{-6}$
Ag	+0,20 ± 0,02	210	4,76
Cu	−0,13 ± 0,03	325	6,71
Au	+0,15 ± 0,02	170	5,69
In	+0,96 ± 0,05	129	1,91
Tl	+1,01 ± 0,03	96	1,88
Pb	+1,20 ± 0,05	90	1,68
V	−0,27 ± 0,04	390	7,74
Pt	−0,42 ± 0,04	220	9,44
Fe	−0,42 ± 0,06	420	9,85
Pd	−0,37 ± 0,03	275	8,04
Sn	+0,69 ± 0,03	170	3,43

Card 4/5

ACCESSION NR: AP4042372

ENCLOSURE: 02

Isomer shifts vs. parameter $\Theta_0^2 M_0$



Card 5/5

SHPINEL, V.S.

L 16095-65 EWT(m) DIAAP/ESD(t)/ESD(gs)/SSD/AFWL
ACCESSION NR: AP5000308 S/0056/64/047/005/1644/1652

AUTHORS: Gromov, K. Ya.; Danagulyan, A. S.; Nikityuk, L. N.; Murav'yeva, V. V.; Sorokin, A. A.; Shtal', M. Z.; Shpinel', V. S. B

TITLE: Investigation of the decay of neutron-deficient isotopes of neodymium. New isotope Nd-138 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 5, 1964, 1644-1652

TOPIC TAGS: neodymium, isotope, level scheme, conversion electron spectrum, gamma gamma coincidence, gamma transition

ABSTRACT: This is a continuation of earlier work by a group headed by one of the authors (Gromov, Izv. AN SSSR ser. fiz. v. 27, 1357, 1963) on the decay of Nd^{139m}. Neutron deficient neodymium isotopes were obtained by bombarding tantalum or erbium-oxide targets with 660 MeV protons in the synchrocyclotron of the OIYaI. The

Card 1/5

L 16095-65
ACCESSION NR: AP5000308

SUBMITTED: 30Apr64 ENCL: 02

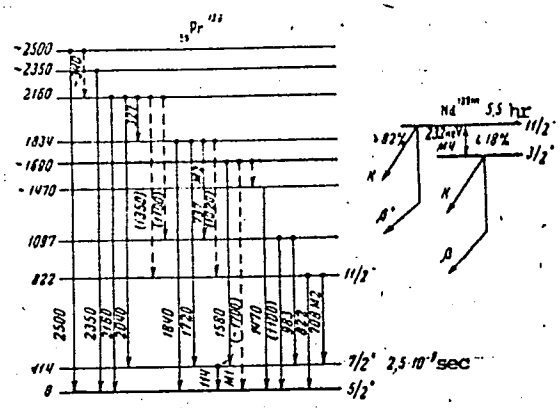
SUB CODE: NP NR REF SOV: 006 OTHER: 004

Card 3/5

L 16095-65
ACCESSION NR: AP5000308

ENCLOSURE: 01

Fig.1. Decay scheme of Nd^{139m}

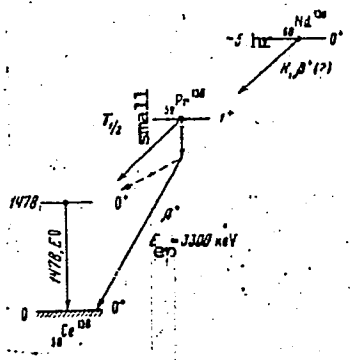


Card 4/5

L 16095-65
ACCESSION NR: AP5000308

ENCLOSURE: 02

Fig. 2. Decay scheme of the $Nd^{138} \rightarrow Pr^{138} \rightarrow Ce^{138}$ chain



Card 5/5

L 22176-65 EWT(1)/EWT(m)/EEC(t)/EWP(b)/T Peb AEDC(a)/AFWL/SSD/ASDA-5/ASMP-2
ASD-5/ESD(s)/ESDT IJP(c) JD/JG

ACCESSION NR: AP5001831 S/0056/64/047/006/2085/2090

AUTHOR: Bryukhanov, V. A.; Delyagin, N. N.; Shpinel', V. S.

TITLE: Mossbauer effect on Sn-119 impurity nuclei in binary metallic solid solutions

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2085-2090

TOPIC TAGS: Mossbauer effect, tin, silver alloy, binary matrix, solid solution, isomer shift, electron density, absorption line

ABSTRACT: Mossbauer effect probabilities and isomeric shifts were measured for the Sn^{119} gamma transition on nuclei incorporated as impurities in Ag-Pd, Ag-Au, and Ag-In binary matrices, as well as in Ag-Sn alloys. The technique of the measurements and of the data reduction were similar to those used by the authors earlier (ZhETF v. 45, 1372, 1963; v. 46, 825, 1964; v. 46, 137, 1964). The dependence on the composition of the binary matrix of the electron density at the nucleus, and the effective Debye temperature, which characterizes the probability of the effect, were found over a wide range of concentrations. It is shown that

Card 1/2

L 22176-65
ACCESSION NR: AP5001831

3

both the Mossbauer-effect probability and the size of the isomeric shift (as well as the width of the absorption line) are extremely sensitive to features of the electron structure of the host; in particular, the dependence found for the hosts containing a transition metal (palladium) is markedly different from that observed for other matrices. Some feature of the behavior of other impurity atoms in metal hosts are discussed. "The authors thank Yu. Kagan for valuable discussion of the results." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics, Moscow State University).

SUBMITTED: 18Jul64 ENCL: 00

SUB CODE: SS, MM NR REF SOV: 004 OTHER: 005

Card 2/2

L 16719-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP4043550 S/0020/64/157/004/0934/0937

AUTHORS: Aleksandrov, A.Yu.; Okhlovy*stin, O.Yu.; Polak, L.S.; Shpinel', V.S. B

TITLE: Moesbauer effect in unsymmetrical organotin compounds containing electron donor substituents

SOURCE: AN SSSR. Doklady*, v. 157, no. 4, 1964, 934-937

TOPIC TAGS: Moesbauer effect, unsymmetrical organotin compound, organotin compound, tetravalent tin compound, resonance absorption spectrum, electron donor group, triphenyltinlithium, hexaethyldistannane, hexaphenyldistannane, quadrupole splitting, isomeric shift, doublet line

ABSTRACT: The resonance absorption spectra of unsymmetrical organotin compounds containing electron donor (with respect to the tin atom) substituents, and of certain other tetravalent tin compounds, were studied. Measurements were made at liquid nitrogen temperature; Sn^{119} (as SnO_2) was used as the γ-ray source; the γ-quantum of 23.8 kev was registered on a resonance counter. The spectra of R_nSnH_{4-n}, R_3SnLi (triphenyltinlithium), $R_3Sn-SnR_3$ (hexaethyl- and hexaphenyl-

Card 1/3

distannane) and R_3SnR' type compounds were all singlets with maxima at 1.45, 1.40, 1.55, corresponding to line widths of 1.15-1.20 mm/sec Regardless of the electron donor substituent bonded directly to the Sn, the quadrupole splitting Δ was 0; the symmetry of the p-component of the four Sn bonds was not noticeably disturbed, and the density of the s-electrons near the Sn^{119} nucleus was increased only slightly. While $\Delta = 0$ in donor (D)-containing molecules R_nSnD_{4-n}, the quadrupole splitting in acceptor (A) type molecules R_nSnA_{4-n} varied from 0 to 4.8 mm/sec, depending on A. In both of these types of Sn compounds the isomeric shift varied within $\pm$ 50% of $\delta = 1.30$ for the symmetrical R_4Sn, indicating the isomeric shift caused by electron acceptor groups was compensated to a great degree by the electron donor substitutents; in inorganic tin compounds, δ varied from 0 to 4. In compounds of the type $(C_4H_9)_nSn(OCOC(CH_3)=CH_2)_{4-n}$ the resonance absorption spectra had a doublet structure; the quadrupole split increased with increase in number of substitutent radicals and was smaller in polymers in comparison to the respective monomers. The values for Δ and δ for $(C_4H_9)_2Sn(OCO(CH_2)_nCH_3)_2$, containing no double bond, were identical with those for the corresponding unsaturated compound; δ again depended little on the exchange of alkyl groups for

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549930002-8"

L 16719-65
ACCESSION NR:: AP4043550

8

electron acceptor groups and almost none on increasing the number of these groups. The resonance absorption spectra for $(CH_3)_3SnC_6H_5$, $(CH_3)_3SnCH=CH_2$ and $(CH_3)_3Sn(C_6H_4)CH=CH_2$ also had only singlet lines and was the same as for $(CH_3)_4Sn$, indicating exchange of CH_3 by C_6H_5· or a conjugated bond system did not change the electron density or cause a gradient in the electric field of the Sn^{119} nucleus. "The authors thank T. Krasnov, L. V. Layn for supplying some samples of the organotin compounds and M. Ye. Dyatkin and G. K. Semin for valuable remarks in discussing the work." Orig. art. has: 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences SSSR); Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds, Academy of Sciences SSSR); Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Moscow State University)

Submitted: 24Apr64 Encl: 00

Sub Code: GC, GP Nr Ref Sov: 005 Other: 000

Card 3/3

L 32980-65 EWT(m) DIAAP

ACCESSION NR: AP5007394 S/0286/65/000/004/0046/0046

AUTHOR: Mitrofanov, K. P.; Shpinel', V. S.; Plotnikova, M. V. 14 B

TITLE: A method for recording recoilless (resonance) gamma-quanta. 19 Class 21, No. 168368

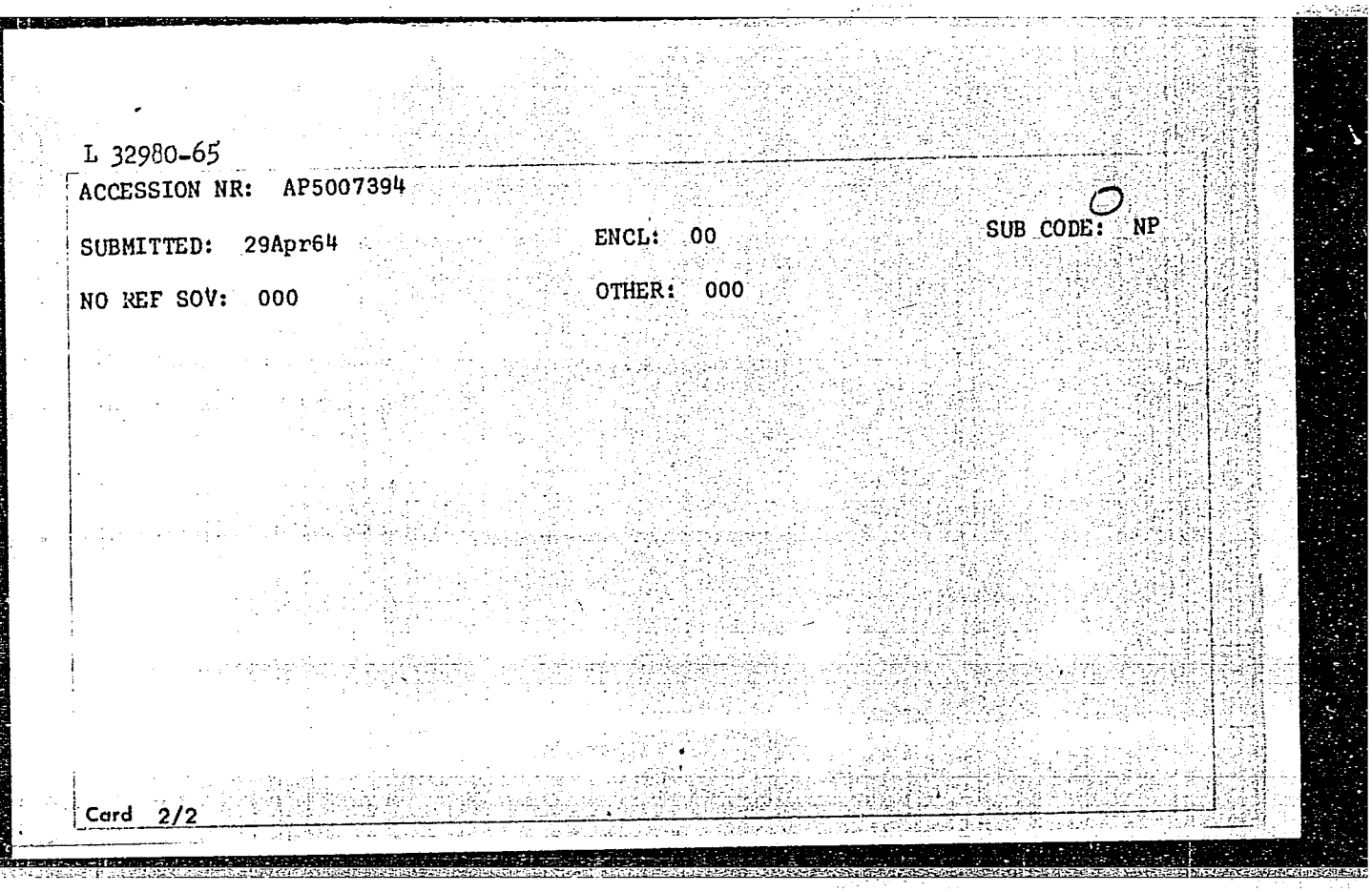
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 46

TOPIC TAGS: gamma quantum, gamma detection, recoilless absorption, resonance absorption

ABSTRACT: This Author's Certificate introduces a method for recording recoilless (resonance) gamma-quanta. The photographic emulsion is activated by the addition of a "resonance" isotope or a surface covered with a "resonance" material is placed in direct contact with the emulsion to improve the angular resolution and to record the degree of irradiation by conversion electrons.

ASSOCIATION: none

Card 1/2



L 32980-65

ACCESSION NR: AP5007394

SUBMITTED: 29Apr64 ENCL: 00 SUB CODE: NP

NO REF SOV: 000 OTHER: 000

Card 2/2

L 45795-65 EWT(m) Peb DIAAP

ACCESSION NR: AP5011213 UR/0367/65/001/003/0389/0399

AUTHOR: Gromov, K. Ya.; Danagulyan, A. S.; Strigachev, A. T.; Shpinel', V. S.

TITLE: Investigation of the $Lu^{167} \rightarrow Tu^{167}$ decay chain

SOURCE: Yadernaya fizika, v. 1, no. 3, 1965, 389-399

TOPIC TAGS: radioactive series, nuclear physics, decay scheme, isotope

ABSTRACT: The authors continued the study of the conversion electron spectra of lutecium isotopes produced by irradiation of a tantalum target with 660 Mev protons from the Dubna synchrotron. Results of the study of Yb^{167} conversion electrons are compared with the work and data of Harmatz et al. (Harmatz, B., Handley, T., Mihelich, J., *Phys. Rev.*, 114, 1082, 1959) in table 1 of the Enclosure. Only the *M*-line of the 25.6 kev transitions was observed. The *L*-line did not fall within this energy range. The data on the relative intensities of the conversion lines given in this article are somewhat more complete than those previously available (see reference above on Harmatz et al.). Thus the authors were able to determine the multipolarities of seven transitions out of ten. Conversion line intensity ratios are compared with the theoretical values for various multipoles (L. A. Sliv,

Card 1/2

L 45795-65 0
ACCESSION NR: AP5011213

I. M. Band, "Internal Conversion Coefficients, Part 1, the *K*-shell," *Izd. AN SSSR*, 1956, "Part 2, the *L*-shell," *Izd. AN SSSR*, 1958) in table 2 of the Enclosure. Experimental results of study of Lu conversion electrons are given in table 3 of the Enclosure (the arrangement is as in table 1). As is evident from table 3, the results obtained make it possible to identify 13 new transitions which follow the decay of Lu^{167}. Data on the multipolarities of the transitions are given in table 4 of the Enclosure. Probably most or all of the unidentified conversions follow Lu^{167} decay. Experimental data completely confirm the energy level diagram for Tu^{167} given by Harmatz et al. (see reference above). The results of experiments on $\gamma\gamma$-coincidence do not contradict the decay diagram given in fig. 1 of the Enclosure. The authors find the evidence adequate to ascribe Nillson quantum characteristics of $1/2^{+}[411]$ to the ground state of Tu^{167}. Using the intensities obtained for the conversion electrons, the authors compute the intensity balance for γ-transitions in the Yb^{167} decay scheme. Almost all cases of Yb^{167} decay terminate at the 292.7 kev energy level in Tu^{167}. There is a strong similarity between the level diagrams for Tu^{167} and Tu^{169}. The decay diagram for Lu^{167} is given in fig. 2 of the Enclosure. From the results of study of the positrons and the conversion electron spectra, it follows that Lu^{167} decay terminates at a high Yb^{167} level in 50% of the cases. An analysis of Lu^{167} decay indicates that existing data are contradictory

Card 2/9

L 45795-65
ACCESSION NR: AP5011213

2

and that more accurate work is needed. "The authors express their thanks to the radiochemists of the OIYaI Nuclear Spectroscopy Department for separating the lutecium fractions." Orig. art. has: 2 figures, 8 tables.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research); Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 18Sep64 ENCL: 06 SUB CODE: NP

NO REF SOV: 013 OTHER: 008

Card 3/9

KOMISSAROVA, V.A.; SOROKIN, A.A.; SHPINEL', V.S.

Angular distribution of the resonance scattering of 23.8 Kev. gamma quanta by Sn^{119} nuclei. IAd. fiz. 1 no.4:621-624 Ap '65.
(MIRA 18:5)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

L 1606-66 EWT(1)/ IJP(c)

ACCESSION NR: AP5014560 UR/0181/65/007/006/1657/1662 31 55 B

AUTHORS: Bykov, G. A.; Ryasnyy, G. K.; Shpinel', V. S. 44,65 44,65 44,65 21,44,55

TITLE: Mossbauer spectra in the presence of electric quadrupole and magnetic interactions

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1657-1662

TOPIC TAGS: Mossbauer effect, tin, electric quadrupole interaction, magnetic interaction, line splitting, doublet structure

ABSTRACT: It is shown theoretically that a method in which an external magnetic field is applied to a polycrystalline absorber capable of producing a doublet due to quadrupole splitting yields information capable of explaining the nature of the quadrupole interaction, permits measurement of the magnetic moment of the excited state of the Mossbauer nucleus, permits determination of the magnitude of the quadrupole splitting, and permits determination of the asymmetry coefficient of the electric field gradient and of the sign of the quadrupole interaction constant. The experiments were carried

Card 1/3

L 1606-66

ACCESSION NR: AP5014560 3

out with an SnO_2 source of thickness 25 mg/cm^2 and emission half width of 0.75 ± 0.05 mm/sec. The absorber was $(C_6H_5)SnCl_2$ of thickness 150 mg/cm^2. The absorber was sealed in Plexiglass and placed in a magnetic field. The gamma quanta were registered with a scintillation counter. The absorption spectrum was measured for an external magnetic field of 24.2 ± 0.7 kOe. The absorption spectrum exhibited a resonant behavior due to the two-component nature of the central peak, making it possible to determine the magnetic moment of the excited state of the Sn^{119} nucleus. It is shown theoretically that the Mossbauer spectra exhibit certain common properties in the presence of electric quadrupole and magnetic interactions. From the ratio of the intensities of the outer peaks to the central one (which always exceeded 0.5) it is deduced unambiguously that the interaction causing the doublet structure of the spectrum of the absorber is quadrupole in nature. Furthermore, it is shown that the signs of the magnetic moments of the ground and excited states of the nucleus (Sn^{119}) are opposite. 'I thank N. N. Delyagin for participating in a discussion

44,55

Card 2/3

L 1606-66

ACCESSION NR: AP5014560

of the results.[1] Orig. art. has: 3 figures and 8 formulas

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 17Nov64 ENCL: 00 SUB CODE: SS

NR REF SOV: 004 OTHER: 004

Card 3/3

[illegible], V.S.; ALEKSANDROV, A.Ya.; RYAGUZOV, G.K.; [illegible]

Asymmetry of the doublet in Mossbauer resonance absorption spectra in certain organic compounds of tin. Zhur. eksp. i teor. fiz. 48 no.1:69-71 Ja '65. (MIRA 18:4)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

L 47375-65 EWT(m) Peb DIAAP

ACCESSION NR: AP5008733 S/0056/65/048/003/0791/0795

AUTHORS: Mitrofanov, K. P.; Plotnikova, M. V.; Shpinel', V. S.

TITLE: Shape of the resonance absorption spectra of 23.8 keV gamma rays from Sn-119 m in tin oxide and in metallic white tin

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965, 791-795

TOPIC TAGS: tin oxide, absorption spectrum, resonance absorption, metallic tin, gamma ray spectrum, spectrum shape

ABSTRACT: The shape of the resonance absorption spectrum of 23.8-keV gamma rays of Sn^{119m} in tin oxide and in metallic white tin was studied using an Mg_2Sn^{119m} source, which has a single unbroadened emission line. A resonance detector based on the same compound was also used. The purpose of the investigation was to obtain more exact

Card 1/3

data on the shapes of the spectra of these materials by using the increased resolution inherent in resonance detection. The constant speed apparatus described elsewhere (K. P. Mitrofanov, PTE, 1965, in press) was used at three temperatures: 77, 293, and 640K. A thin absorber was used at each temperature, with thickness chosen such that the effects were almost the same at all temperatures. The results show that the absorption spectrum of SnO_2 is a doublet with splitting equal to 0.50 $\pm$ 0.02 mm/sec; its magnitude is independent of the temperature. In metallic tin, the observed spectrum is a broadened singlet whose width decreases with heating. The broadening in the tin oxide is caused entirely by quadrupole interaction. In metallic white tin the quadrupole splitting is smaller than that reported earlier, and drops when the absorber is heated. The reasons for the discrepancy between the present data and earlier results lies in the fact that in the other experiments the source used was SnO_2. If it is assumed that the spectrum of β tin consists of two lines of natural

L 47375-65
ACCESSION NR: AP5008733

width, the behavior of the spectrum of metallic tin can be attributed to a change in the splitting from 0.32 to 0.25 mm/sec when the temperature is raised from that of liquid nitrogen to room temperature. "The authors thank T. Gendler, a student of the Physics Department of the Moscow State University, for considerable help with the experiment." Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 08Jul64 ENCL: 00 SUB CODE: NP

NR REF SOV: 008 OTHER: 000

Card 3/3 cc

L 60320-65 EWT(m)/T IJP(c)

ACCESSION NR: AP5019015 UR/0286/65/000/012/0040/0041
615.84

14
B

AUTHOR: Mitrofanov, K. P.; Illarionova, N. V.; Shpinel', V. S.

TITLE: Gamma-quanta gas-discharge counter[19] Class 21, No. 171932

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 40-41

TOPIC TAGS: gas discharge counter, gamma radiation counter

ABSTRACT: In the proposed counter, the efficiency of registering recoilless gamma quanta is improved by coating the cathode of the counter with a resonance material, such as tin dioxide enriched with the Sn^{119} isotope. Orig. art. has: 1 figure. [TS]

ASSOCIATION: none

SUBMITTED: 13Apr62 ENCL: 00 SUB CODE: NP,ME

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4059

Card 1/1

L 6312-66 EWT(1)/EWA(h)/ETC(m) WW

ACC NR: AP5028517 SOURCE CODE: UR/0286/65/000/020/0098/0099

41
13

INVENTOR: Shpinel', V. S.; Mitrofanov, K. P.; Karasev, A. N.

ORG: none

TITLE: Device for the contactless measurement of fluid flow rate. Class 42, No. 175752

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 98-99

TOPIC TAGS: fluid velocity, flow measurement, flow rate, flow meter 25

ABSTRACT: An Author Certificate has been issued for a device for the contactless measurement of fluid flow rate. It consists of a length of pipe through which a liquid (containing the chemical compound of an element on which it is possible to observe the Mossbauer effect) flows, a source of resonant gamma rays (which pass through the liquid), a detector to register the direction of the gamma rays propagated in the direction of the current flow, and a unit for measuring the gamma-ray counting rate. To increase measurement accuracy, a second detector is installed to register gamma

Card 1/2 UDC: 532.574.8

2

L 6312-66

ACC NR: AP5028517

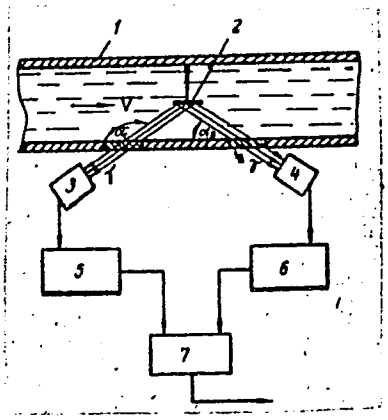


Fig. 1. Device for the contactless measurement of fluid flow rate

1 - Pipe; 2 - source; 3 and 4 - detectors; 5 and 6 - comparison circuit.

rays; the output of both units is then fed to a comparison circuit (see Fig. 1). Orig. art. has: 1 figure. [KT]

SUB CODE: ME,GO/ SUBM DATE: 17Jul64/ ATD PRESS: 4144

Card 2/2

KARASEV, A.N.; [illegible], I.S.; [illegible], E.B.; CHERNEL', V.S.

Study of adsorption processes by means of Mossbauer effect. Kin. i kat. 6 no.[illegible] [illegible] '65. (MIRA 18:9)

1. Institut neftekhimicheskogo sinteza imeni A.V.Topchiyeva AN SSSR.

L 7820-66 EWT(1)/EPA(s)-2/EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) DIAAP/IJP(c)
ACC NR: AP5028113 JD/GG SOURCE CODE: UR/0048/65/029/011/2029/2033

AUTHOR: Mitrofanov,K.P.; Viskov,A.S.; Plotnikova,M.V.; Venevtsev,Yu.N.; Shpinel',V.S.

ORG: none

TITLE: Resonance absorption of gamma rays and internal fields in bismuth ferrite - strontium stanno-manganite system ferroelectric-antiferromagnetic solid solutions /Report, Fourth All-Union Conference on Ferro-electricity held at Rostov-on-the Don 12-16 September 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 11, 1965, 2029-2033

TOPIC TAGS: ferroelectric material, antiferromagnetic material, solid solution, bismuth, ferrite, manganese, tin, strontium, Mossbauer effect, chemical bonding, magnetic field, Curie point, Neel temperature

ABSTRACT: The magnetic field strength at the positions of the Fe and Sn ions in $BiFeO_3$ - $Sr(SnMn_2)_{1/3}O_3$ solid solutions was investigated with the aid of the Mössbauer effect. The powdered solid solutions, enriched in Sn^{119} and Fe^{57}, were prepared from polycrystalline materials by the usual double air-heating ceramic technique. It was verified by x-ray studies that the investigated materials were single phase solid solutions in equilibrium. These solid solutions exhibit ferroelectric and antiferromagnetic properties; the ferroelectric Curie point and the Neel point decrease with increasing manganite content and are below room temperature when the manganite con-

Card 1/3

L 7320-66

ACC NR: AP5028113

centration is greater than 37 and 55 mole %, respectively. The resonance absorption of Fe^{57m} and Sn^{119m} γ rays by solid solutions containing 100, 90, 70, and 50 mole percent $BiFeO_3$ was investigated at temperatures from 77 to 850°K; the experimental technique has been described elsewhere by K.P.Mitrofanov, I.V.Illarionova, and V.S.Shpinel' (Pribory i tekhnika eksperimenta, No. 3, 49 (1963); No. 3, 60 (1956)). Below the Neel point the iron absorption line was clearly resolved into six components, which are ascribed to Zeeman splitting. Above the Neel point the iron absorption line was a doublet with a separation of 0.4 mm/sec; this splitting is ascribed to quadrupole interaction. The tin absorption was broad and could not be resolved into separate components. This broadening is ascribed to superposition of many Zeeman patterns with different splitting, and effective magnetic fields were derived from the absorption contours. The magnetic field at the iron nuclei decreased with increasing temperature and vanished at the Neel point, which was found to be 650 ± 3°K for pure $BiFeO_3$; the magnetic field extrapolated to 0°K was close to 500 kOe and decreased only slightly in the presence of manganite. The effective magnetic field at the tin nuclei, extrapolated to 0°K, increased with increasing $BiFeO_3$ concentration; it was about 300 kOe for large $BiFeO_3$ concentrations and extrapolated to zero at a $BiFeO_3$ concentration of 27 mole %. The significance of the results is discussed briefly. It is known that the field at the iron nucleus is due mainly to the influence of the electron shell of the iron ion, and it is said to be obvious that the effective magnetic field at the tin nucleus is proportional to the magnitude of the indirect exchange interaction due to polarization of the electron shell of the diamagnetic ion. The tin absorption line

Card 2/3

L 7820-66
ACC NR: AP5028113

was not displaced with respect to the SnO_2 source; this shows that the Sn-O bonds in the solutions are highly (65-70%) ionic. Special measurements at 540°K on samples containing 40 and 70 mole % $BiFeO_3$ showed that the isomeric shift and degree of ionization of the tin remained unchanged on transition from the paraelectric to the ferroelectric state. This result casts doubt on the hypothesis of H.D.Megaw (Acta Crystallogr., 5, 739 (1952); 7, 187 (1954)) that the bond character changes at a ferroelectric transition. It is concluded that the Mössbaur effect provides a useful tool for the investigation of internal fields and bond characters in ferroelectric and ferromagnetic materials. Orig. art. has: 3 figures.

SUB CODE: SS,EM,NP SUBM DATE: 00/ ORIG. REF: 008 OTH REF: 004

Card 3/3

L 6361-66

ACC NR: AP5028516 SOURCE CODE: UR/0286/65/000/020/0098/0098

14
B

INVENTOR: Shpinel', V. S.; Mitrofanov, K. P.; Karasev, A. N.

ORG: none

TITLE: Device for dispensing powder materials. Class 42, No. 175751

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 98

TOPIC TAGS: general construction, construction equipment

ABSTRACT: An Author Certificate has been issued for a device for dispensing powder materials. It consists of a hopper in which is located an agitator and a worm conveyer. To increase the dispensing accuracy and stability, a vibrator, for imparting vibrations to the worm conveyer in an axial direction (see Fig. 1), is mounted on

Card 1/2 UDC: 681-2.68.22:615.4

L 6361-66

ACC NR: AP5028516

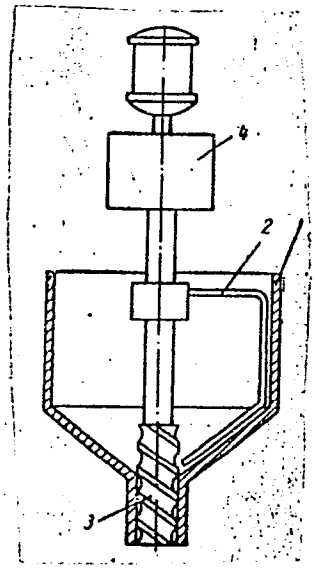


Fig. 1. Device for dispensing powdery substances

1 - Hopper; 2 - agitator; 3 - worm conveyer; 4 - vibrator.

the shaft of the worm conveyer. Orig. art. has: 1 figure. [KT]

SUB CODE: GO/ SUBM DATE: 17Jul64/ ATD PRESS: 4144

Card 2/2

L 15328-66 EWT(d)/EWT(m)/EWP(v)/EWP(k)/EWP(h)/EWP(l)/ETC(m)-6 DIAAP

ACC NR: AP6001001 SOURCE CODE: UR/0286/65/000/022/0067/0067

AUTHORS: Mitrofanov, K. P.; Viskov, A. S.; Venevtsev, Yu. N.; Shpinel', V. S.; Plotnikova, M. V.

ORG: none

TITLE: Method for measuring temperature. Class 42, No. 176442

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 67

TOPIC TAGS: temperature measurement, gamma ray absorption

ABSTRACT: This Author Certificate presents a method for measuring temperature, based on the discontinuous change of the effect of resonance gamma-ray absorption with a phase transition in the absorber. To increase the accuracy of measurements, a series of absorbers with different phase transition temperatures is placed in direct thermal contact with the investigated sample. The absorbers are exposed to radiation from a resonance source of gamma-rays and the absorption effect is recorded with detectors.

SUB CODE: 20/ SUBM DATE: 14Apr64

Card 1/1 UDC: 536.51 615.84

L 21805-66 EWT(m)/EWP(t) DIAAP/IJP(c) JD
ACC NR: AP6012187 SOURCE CODE: UR/0386/66/003/008/0323/0326

AUTHOR: Plotnikova, M. V.; Mitrofanov, K. P.; Shpinel', V. S.

ORG: Scientific Research Institute of Nuclear Physics of the Moscow State University im. M. V. Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Barium $^{?1}$stannate$^{?1}$--a source for the measurement of the Mossbauer effect on Sn^{119} ?9

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 8, 1966, 323-326

TOPIC TAGS: barium compound, tin compound, Mossbauer effect, Mossbauer spectrum, Gamma interaction, line width

ABSTRACT: The investigation was prompted by the desire to obtain for Mossbauer-effect research a source of recoilless γ quanta that would combine the advantages of the presently used SnO_2 or Mg_2Sn and be free of their shortcomings. The authors have repeated for this purpose earlier investigation of the stannates of barium, strontium, and calcium, whose highly symmetrical crystal lattices cause the influence of the quadrupole interaction on the width of their spectral lines to be small (Shpinel' et al., ZhETF v. 44, 1889, 1963). In the earlier study,

Card 1/3

0

however, no account was taken of the doublet character of the tin-oxide spectrum of the SnO_2 source used there. The use of an Mg_2Sn source in conjunction with a resonance counter developed by some of the authors (PTE, no. 4, 55, 1965) has made it possible to determine with great accuracy the form of the spectra of $BaSnO_3$, $SrSnO_3$, and $CaSnO_3$. Since the use of a resonance counter reduces the width of the observed spectrum, the effective width of the source emission line was approximately 0.18 mm/sec. The measurements have shown that the widths of the absorption spectra of the stannates are lower than those reported earlier, and in $BaSnO_3$ there was observed a single line of nearly natural width. Thus, barium stannate combines the favorable properties of the magnesium stannide and tin oxide emitters. Tests were then made of a $BaSnO_3$ source prepared in accordance with the usual ceramic technology. Comparison of this source with an Mg_2Sn source, whose transmission spectrum was 0.36 mm/sec wide, has shown that the $BaSnO_3$ source has at room temperature (293K) approximately the same probability of emission of resonance γ quanta and the same emission-line width as the Mg_2Sn source at liquid-nitrogen temperature. Further measurements with the $BaSnO_3$ source were carried out with a resonance counter based on the same compound. Since the probability of the effect is larger for barium stannate than for Mg_2Sn at room temperature, the $BaSnO_3$ resonance counter has a higher efficiency for recording recoilless radiation (~15%). This

L 21805-66
ACC NR: AP6012187

resonance procedure makes it possible to reduce the width of the observed line by ~ 0.15 mm/sec. It is therefore concluded that an absorber based on barium stannate has simultaneously a large probability of the effect and a near-natural spectrum width. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 25Feb66/ ORIG REF: 005

Card 3/3

L 23733-66 EWT(m) DIAAP JD/JG

ACC NR: AP6014812 SOURCE CODE: UR/0367/65/001/002/0201/0204

AUTHOR: Gromov, K. Ya.; Gnatovich, V.--Hnatowicz, V.; Danagulyan, A. S.; Strigachev, A. T.; Shpinel', V. S.--Shpinel, V. S.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy); Scientific Research Institute of Nuclear Physics, Moscow State University (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Two-hour (7.7 ksec) Lu sup 168 isomer

SOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 201-204

TOPIC TAGS: lutetium, isomer, beta decay

ABSTRACT: The electron conversion lines, previously ascribed (by Gromov and others, DAN SSSR, 136, 325, 1961) to the 87.5 KEV transition in the decay of a new Lu^{168} isomer ($T_{\frac{1}{2}}$ = 2.15 hours = 7.7 ksec) have been reinvestigated. It has been determined from the energy differences of the K, L_2, L_3, M_2, M_3, and N lines that these lines are connected with an 88.3 KEV transition in an Hf nucleus. Because of this, there is now no reason to suppose the existence of a two-hour Lu^{168} isomer, and the transition with an energy of 88.3 KEV is evidently due to beta-decay of an isomer state in Lu^{176}. Orig. art. has: 2 figures and 3 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 18Sep64 / ORIG REF: 003 / OTH REF: 002

Card 1/1

L 23740-66 EWT(m)/T

ACC NR: AP6014817 SOURCE CODE: UR/0367/65/001/004/0621/0624

AUTHOR: Komissarova, V. A.; Sorokin, A. A.; Shpinel', V. S.--Shpinel, V. S. 36 B

ORG: none

TITLE: Angular distribution of resonance scattering 19 of 23.8-KEV sub gamma-quanta on Sn sup 118 nuclei

SOURCE: Yadernaya fizika, v. 1, no. 4, 1965, 621-624

TOPIC TAGS: angular distribution, resonance scattering, tin, gamma quantum, particle interaction, resonance absorption

ABSTRACT: The angular distribution of the resonance scattering of 23.8-kev γ-rays on Sn^{119} nuclei, bound in the lattices of the compounds Mg_2Sn and SnO_2, have been measured and found equal to $W(\theta) = 1 + (0.26 \pm 0.03)P_2(\cos\theta)$ and $W(\theta) = 1 + (0.123 \pm 0.012)P_2(\cos\theta)$ respectively. The curve for Mg_2Sn corresponds to a nonperturbed correlation; and that for SnO_2, to a weakened one due to the quadrupole interaction, in which the relative magnitude of this interaction is $E/\Gamma = 1.4 \pm 0.4$. This is in agreement with data in literature obtained from resonance absorption spectra. The authors thank L. Akhyndovaya for assistance with the measuring and L. V. Chistyakov for the chemical cleaning of the sources. Orig. art. has: 2 figures. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 26Aug64 / ORIG REF: 004 / OTH REF: 002

Card 1/1 UDC

(1)

L 21807-66 EWT(m)/EWP(t) DIAAP/IJP(c) JD/HW/JG
ACC NR: AP6012185 SOURCE CODE: UR/0386/66/003/008/0318/0321

AUTHOR: Alekseyevskiy, N. Ye.; Anishchenko, V. N.; Yerzinkyan, A. L.; Parfenova, V. P.; Shpinel', V. S. 57 B

ORG: Scientific Research Institute of Nuclear Physics of Moscow State University im. M. V. Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Effective magnetic field at the Co^{60} nucleus in the ^{19} ^{27} ^{27}CoPd alloy

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 8, 1966, 318-320

TOPIC TAGS: cobalt alloy, palladium containing alloy, Mossbauer effect, magnetic field measurement

ABSTRACT: In view of the fact that Mossbauer-effect measurements of the effective field H_{eff} give unambiguous results only if Fe^{57} is used, the authors measured H_{eff} at the Co^{60} nucleus in an alloy of 0.3 at.% Co with Pd, by determining the anisotropy of the γ radiation of oriented Co^{60} nuclei. The use of radioactive Co^{60} has made it possible to carry out the measurements at rather low Co concentrations. The procedure used was similar to that described earlier (ZhETF v. 46, 493, 1964). The cooling agent was a block of potassium chrome alum. The investigated

Card 1/2

sample, constituting a disc 3 mm in diameter and 0.2 mm thick, was soldered to the end of the cold finger, which was pressed into the salt. The intensity of 1.33- and 1.17-Mev γ quanta from Co was measured at angles 0° and 90° to the external orienting field (H_{ext} = 5.7 koe). The measurements have shown that thermal equilibrium is established between the cooling salt and the sample at T ~ 0.03K, and the values of H_{eff} obtained in both cases agree with the published data. The effective field at the Co^{60} nucleus in the CoPd alloy was measured under the same conditions (the same salt and the same cold finger), and a value $H_{eff} = (2.6 \pm 0.2) \times 10^5$ oe was obtained. This value of H_{eff} exceeds the field in the metallic Co ($H_{eff} = 2.150 \times 10^5$ oe). The result shows that the Co ion behaves somewhat differently than the Fe ion when alloyed with Pd, where the field at the Fe^{57} nucleus is lower at smaller concentrations of Fe than in pure Fe. The large value of Heff is apparently connected with the large local moment at the impurity ferromagnetic Co atom. On the other hand, the increase of H_{eff} at the Co nucleus in the investigated alloy can be due to the change in the contribution of the spin density due to the conduction s-electrons, compared with metallic cobalt. The dependence of H_{eff} on the Co concentration is now under investigation.

SUB CODE: 20/ SUBM DATE: 25Feb66/ ORIG REF: 001/ OTH REF: 006

ACC NR: AP6018799 SOURCE CODE: UR/0056/66/050/005/1205/1217

AUTHOR: Komissarova, B. A.; Sorokin, A. A.; Shpinel', V. S.

ORG: Institute of Nuclear Physics, Moscow State University (Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Quadrupole interaction and anisotropy of the Mossbauer effect as deduced from observations of resonance scattering of γ quanta on polycrystals

SOURCE: Zh eksper i teor fiz, v. 50, no. 5, 1966, 1205-1217

TOPIC TAGS: polycrystal, crystal anisotropy, angular distribution, Mossbauer effect, resonance scattering, quadrupole interaction

ABSTRACT: The magnitude of quadrupole interaction of Sn^{119} nuclei in the lattice of white tin has been determined by studying the attenuation of the angular distribution of Mossbauer scattering. The values obtained are $E_q/\Gamma = 0.58 \pm 0.20$, $\Delta = 0.18 \pm 0.6$ mm/sec at 300K and $E_q/\Gamma = 0.82 \pm 0.15$, $\Delta = 0.25 \pm 0.05$ mm/sec at 80K, where Γ is the width of the nuclear level and Δ is the hyperfin

Card 1/2

L 36459-66

ACC NR: AP6018799

splitting. The effect of anisotropy of the Mossbauer effect in crystals on the angular distributions of resonance scattering during excitation of individual components of the allowed quadrupole doublet has been theoretically examined. It has been shown that it is possible to determine both the value and the sign of the anisotropy effect and the sign of the quadrupole interaction from angular distribution functions, even when the measurements are carried out on poylcrystalline samples. The effect of anisotropy of the Mossbauer effect has been experimentally detected in measurements of the angular distributions for the quadrupole doublet components in the $(C_4H_9)_2SnO$ compound. The authors thank L. D. Blokhintsev and N. N. Delyagin for their discussions and valuable advice, K. P. Mitrofanov and A. N. Karasev for their assistance in measurements of the absorption spectrum and A. S. Mogilev for developing a system of a shifting source. Orig. art. has: 1 figure, 17 formulas, and 2 tables. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 14Dec65/ ORIG REF: 012/ OTH REF: 007

Card 2/2

ACC NR: AP6024867 SOURCE CODE: UR/0056/66/051/001/0095/0100

AUTHOR: Delyagin, N. N.; Khusseyn El' Sais,; Shpinel', V. S.

ORG: Nuclear Physics Institute of Moscow State University (Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Magnetic hyperfine structure of Gd^{155} levels in metallic gadolinium and in the intermetallic compound $GdAl_2$

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 1, 1966, 95-100

TOPIC TAGS: ~~nuclear physics~~, Mossbauer effect, gadolinium, ~~nucleus~~, hyperfine structure, nuclear structure, NUCLEUS, EXCITED NUCLEUS, ISOTOPE, MAGNETIC STRUCTURE

ABSTRACT: The hyperfine structure of the ground state and the excited 86.5-keV state of the Gd^{155} nucleus was investigated by means of the Mossbauer effect in metallic gadolinium and in the intermetallic compound $GdAl_2$ at a temperature of 80K. The measurements were performed with an Eu^{155} source in the samarium oxide lattice. At temperatures close to that of liquid nitrogen, Eu^{155} emits an unsplit line with a natural width. The absorption spectra obtained indicated that the spin of the 86.5-keV level is 5/2 and the ratio of the g-factors for the excited and ground states is -2.1 ± 0.3. The intrinsic magnetic field strengths of the gadolinium nuclei were found to be 366 ± 55 and 134 ± 25 kOe for metallic gadolinium and $GdAl_2$, respectively. Extrapolation to lower temperature yielded a field strength value of 167 ± 25 kOe for gadolinium nuclei in $GdAl_2$. The great difference in the intrinsic

Card 1/2

ACC NR: AP6024867

magnetic fields in gadolinium and $GdAl_2$ was not accompanied by an isomer shift. No level shift due to quadrupole interaction was detected for gadolinium or $GdAl_2$. The experimental value of the magnetic moment for the 86.5-keV level ($\pm 0.85 \pm 0.13$) μ_{nuc} was not consistent with the theoretical value. Orig. art. has: 2 figures. [CS]

SUB CODE: 20/ SUBM DATE: 16Feb66/ ORIG REF: 001/ OTH REF: 011

Card 2/2

SHPINER, O.; ZAPOL'SKAYA, V., ekonomist (Prokop'yevsk, Kemerovskoy obl.)

Letters from a Workers' Supply Organization. Obshchestv.pit. no.11:13-15 N '62. (MIRA 16:1)

1. Nachal'nik otdela obshchestvennogo pitaniya 2-go otdela rabochego snabzheniya Prokop'yevskogo tresta ugol'noy promyshlennosti kombinata Kuzbassugol' Ministerstva ugol'noy promyshlennosti SSSR (for Shpiner).
(Restaurant management)

RADOMYSEL'SKIY, A.G.; SHPINETSKIY, R.V., fel'dsher narkologicheskogo kabineta (g. Khmel'nitskiy)

Treatment of chronic alcoholics in our dispensary. Fel'd. i akush. 25 no.11:54-56 N '60. (MIRA 13:11)
(ALCOHOLISM)

SHPINEV, N.; TELEPNEV, V.

First steps. Fin. SSSR. 19 no.4:61-62 Ap '58. (MIRA 11:4)

1.Nachal'nik upravleniya Gosstrakha po Brestskoy oblasti (for Shpinev). 2. Nachal'nik otdela imushchestvennogo strakhovaniya Gosstrakha po Brestskoy oblasti (for Telepnev).
(Brest Province--Insurance)

SHPINEV, V.F.; SHURUPOV, A.K.

A drawing-mill lorry. Stal' 7 no.1:78 '47. (MLRA 9:1)
(Metal drawing--Equipment and supplies)

SHPINEV, V.F.(selo Komsomol'skoye Vinnitskoy oblasti)

Improving medical and health services for agricultural workers.
Fel'd. i akush. 23 no.3:46-48 Mr '58. (MIRA 11:4)
(MEDICINE, RURAL)

SHPINEV, V.P.

The problem of the sanitary state of rural dwellings; material from a spot checks in Solenoe District, Dnepropetrovsk Province. Gig. i san. 23 no.6:67-69 Je '58 (MIRA 11:7)

1. Iz kafedry organizatsii zdravookhraneniya i istorii meditsiny Dnepropetrovskogo meditsinskogo instituta.
(HOUSING,
rural in Russia, sanit. aspects(Rus))
(RURAL CONDITIONS,
housing, sanit. aspects (Rus))

SHPINEV, V.F.

Some problems in conditions prevailing in rural forges.
Gig. i san. 23 no.8:74 Ag '58 (MIRA 11:9)

1. Iz sanitarno-epidemiologicheskoy stantsii Komsomol'skogo rayona Vinnitskoy oblasti.
(FORGING--HYGIENIC ASPECTS)

SHPINEV, V.F.

Problems in the dispensary care of the rural population. Vrach.delo no.10:1073 O '59. (MIRA 13:2)

1. Organizatsionno-metodicheskiy kabinet (zaveduyushchiy - V.F. Shpinev) Dnepropetrovskoy oblastnoy klinicheskoy bol'nitsy.
(DNEPROPETROVSK PROVINCE--DISPENSARIES)

SHPINEV, V.F.

Role of specialists in regional hospitals. Sov. zdrav. 18 no.5: 26-30 '59. (MIRA 12:7)

1. Iz organizatsionno-metodicheskogo kabineta (zav. -V.F. Shpinev) Dnepropetrovskoy oblastnoy klinicheskoy bol'nitsy imeni I.I. Mechnikova (glavnyy vrach F. A. Lyubin).

(HOSPITALS,
specialists in regional hosp. (Rus))
(SPECIALISM,
same)

SHPINEV, V.F. (Dnepropetrovsk)

Work of the medico-sanitary department of the Twentieth Party Congress Mine Administration in connection with lowering morbidity. Sov.zdrav. 18 no.10:19-22 '59. (MIRA 13:2)

1. Iz organizatsionno-metodicheskogo kabineta (zaveduyushchiy V.F. Shpinev) Dnepropetrovskoy oblastnoy klinicheskoy bol'nitsy imeni I.I. Mechnikova (glavnyy vrach F.A. Lyubin).
(MINING)

SHPINEV, V.F. (Dnepropetrovsk)

Public health work in a rural district following the reform. Sov. zdrav. 18 no.11:28-31 '59. (MIRA 13:3)

1. Iz organizatsionno-metodicheskogo kabineta (zaveduyushchiy V.F. Shpinev) Dnepropetrovskoy oblastnoy klinicheskoy bol'nitsy imeni Mechnikova (glavnyy vrach F.A. Lyubin).
(RURAL HEALTH)

SHPINEV, V.F. (Dnepropetrovsk)

Role of the feldsher section in the improvement of rural medical care in connection with the reorganization of machine-tractor stations. Fel'd. i akush. 24 no.7:19-21 Jl '59. (MIRA 12:10)
(MEDICINE, RURAL)

SHPINEV, V.F. (Dnepropetrovsk)

Our attitude toward the published statute for a feldshers' council. (MIRA 13:2)
Fel'd. i akush. 24 no.12:54-55 D '59.
(MEDICAL PERSONNEL)

SHPINEV, V.F.

Improve the work of visiting nurses. Med.sestra 19 no.1:27-29 Ja '60. (MIRA 13:5)

1. Iz organizatsionno-metodicheskogo kabineta Dnepropetrovskoy oblastnoy klinicheskoy bol'nitsy imeni I.I. Mechnikova.
(NURSES AND NURSING--STUDY AND TEACHING)

SHPINEV, V.F. (Krivoy Rog)

Forty-five years of service in the provincial public health system. Fel'd. i akush. 25 no.12:58-59 D '60. (MIRA 13:12)
(LITVINOV, EVSTIGNEI AKIMOVICH, 1887-)

SHPINEV, V.F. (Krivoy Rog)

Fourteenth Plenum of the Republic Committee of the Ukrainian Academy of Sciences on Silicosis Control. Vrach. delo no.8: 153-154 Ag '61. (MIRA 15:3)
(UKRAINE--LUNGS--DUST DISEASES--CONGRESSES)

SHPINEV, V.F.

Apropos of G.D.Luchko's article "Card for hospital discharge patient". Zdrav. Ros. Feder. 5 no.11:39-41 N '61. (MIRA 14:10)

1. Iz organizatsionno-metodicheskogo otdela Krivorzhskogo nauchno-issledovatel'skogo instituta gigiyeny truda i professional'nykh zabolevaniy (dir. - kand.med.nauk A.G.Shumakov).
(MEDICAL STATISTICS) (LUCHKO, G.D.)

SHPINEV, V.F.

Theoretical and practical conferences as a form for exchanging advanced experience in the work of medical institutions. Vrach. delo no.11:151-152 N '61. (MIRA 14:11)

1. Krivorozhskiy nauchno-issledovatel'skiy institut gigiyeny truda i profzabolevaniy.

(MEDICINE--CONGRESSES)

SHPLNEV, V.F. (Krivoy Rog)

Problems in public health in the regulations of agricultural farms. Sov. zdrav. 20 no.7:34-38 '61. (MIRA 15:1)

1. Iz otdela organizatsii zdravookhraneniya Ukrainskogo nauchno-issledovatel'skogo instituta kommunal'noy gigiyeny.
(POKROVSKOYE DISTRICT (DNEPROPETROVSK PROVINCE)--PUBLIC HEALTH)

SHPINEV, V.F. (Kiyev)

Further reference to the proposal of the feldsher. Fel'd. i akush. 26 no.3:61-64 Mr '61. (MIRA 14:3)
(NURSES AND NURSING)

SHUMAKOV, A.G.; SHPINEV, V.F.

Activity of a research institute in aiding public-health agencies. Gig. i san. 26 no.9:48-51 S '61. (MIRA 15:3)

1. Iz Krivorozhskogo nauchno-issledovatel'skogo instituta gigiyeny truda i professional'nykh zabolevaniy.
(PUBLIC HEALTH)

SHPINEV, V.F. (Krivoy Rog)

Ekaterina Fedorovna Kondratenko, nurse at a mine first aid station. Med. sestra 21 no.1:59 Ja '62. (MIRA 15:3)
(KONDRATENKO, EKATERINA IVANOVNA, 1921-)

SHPINEV, V.F. (Kiyev)

Need for introducing outpatient cards at medical and obstetrical stations. Fel'd. i akush. 27 no.4:44-47 Ap '62. (MIRA 15:6)
(DISEASES--REPORTING)

SHPINEV, V.F. (Krivoy Rog)

15th Plenum of the Ukrainian S.S.R. Commission on the Control of Silicosis. Vrach.delo no.1:155-156 Ja '63. (MIRA 16:2)
(LUNGS—DUST DISEASES)

SHPINEV, V.F.

Civic councils in medical institutions. Vrach.delo no.3:121-122 Mr '63. (MIRA 16:4)

1. Organizatsionno-metodicheskiy otdel (rukovoditel' - V.F. Shpinev) Krivorozhskogo nauchno-issledovatel'skogo instituta gigiyeny truda i prfessional'nykh zabolevaniy.
(PUBLIC HEALTH)

STREL'NIKOV, N.P.; BESPALOV, Ye.M.; SOKOLKIN, A.F.; SHPINEV, V.F.; KRUPENNIKOV, S.S.; SPEKTOR, M.D.

Some conclusions from the experiences of building a pipe rolling mill. Prom.stroi. 42 no.11:6-9 N '64. (MIRA 18:8)

1. Trest Uraltyazhtrubstroy (for Strel'nikov, Bespalov, Sokolkin). 2. Upravleniye kapital'nogo stroitel'stva Pervoural'skogo novotrubnogo zavoda (for Shpinev). 3. Uralpromstroyniiproyekt (for Krupennikov, Spektor).

KHAN, G.A.; SHPINEVA, A.G.; FED'KOVSKIY, I.A.

Studying the adsorption of xanthate by molybdenite and other sulfides. Izv. vys. ucheb. zav.; tsvet. met. 5 no.6:29-34 '62. (MIRA 16:6)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya poleznykh iskopayemykh.
(Sulfides—Metallurgy) (Flotation)

SHPINEVA, G. V.

AUTHORS: Tananayev, I. V., Petushkova, S. M., 78-3-5-2/39
Shpineva, G. V.

TITLE: On the Preparation of Water-Free Lithium Iodide (O poluchenii bezvodnogo yodistogo litiya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5, pp 1071-1074 (USSR)

ABSTRACT: Various methods for the preparation of lithium iodide were tested and are here described:
1. Preparation of lithium iodide by the application of organic reagents,
2. Immediate interaction between lithium and iodine,
3. Dehydration of lithium iodide in a HJ-current at 300°C,
4. Dehydration of lithium iodide melts in a vacuum.
All the above-mentioned methods gave unsatisfactory results. In a specially constructed vacuum destillation apparatus, water-free lithium iodide was produced by heating its watery salts in a vacuum at 800-850°C and at a pressure of 0,01 Hg. The water-free lithium iodide is highly hygroscopic and decomposes under the influence of light.

Card 1/2

On the Preparation of Water-Free Lithium Iodide 78-3-5-2/39

There are 1 figure and 5 references, 5 of which are Soviet.

SUBMITTED: May 21, 1957

AVAILABLE: Library of Congress

1. Lithium iodide—Preparation—Test results

Card 2/2

SHPINGEL', V.

AUTHOR: None Given SOV/129-58-9-16/16

TITLE: Dissertations (Dissertatsii)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 9, pp 63-64 (USSR)

ABSTRACT: The following dissertations were presented and approved:
For the degree of Doctor of Physico-Mathematical Sciences:
G. Ye. Zil'berman "On the Theory of Oscillation Effects in Metals in Magnetic Fields", Khar'kov, 1958, Khar'k. Gos. Un-t im. A. M. Gor'kogo (Kharkov State University imeni A. M. Gor'kiy). V. S. Shpingel' "Investigations in β- and γ-spectroscopy", Moscow 1958, Mosk. Gos. Un-t im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov).
For the degree of Candidate of Physico-Mathematical Science:
O. S. Galkina "Investigation of the Electrical Resistance and its Changes Inside a Magnetic Field for Ferromagnetic Metals and Alloys" Moscow, 1958, Mosk. un-t im. M. V. Lomonosova (Moscow University imeni M.V.Lomosov).
Yu. D. Kozmanov "Investigation of the High Temperature Oxidation of Tungsten, Molybdenum and of Some Binary Alloys of Iron with Tungsten and Molybdenum", Sverdlovsk, 1958,

Card 1/11