

ODINOKOV, S.D., kand.tekhn.nauk; SHABALINA, V.I., mladshiy nauchnyy sotrudnik; SIROTKINA, O.V., starshiy tekhnik; KROTOVA, L.V., starshiy tekhnik; VDOVENKO, Z.I., red.izd-va; TEMKINA, Ye.L., tekhn.red.

[Album of charts, designs of equipment, tools, and devices for erecting asbestos cement building roofs] Al'bom tekhnologicheskikh skhem, chertezhei oborudovaniia, instrumentov i prispособlenii dlia ustroistva astotsotsementnykh krovel' zdanii. Moskva, Gos.izd-vo po stroit., arkh. i stroit.materialam, 1960. 42 p. (MIRA 14:3)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.
2. Laboratoriya krovel'nykh i otdelochnykh rabot Nauchno-issledovatel'skogo inzituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Odinokov, Shabalina, Sirotkina, Krotova).
(Asbestos cement) (Roofing)

10.1580

40202
S/032/62/028/007/008/011
B104/B102

AUTHOR: Shabalin, V. I.

TITLE: Effect of the frequency of load alternations on the fatigue strength of duralumin

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 7, 1962, 855 - 857

TEXT: Fatigue tests were made on smooth cylindrical rotating samples of D16T (D16T) duralumin and on samples of the same material with annular grooves ($\sigma_B = 57.3 \text{ kg/cm}^2$, $\sigma_S = 40.2 \text{ kg/mm}^2$, $\delta = 12.8\%$, $\psi = 13.7\%$). The samples were of 8 mm diameter and the grooves of 0.75 mm radius. 117 smooth and 124 grooved samples were tested at a frequency of 3000 cycles/sec, also 121 smooth and 131 grooved samples at 20 cycles/sec. Results: At 3000 cycles/sec, the fatigue strength is greater than at 20 cycles/sec. N_{3000}/N_{20} reaches a maximum value of 5 at a stress of 24 kg/mm^2 . In the case of grooved samples, this ratio reaches a value of 38 in the range $22 - 24 \text{ kg/mm}^2$. Whereas the curve for the fatigue strength of smooth samples drops monotonically to the limit, grooved

Effect of the frequency...

S/032/62/028/007/008/011
B104/B102

samples show a break at $\sigma = 23 \text{ kg/mm}^2$, related to the varying behavior of the material during elastic and elastoplastic deformations. In calculating structural elements with different stress concentrations (neckings) it is necessary to allow for the load frequency. There are 4 figures. ✓

Card 2/2

S/020/62/144/003/017/030
B108/B102

AUTHORS: Shabalin, V. I.

TITLE: The mechanism of plastic deformation of metals

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 551-553

TEXT: Plastic deformation of armco iron was studied with a metallographic microscope. The specimens were annealed for 3 hrs at 1100°C to ensure a uniform structure. The observations indicated that ductility on stretching involves not only ordinary displacement but also diffusion, i.e., a mutual displacement of the grains. Photographs and measurements of the grain elongation on stretching showed that the linear deformation of the grains inside the specimens amounts to only one third of that on the surface. This fact indicates that in the crystal's interior the deformation is chiefly accomplished by a displacement of the grains relatively to one another. This diffusion displacement takes place mainly in the initial stage of deformation. There are 4 figures.

PRESENTED: January 22, 1962, by Yu. N. Rabotnov, Academician

SUBMITTED: July 4, 1961

Card 1/1

SHABALIN, V.I.

Effect of the frequency of load reversals on the endurance
of duralumin. Zav.lab. 28 no.7:855-857 '62 (MIRA 15:6)
(Duralumin--Testing)

S/032/62/028/011/013/015
B104/B102

AUTHORS: Snabalin, V. I., and Vlasova, T. V.
TITLE: Cold-hardening of metal surfaces during mechanical polishing.
PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 11, 1962, 1375

TEXT: The thickness of layers cold-hardened during mechanical grinding and polishing was determined on 30XPCMA (30KhGSNA) steel hardened and drawn at 200°C, on 30XPCA (30KhGSA) steel hardened and drawn at 540°C, on EI654 (EI654) steel in condition of delivery, and on annealed Armco iron. The specimens were prepared in the same way as metallographic samples and their microhardness was determined. Successive layers of 5 - 10 μ thickness were then removed by electrolytic polishing and the microhardness was measured each time. The thickness of the cold-hardened layers attained 60 μ (Table). There are 1 figure and 1 table. ✓

Card 1/2

Cold-hardening of metal surfaces...

S/032/62/028/011/013/015
B104/B102

Table. Thicknesses of cold-hardened surface layers.

Legend: (1) material; (2) thickness of cold-hardened layer; (3) percentage of hardening, referred to hardness of basic material.

(1)	(2)	(3)
30XГСНА-	15-20	14,5
30XГСА	25-30	10,5
ЭИ654	40	41,0
Железо армко	50-60	58,3



Card 2/2

SHABALIN, V.I.

Mechanism of plastic deformation of metals. Dokl.AN SSSR 144
no.3:551-553 My '62. (MIRA 15:5)

1. Predstavleno akademikom Yu.N.Rabotnovym.
(Deformations (Mechanics))

L 9638-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(h) MJM/JD
ACC NR: AP5027716 SOURCE CODE: UR/0129/65/000/011/0048/0048

AUTHOR: Shabalin, V. I.
4.1.55

ORG: none

TITLE: Fatigue strength of low-alloy structural steels
14.55, 16

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 11, 1965, 48

TOPIC TAGS: fatigue test, steel, torsion stress, fatigue strength / 37KhN3A steel, 30KhGSNA steel

ABSTRACT: The results of an investigation of the fatigue limit of specimens (Fig. 1) of 37KhN3A and 30KhGSNA steels are presented. Following their oil quenching from 850°C and tempering at 540°C, 133 specimens of 37KhN3A steel (yield point 107 kg/mm², Rockwell hardness 32.1) were tested in a 50-cps torsional bending machine for 10⁷ cycles (Fig. 2, a). 212 specimens of 30KhGSNA steel (0.30% C, 1.25% Mn, 1.1% Si, 1.1% Cr, 1.6% Ni, 0.01% S, 0.02% P) were oil-quenched from 900°C and tempered at 210°C for 3 h and thereupon tested in the same machine for 10⁸ cycles. As can be seen from Fig. 2, b the fatigue limit of this steel is 50 kg/mm² or 28% of its strength. Noteworthy is the considerable scatter of experimental findings, particularly in the low-stress region. Thus, when under a stress of 60 kg/mm², one specimen withstood only 47,600 cycles, whereas two others did not fracture even after 10⁸ cycles. Careful inspection

Card 1/4 UDC: 669.15-194:539.434

I. 9638-66
ACC NR. AP5027716

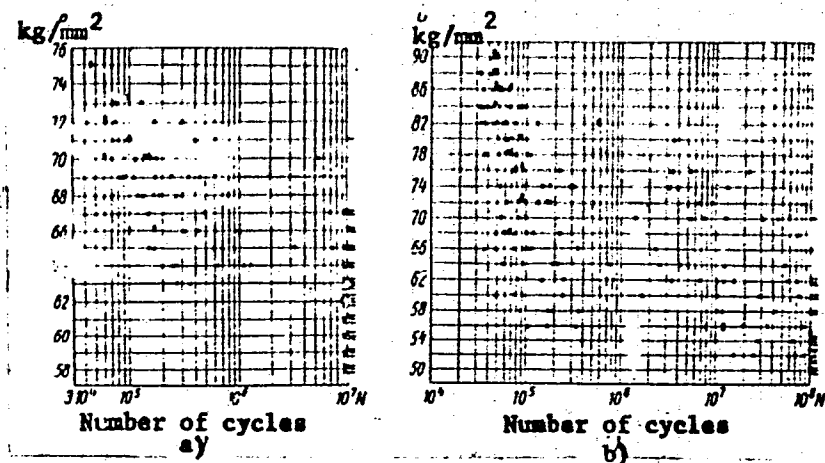


Fig. 2. Results of fatigue tests

a - 37KhN3A steel; b - 30KhGSNA steel

Card 3/4

L 9638-66

ACC NR: AP5027716

of the surface (before and after the tests) and microstructure of the specimens revealed no defects that might account for such a broad scatter of experimental points. A study of the fatigue fracture planes also provided no indication of the cause of such a considerable scatter of observational results. Orig. art. has: 2 figures.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000

gc
Card 4/4

L 61508-65 EWT(m)/EWP(w)/EWA(a)/T/EWP(t)/EWP(z)/EWP(b) MJW/JD

ACCESSION NR: AP5012502

UR/0632/65/031/005/0610/0611

620.178.3

AUTHOR: Shabalin, V. I.

22
B

TITLE: Influence of stress oscillation frequency on fatigue of low-alloy construction steel

SOURCE: Zavodskaya laboratoriya, v. 31, no. 5, 1965, 610-611

TOPIC TAGS: fatigue strength, endurance limit, metal property/ 30KhGSA steel

ABSTRACT: The work on the influence of stress oscillation frequency on the fatigue of iron and duraluminum described previously by the author (Zavodskaya laboratoriya, XXVIII, 7, 1962) was continued for chromium-manganese steel alloy 30KhGSA. Smooth and grooved ($r = 0.75$ mm) cylindrical specimens were tested in bending at 20 and 3000 cpm on the apparatus described in the above reference. After heat treatment (quenching in oil from 900C, tempering at 540C for 3 hours, oil cooled) the specimens had the following properties: $\sigma_B = 109$ kg/mm², $\sigma_{0.2} = 100$ kg/mm², $\delta_5 = 21.7\%$. It was found that for smooth specimens the

Card 1/2

L 61508-65

ACCESSION NR: AP5012502

oscillation frequency had little effect on fatigue: in $\log \sigma - \log N$ coordinates the fatigue curves were linear from $\sigma = 82$ and 80 kg/mm^2 at 2×10^4 cycles to 52 and 50 kg/mm^2 at 3×10^5 cycles respectively for 3000 and 20 cpm. The grooved specimens were 2-4 times stronger at 3000 cpm than at 20 cpm: linear from 62 and 55 kg/mm^2 at 10^4 cycles to 20 at 4×10^6 and 20 at 8×10^5 cycles respectively for 3000 and 20 cpm. Significant scatter was observed in all experimental data. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NC REF SOV: 003

OTHER: 000

282

Card 2/2

L 65083-65 EWT(d)/EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(z)/EWP(h)
ACCESSION NR: AP5021223 EWP(1) JD UR/0125/65/000/008/0034/0036
621.791.756.054:621.90.02

AUTHOR: Radchenko, V.G. ^{44,55} (Engineer); Arsenkin, V.T. ^{44,55} (Engineer); ShabalIn, V.N. ^{44,55}
(Engineer); Likhosherstov, D.M. ^{44,55} (Engineer)

TITLE: Increasing the hardness of cutting tools with the aid of electroslag re-
melting ^{18,44,55}

SOURCE: Avtomaticheskaya svarka, no. 8, 1965, 34-36

TOPIC TAGS: electroslag remelting, tool hardness, cutting tool, ingot mold, high speed steel, dendrite directivity

ABSTRACT: The article presents the results of an investigation of the positions of the principal axes of dendrites with respect to the edge of cutting tools on the hardness of these tools. Different dendrite directivities were attained by using ingot molds of different diameters (50-100 mm) and varying the regime of electroslag remelting ($U = 27-43$ v, $I_w = 600-2700$ a) of electrodes with diameters of 20-75 mm. The electroslag remelting of the wastes of high-speed steel was performed in open-type water-cooled copper ingot molds, with broken or worn tools of furnace-remelted tool wastes (broaches, augers, reamers, etc.) being used as the consu-

Card 1/3

L 65083-65

ACCESSION NR: AP5021223

mable-electrode rods. Dendrite directivity was determined by examining transverse and longitudinal macrosections of the ingots. Tool hardness was examined by cutting out 15x19x9 mm plates from the ingots, on taking into account dendrite directivity, placing them in tool holders, and then operating them as part of grinding machines, with subsequent comparative determination of the wear and blunting time of such cutting tools. Findings: cutting tools fabricated from small ingots (diameter up to 100 mm) obtained as a result of the electroslag remelting of the wastes of high-speed steel are, even when the dendrite directivity is not optimal, some 50 percent harder than cutting tools fabricated from rolled metal. An efficient utilization of the directivity of the principal dendrite axes makes it possible to enhance the hardness of metal 2-2.5 times. The peening of small ingots of steel remelted by the electroslag method increases the plasticity of the cutting tools but reduces their hardness to values roughly the same as the hardness of cutting tools made of the same high-speed steel, but without electroslag remelting. The higher hardness of tools made of cast steel obtained by the electroslag method is due to the nature of the process of the electroslag melting and crystallization of small ingots, and possibly also to a more disperse and distinctive distribution of the carbides and other components throughout the ingot cross section. The clarification of these questions will be the subject of special studies. Orig. art. has:

Card 2/3

L 65083-65

ACCESSION NR: AP5021223

3 figures, 1 table.

ASSOCIATION: Altayskiy politekhnicheskiy institut im. I. I. Polzunova (Altay
Polytechnic Institute) 44.55

SUBMITTED: 18Feb65

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 005

OTHER: 000

MLR
Card 3/3

RADCHENKO, V.G.; ARSENKIN, V.T.; SHABALIN, V.N.; LIKHOSHERSTOV, D.M.

Increasing the resistance of a cutting tool by electroslag
remelting. Avtom. svar. 18 no.8:34-36 Ag '65. (MIRA 18:11)

1. Altayskiy politekhnicheskiy institut imeni Polzunova.
Submitted February 18, 1965.

SHABALIN, V. V.; SAGYNDYKOV, K.

Vanadium-bearing coal-siliceous sediments in the Dzhety-Tau and
Kok-Iyrtin-Tau (Tien Shan). Izv. AN Kir. SSR, Ser. est. i tekhn. nauk
2 no. 6: 69-80 1960. (MIRA 15:5)
(Tien Shan- Vanadium)

DIAGRAM

... and composition of the ... manufacturing
... in the ... (...), Zap. Kir, old, Vses.
... no. 5:79-97 ... (MIRA 18:7)

POPOV, V.M.; SHABALIN, V.V.; KALMURZAYEV, K.Ye.

First All-Union Conference on Deep-Sea Deposits. Izv. AN Kir.
SSR. Ser. est. i tekhn. nauk 4 no.3:141-143 '62. (MIRA 15:11)
(Deep-sea deposits)

KEDRINA, G.A.; RAYKHMAN, Ye.S.; SHABALIN, V.V.

The LK, a new pore filler. Der. prom. 14 no.2:24 F '65.
(MIRA 18:6)

ADYSHEV, M.M.; SHABALIN, V.V.; KALMURZAYEV, K.Ye.

Dispersed elements in Cambrian sediments of the Dzhety-Tau (central Tien Shan). Dokl. AN SSSR 151 no.2:422-425 J1 '63. (MIRA 16:7)

1. Institut geologii AN Kirgizskoy SSR. Predstavleno akademikom N.M.Strakhovym.
(Dzhety-Tau--Trace elements)

SHABAIAN, V.V.

Stratigraphy of Cambrian sediments in the northeastern part of the Dzhetyntau (Tien Shan). Mat. po geol. Tian'-Shania no. 4: 45-56 '64.

Lithological characteristics and problems in the so-called "upper tillite-like conglomerates" (Baykonur series Eocambrian) in the northeastern part of the Dzhetyntau (Tien Shan). Ibid.: 153-170 (MIRA 17:10)

KEYDRINA, G.A.; RAYKIMAN, Ye.S.; SHABALIN, V.V.

Finishing furniture with aqueous emulsion styrene-butadiene
paints. Der. prom. 13 no.6:21 Je '64. (MIRA 17:6)

16.8100,16.8300,24.6000

76995
SOV/56-37-6-35/55

AUTHORS: Okun, L. B., Shabalín, E. P.

TITLE: The K_{e4} -Decay

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1775-1780 (USSR)

ABSTRACT: Calculations were carried out of the probabilities of K_{e4} -decays. The selection rules for the decays and the isotopic relations between various K_{e4} decays were determined on the basis of the Sakata model (cf. S. Sakata, Prog. Theor. Phys., 16, 686, 1956). The numerical value of K_{e4} decays probabilities was:

$$w = \frac{G^2 M^7}{2^{10} \pi^4 300} (f^2 0,0296 + g^2 0,0029). \tag{34}$$

as compared with the probabilities of K_{e3} decays (cf.

Card 1/3

The K_{e4} -Decay76995
SOV/56-37-6-35/55

L. B. Okun, Uspekhi Fiz. Nauk, 68, 449, 1959):

$$\omega_{K_{e3}} = 0,58G^2 \kappa^2 M^3 / 768\pi^3,$$

(where κ is dimensionless coefficient; M is mass of K-meson). It may be seen that the probability of the K_{e4} -decay is extremely small in comparison with the probability of the K_{e3} -decay. Therefore, an experimental check of the derived results probably cannot be carried out with present-day techniques. An exception is the possibility of checking the absence of the decay $K^+ \rightarrow 2\pi^+ + e^- + \bar{\nu}$. In a photoemulsion this decay should have the appearance of an anomalous τ -decay. Should this decay exist, it would mean that the model of Sakata (cf. loc.cit.) is incorrect. The text contains 9 references, 3 Soviet, 6 U.S. The 5 most recent U.S. references are: S. Oneda, Nucl. Phys., 4, 21 (1957); S. Sakata, Prog. Theor. Phys., 16, 686 (1956); S. Okubo, et. al., Phys. Rev., 112,

Card 2/3

The K_{e4} -Decay

76995

SOV/56-37-6-35/55

665, (1958); R. H. Daliz, Phys. Rev., 99, 915 (1955);
R. Feynman, M. Gell-Mann, Phys. Rev., 109, 193 (1958);
ibid., 109, 1860 (1958).

SUBMITTED: August 10, 1959

Card 3/3

SHABALIN, Ya.P.

Spectra of K_{e4} and K_4 decays. Zhur. eksp. i teor. fiz. 39 no.2:
345-354 Ag '60. (MIRA 13:9)

(Mesons--Decay)

KOZHUSHNER, M.A.; SHABALIN, Ye.P.

Generation of lepton pairs on a Coulomb center. Zhur.eksp.i
teor.fiz. 41 no.3:949-953 S '61. (MIRA 14:10)

1. Institut teoreticheskoy i ekperimental'noy fiziki AN SSSR.
(Nuclear reactions)

SHABALIN, Ye. P.

"Lepton Pairs Production at Neutrino Scattering in Nucleous Coulomb Field"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Inst. of Theoretical and Experimental Physics,
Moscow, USSR

39669
S/056/62/043/001/026/056
B104/B102

24. 6700

AUTHOR: Shabalin, Ye. P.

TITLE: Cross section of $\mu^+\mu^-$ and e^+e^- pair production in the scattering of neutrinos from nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 1(7), 1962, 175 - 180

TEXT: The cross sections of the reactions

$$Z + \nu \rightarrow Z + \nu' + \mu^+ + \mu^-, \quad (1)$$

$$Z + \nu \rightarrow Z + \nu' + e^+ + e^-. \quad (2)$$

are calculated for a neutrino energy of $E \sim 1$ Bev. These reactions had been studied for $E \gg 1$ Bev (A. Badalyan et al., ZhETF, 38, 664, 1960; I. M. Zheleznykh et al., K fizike neytrino vysokikh energiy - Physics of high-energy neutrinos, Dubna, 1960, p. 17; M. A. Kozhushner et al., ZhETF, 41, 949, 1961; 42, 310, 1962). The effect of the nuclear form factor had not been considered in these papers, which resulted in an incorrect

Card 1/3

Cross section of...

S/056/62/043/001/026/056
B104/B102

energy dependence of the cross section. It is shown what changes must be made in calculating the cross section of the reaction (1) to obtain useful results for $E \sim 1$ Bev:

$$\sigma_1 = \frac{2^{1/2} Z^2 \alpha^2 G^2}{711 \pi^3} \int_{4m_\mu^2}^{E^2} \frac{dw^2 (w - 2m_\mu)^{1/2}}{w^2} \left\{ \left(1 - \frac{w^2}{2E^2} + \frac{w^4}{12E^2 \Delta_0^2} \right) \times \right. \quad (13),$$

$$\left. \times \ln \frac{1 - w^2/2E^2 + w^4/12E^2 \Delta_0^2 + \sqrt{1 - w^2/E^2}}{1 - w^2/2E^2 + w^4/12E^2 \Delta_0^2 - \sqrt{1 - w^2/E^2}} - 2\sqrt{1 - w^2/E^2} \right\}.$$

where G is the constant of weak interaction, w the energy in the c.m.s. of the particles $\nu' + \mu^+(e^+) + \mu^-(e^-)$, $\Delta^2 = -q^2$; q is the four-momentum transferred to the nucleus.

$$\sigma_2 \approx \frac{2Z^2 \alpha^2 G^2}{3\pi^3} E \Delta_0 \left[\ln \frac{2E}{\Delta_0} - \frac{11}{6} \right]. \quad (19)$$

is obtained for the reaction (2). For $Z = 82$, $\sigma_2 \approx 2 \cdot 10^{-41}$ cm². The cross sections are estimated for the cases of incoherent scattering where an excited nucleus or a nuclear breakup occurs in the final state. For Pb, σ_1 incoh = $1.3 \cdot 10^{-43}$ cm²; σ_2 incoh = 10^{-43} cm². There are 1 figure and Card 2/3

Cross section of...

S/056/62/043/001/026/056
B104/B102

1 table.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

SUBMITTED: January 24, 1962

+

Card 3/3

1102:47
S/056/62/043/003/060/063
B104/B102

AUTHORS: Nikitin, Yu. P., Shabalin, Ye. P.
TITLE: Inverse $\pi \rightarrow \mu + \nu$ decay in a nuclear Coulomb field
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 3(9), 1962, 1119-1120

TEXT: Cross sections of the processes $\nu + Z \rightarrow \mu(e) + \pi + Z$,
 $\bar{\nu} + Z \rightarrow \bar{\mu}(e) + K + Z$ are calculated by the Weizsäcker-Williams method in
a form suggested by I. Ya. Pomeranchuk and I. M. Shmushkevich (Nucl. Phys.,
23, 452, 1961). These cross sections are

$$\sigma_{1,2} = \frac{Z^2 \alpha}{\pi} \int F^2(t) \frac{dt}{t^2} \left[t - \frac{s^2}{4E_\nu^2} \right] \frac{\sigma_{\phi 1,2}(s) ds}{s}, \quad (3),$$

where Z is the atomic number, $\alpha = 1/137$, $s^2 = (p_\mu + p_\pi)^2$, t is the square
of the momentum transferred to the nucleus, F is the electromagnetic form
factor of the nucleus, $\sigma_{\phi 1,2}$ are the cross sections of the photoprocesses

Card 1/2

Inverse $\pi \rightarrow \mu + \nu$ decay in a...

S/056/62/043/003/060/063
B104/B102

$\gamma + \nu \rightarrow \mu(e) + \pi$, $\gamma + \nu \rightarrow \mu(e) + K$. Using the cross sections $\sigma_{\pi 1,2}$ and the form factor $F(t) = (1 + tA^{2/3}/6m_{\pi}^2)^{-1}$ (A = mass number of the nucleus), and putting the pion form factor equal to unity, the following cross sections are obtained:

E_{ν} , BeV	$10^{12} \sigma_1, \text{cm}^2$		$10^{12} \sigma_2, \text{cm}^2$		E_{ν} , BeV	$10^{12} \sigma_1, \text{cm}^2$		$10^{12} \sigma_2, \text{cm}^2$	
	Fe	Pb	Fe	Pb		Fe	Pb	Fe	Pb
1	0,76	1,46			5	11,5	73	0,87	1,1
2	3,6	15,5			10	21	150	5,0	20
3	6,6	35			20	32	250	14	80
4	9,3	54	0,35	0,14	50	48,5	406	34	240

There is 1 table.

SUBMITTED: July 7, 1962

Card 2/2

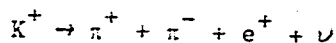
S/056/63/044/002/059/065
B163/3136

AUTHOR: Shabalin, Ye. P.

TITLE: The possibility of determining the phases of π -scattering from angular correlations of K_{e4} -decay

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 2, 1963, 765-767

TEXT: An effect connected with the interaction of the π -mesons in the final state is the asymmetry of the angular distribution of the positrons from the decay



with respect to the plane formed by the traces of the two pions. The normal vector \vec{n} , on the plane defined by the momentum vectors \vec{k}_1 and \vec{k}_2 of the π^+ and π^- mesons, respectively, is so oriented that for an observer looking from the end of \vec{n} , the shortest turn from the direction of the π^+ -trace to the π^- -trace is anticlockwise. If the interaction of the particles in the final state is neglected, the angular distribution of

Card 1/3

The possibility of determining the ...

S/056/63/044/002/059/065
B163/B186

the positrons is symmetrical. The expression for the probability does not contain a term $(\vec{p}_e \vec{n})$, which is a direct consequence of time parity. If, on the other hand, the interaction in the final state is taken into account, the quantity $(\vec{p}_e \vec{n})$ may contain a factor which is an uneven function of the phases of the π -scattering. Since the T-transformation reverses the signs of the phases, such a component would as a whole be T-invariant, and consequently the symmetry would be disturbed. Using the S-matrix formalism for multichannel reactions, an expression for the decay amplitude is given, from which a formula for the difference of the number of decays with positron emission upward and downward is derived. From this formula it follows that an experimental detection of the asymmetry is possible if the phases of the π -scattering in S- and P-states are different, and if the contributions of these states are not small.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

Card 2/3

The possibility of determining the ...

S/056/63/044/002/059/065
B163/B186

SUBMITTED: November 23, 1962

Card 3/3

L 17627-63
GW

FCS(f)/EWT(l)/EWT(m)/FCC(w)/BDS/ES(v) AFFTC/ASD/ESD-3 Pe-4
S/056/63/044/003/034/053

65

AUTHOR: Nguen Van Kh'yeu and Shabalin, Ye, P.

TITLE: The role of the $\gamma + \gamma \rightarrow \gamma + \nu + \bar{\nu}$ process in neutrino
emission by stars $\sqrt{19}$

PERIODICAL: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no. 3,
1963, 1003-1007

TEXT: The energy balance of stars with very high temperatures and densities (particularly during the process of their evolution) is substantially affected by neutrino-emitting processes. (Ref. 1: G. Gamow and M. Shoenberg, Phys. Rev., 59, 593, 1941). The authors discuss, among the possible processes, the one stated in the title, calculate its cross section, and discuss its role in the neutrino emission process of the stars. The magnitude of the neutrino luminosity due to this process is found to be about 10^8 times smaller than the value based on the estimates of Chiu and Morrison (Ref. 6: Phys. Rev. Lett., 5, 573, 1960). There is 1 table.

SUBMITTED: October 12, 1962

Card 1/1.

FRANK, I. M.; BUNIN, B. N.; NIKOLAYEV, S. K.; SHABALIN, Ye. P.; SHAPIRO, F. L.

"The experience of the pulsed fast reactor operation and its characteristics at injection of neutrons from a microtron."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

ACCESSION NR: AF4012259

S/0089/64/016/001/0012/0016

AUTHOR: Lu, Min; Shabalin, Ye. P.; Yazvitskiy, Yu. S.

TITLE: Experimental investigation of fluctuations in the pulse reactor

SOURCE: Atomnaya energiya, v. 16, no. 1, 1964, 12-16

TOPIC TAGS: pulse reactor, pulse fluctuation, nuclear fission, reactor power, reactor intensity dispersion, prompt neutron, delayed neutron

ABSTRACT: Measurements of intensity fluctuations in flashes of the IBR pulse reactor of the Laboratoriya neytronnoy fiziki Ob'yedinennogo instituta yaderny*kh issledovaniy (Laboratory for Neutron Physics of the Joint Institute for Nuclear Research) are described. The purpose of the measurements was to obtain data on the average reactor power by means of the relationship $\sigma^2 = \frac{\Delta^2}{2W_1\beta\tau}$, where σ^2 is the relative dispersion of the pulse intensity,

Δ^2 is the dispersion of the multiplication coefficient for a single fission event, W_1 - average power (number of fission events per sec), β - the effective fraction

Card 1/2

ACCESSION NR: AP4012259

of delayed neutrons, and t -average life of the prompt neutrons in the reactor Δ^2 , (which for uranium and plutonium is estimated to be 0.8β), and t have been previously determined by other authors. The above relationship reduced to $\sigma^2 = 0.30 \frac{W}{W}$ (W - average power in watts). The fluctuations were measured with a scintillation counter and an FEU-12a photomultiplier. The measurements were conducted at six power levels between 30 and 1200 w. The results agree, within experimental errors, with data obtained from heat evolution in the active zone. "The authors appreciate the useful discussions with F. L. Shapiro and the help with measurements by V. D. Anan'yev, V. D. Denisov, B. N. Deryagin, S. A. Kvasnikov, V. T. Rudenko, and L. Ye. Rudenko." Orig. art. has: 4 figures

ASSOCIATION: Laboratorii neytronnoy fiziki Ob'yedinennogo instituta yaderny*kh issledovaniy (Laboratory for Neutron Physics of the Consolidated Institute for Nuclear Research)

SUBMITTED: 21Mar63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: NS

NO REF SOV: 004

OTHER: 003

Card 2/2

NIKITIN, Yu.P.; SHABALIN, Ye.P.

Production of η -meson pairs by high-energy neutrinos on nuclei. Zhur.
eksp. i teor. fiz. 47 no.2:708-714 Ag '64. (MIRA 17:10)

1. Institut teoreticheskoy i eksperimental'noy fiziki gosudarstvennogo
komiteta po ispol'zovaniyu atomnoy energii i Moskovskiy inzhenerno-
fizicheskiy institut.

L 44747-65 EWT(m) DIAAF

ACCESSION NR: AP5016569

UR/0056/65/048/006/1750/1758

AUTHOR: Shabalin, Ye. P. 146

TITLE: Conservation of vector current and the $\nu + N \rightarrow \mu + N + \pi$ process 17, 44, 55

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965, 1750-1758

TOPIC TAGS: neutrino, neutron interaction, pion, muon

ABSTRACT: The cross section of the process $\nu + N \rightarrow \mu + N + \pi$ is estimated on the basis of a phenomenological approach, in which the vector-current conservation hypothesis is used in conjunction with experimental data on the electroproduction of pions. Expressions are first derived for the pion electroproduction matrix elements, using for the vector current an expression in which relativistic and gauge invariance are taken into account. Equations are then obtained by which to establish the mutual relation between the cross sections of the various processes that can result from $\nu + n$ interaction, from the known amplitudes of transition to the isotopic states $3/2$ and $1/2$, respectively. An expression is then given for the total cross section of the process under investigation. The components of this cross section due to the interactions of the isotopically vector and isotopically scalar currents are separated and compared with some available experimental data

Card 1/2

L 64747-65

ACCESSION NR: AP5016569

(L. N. Hand, Phys. Rev. v. 129, 1834, 1963). The value found for the vector cross section of the neutrino-neutron interaction at 1 GeV energy is $1.26 \times 10^{-39} \text{ cm}^2$ or $\sim 1 \times 10^{-39} \text{ cm}^2$ per nucleon. This is regarded as a lower limit, the upper limit being $3 \times 10^{-39} \text{ cm}^2$ as obtained from a CERN experiment (Block, Burmeister, et. al. Phys. Lett. v. 12, 281, 1964). Orig. art. has: 1 figure, 29 formulas, and 2 tables.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKIAYe (Institute of Theoretical and Experimental Physics, GKIAYe).

SUBMITTED: 16Jan65

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 011

Card 2/2

UR/

ACC NR: AM5022322

Monograph

Shabalín, Ye. P.

Some questions on the theory of weak interaction (Nekotoryye voprosy teorii slabogo vzaimodeystviya) ¹⁹ Moscow, 1965. 108 p. illus., biblio. Dissertation submitted for the degree of candidate of physical and mathematical sciences. 35 copies printed.

Series notes: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut teoreticheskoy i eksperimental'noy fiziki.
[Doklady]

TOPIC TAGS: elementary particle, high energy physics, weak interaction, neutrino, meson, muon, lepton

PURPOSE AND COVERAGE: This book is intended for nuclear physicists and astrophysicists. The book describes weak interaction processes (basically particle decay) of the order of 10^{-10} sec. The theory of universal Fermi interaction, the generation of $\mu^+\mu^-$ and e^+e^- pairs in case of a noncoherent scattering of the neutrino by the nuclei, and the calculation of the cross sections of $\pi \rightarrow \mu + \nu$ and $K \rightarrow \mu + \nu$ decays in Coulomb field of nucleus are discussed. The application to astrophysics of some results of the weak interaction theory, connected with the processes of neutrino emission, is also considered. The

Card 1/4

ACC NR: AM5022322

author thanks L. B. Okun', M. A. Kozhushner, Yu. P. Nikitin, Nguen Van Kh'e, V. A. Potapova, A. I. Panova, R. A. Ioffe, and V. Polyakova. There are 61 references, primarily English.

TABLE OF CONTENTS:

Introduction -- 3

Ch. I. K_{e4} and $K_{\mu 4}$ decay -- 18

1. Matrix element K_{e4} ($K_{\mu 4}$) decay -- 20
2. Isotopic ratios between various K_{e4} ($K_{\mu 4}$) decays, resulting from the rule $\Delta T = 1/2$ -- 23
3. Energy spectrum of electrons in K_{e4} decay -- 26
4. Energy spectrum of π -mesons in K_{e4} decay -- 31
5. Angular π -e correlation in K_{e4} decay -- 35
6. Spectrum of effective mass of two π -mesons in K_{e4} decay -- 35
7. Energy spectrum of μ mesons in $K_{\mu 4}$ decay -- 40
8. Spectrum of effective mass of two π -mesons in $K_{\mu 4}$ decay -- 43
9. Probability of K_{e4} and $K_{\mu 4}$ decays -- 46
10. Determination of the phase shift of π - π scattering from the angular correlations of K_{e4} decay -- 48

Card 2/4

ACC NR: AM5022322

- Ch. II. Cross section of lepton pair production during neutrino scattering on Coulomb field of nucleus. $\nu + Z \rightarrow Z + \pi + \mu(e)$, $\nu + Z \rightarrow Z + K + \mu(e)$ processes in Coulomb field of nucleus -- 55
1. Methods of using photon cross sections for processes taking place in Coulomb field -- 56
 2. Cross section of the process $\nu + Z \rightarrow \nu + Z + \mu^+(e^+) + \mu^-(e^-)$ General formulas -- 58
 3. Differential cross section of the $\gamma + \nu \rightarrow \nu + \mu^+(e^+) + \mu^-(e^-)$ process -- 60
 4. Cross section of the $\nu + Z \rightarrow \nu + Z + \mu + \mu$ process in the case of superhigh values of neutrino energy -- 67
 5. Cross section of the $\nu + Z \rightarrow \nu + Z + \mu + \mu$ process in a range of ~ 1 Bev neutrino energy -- 70
 6. Cross section of the $\nu + Z \rightarrow \nu + Z + e + e$ process -- 73
 7. Cross section of the $\nu + Z \rightarrow \nu + Z + \mu(e) + \mu(e)$ processes in the case of incoherent scattering -- 77
 8. The $\nu + Z \rightarrow Z + K + \mu(e)$, $\nu + Z \rightarrow Z + \pi + \mu(e)$ processes in Coulomb field of nucleus -- 79

Ch. III. The role of $\gamma + \gamma \rightarrow \gamma + \nu + \bar{\nu}$ processes in neutrino luminescence of stars -- 87

1. Cross section of the $\gamma + \gamma \rightarrow \gamma + \nu + \bar{\nu}$ process -- 87
2. Energy taken by the neutrino in the $\gamma + \gamma \rightarrow \gamma + \nu + \bar{\nu}$ process -- 97

Card 3/4

ACC NR: AM5022322

3. Comparison of neutrino luminescence resulting from various processes -- 101

Acknowledgements -- 104

Bibliography -- 105

AVAILABLE: Library of Congress

SUB CODE: 20/ SUBM DATE: 15Nov64/ ORIG REF: 020/ OTH REF: 041

Card 4/4

AID P - 2213

Subject : USSR/Aerodynamics

Card 1/2 Pub. 135 - 14/18

Author : Not given

Title : Readers' suggestions

Periodical: Vest. vozd. flota, 6, 73-79, Je 1955

Abstract : In this column the four following articles are published, all related to the evaluation of wind in flight:

- 1) "Measuring the drift angle by twice taking the bearing of a fix in the rear hemisphere of the aircraft" by Lakhtin, M., Lt. Col. Examples, graphs, formulae;
- 2) "How to accelerate the computation of navigational data" by Kurov, V., Guards Maj. Examples, graphs, formulae;
- 3) "Determination of the drift angle and the true speed by two slanting ranges and the course angle" by Levshin, B., Jr. Lt. Examples, graphs, formulae;
- 4) "Graphs for the determination of the navigational data of a flight" by Shabalin, Yu., Lt., in which the

Vest. vozd. flota, 6, 73-79, Je 1955

AID P - 2213

Card 2/2 Pub. 135 - 14/18

author gives a short description of the use of a graph giving corresponding values of the drift angle slanting distances.

Institution: None

Submitted : No date

L 8793-66 EWT(m)/EWP(w) EM

ACC NR: AP5028034

SOURCE CODE: UR/0119/65/000/011/0026/0027

AUTHOR: Mukhin, N. L. (Engineer); Shabalin, Yu. A. (Engineer)

ORG: Tomsk Special Design Bureau for Measuring Instruments (Tomskoye SKB
izmeritel'nykh priborov)

TITLE: Correcting the resistance of bonded strain gauges

SOURCE: Priborostroyeniye, no. 11, 1965, 26-27

TOPIC TAGS: strain gauge, bonded strain gauge

ABSTRACT: The photochemical method of manufacturing bonded ("foil") strain gauges has been responsible for $\pm 20\%$ deviations in their resistance which, in turn, has caused 30-40% rejection of the final product; in the case of multi-element gauges, up to 80% of the product has been rejected. Hence, two resistance-correcting methods have been developed: (1) Introduction of

Card 1/2

UDC: 621.3.083.8:621.316.8

L 8793-66

ACC NR: AP5028034

resistance-calibrated sections into the gauge pattern; (2) Additional etching of the pattern in order to bring its resistance to a specified value. The first method consisting essentially of short-circuiting a part of the resistance has brought rejection down to 3-5%. The second method permitting an increase of resistance up to 20% has yielded gauge resistances accurate within 1%. Orig. art. has: 2 figures.

SUB CODE: 13 / SUBM DATE: 00

jw
Card 2/2

L 13131-66 EWT(m)/T/EWA(m)-2

ACC NR: AP6000746

SOURCE CODE: UR/0386/65/002/009/0446/0449

AUTHOR: Shabalin, Ye. P.

ORG: Institute of Theoretical and Experimental Physics (Institut teoreticheskoy i eksperimental'noy fiziki)

TITLE: CP-odd weak interaction 19, 5, 44

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 9, 1965, 446-449

TOPIC TAGS: strong nuclear interaction, parity principle, K meson, meson interaction

ABSTRACT: The author shows that two different effects--CP-parity nonconservation in $K \rightarrow 2\pi$ decays and the absence of weak interaction of neutral currents--can be simply explained if the weak-interaction Lagrangian has negative CP-parity. This postulate is common to all weak interactions and is connected with definite transformation properties of the weak-interaction Lagrangian in charge space. Two radically different consequences of negative CP-parity of the interactions are pointed out: 1. First-order effects in the weak interaction include: (a) the absence of neutral-current interaction, (b) the absence of interactions quadratic in the current, and (c) the presence of CP-odd correlations of the order of unity in nuclear transitions with parity nonconservation. 2. In second (arbitrary even) order in weak interaction, owing to positive CP-parity, processes which are absent in first order of CP-odd weak interaction become allowed. In the case of K mesons, in first order interaction with CP

22
B

Card 1/2

L 13131-66

ACC NR: AP6000746

5

$\epsilon = -1$, decay of the CP-odd combination $(1/\sqrt{2})(K^0 + \bar{K}^0)$ into two pions is allowed, but the transition of the CP-even state $(1/\sqrt{2})(K^0 - \bar{K}^0)$ into two pions is forbidden. The details will be published elsewhere. A check of the correctness of the proposed scheme is made easy by the wide range of experimentally observed consequences. Author thanks V. B. Berestetskiy, I. Yu. Kobzarev, B. L. Ioffe, L. B. Okun', and M. V. Terent'yev for discussions and critical remarks, which have contributed to a more precise formulation of the hypothesis and of some of the conclusions. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 15Sep65/ ORIG REF: 004/ OTH REF: 010

Card 2/2

HW

SARKISOV, G.B.; PESIN, L.M.; OSETSKIY, V.F.; RABINOVICH, S.S.,
nauchn. red.; SHABALIN, Yu.P., red.

[Mechanisms, devices and power tools for assembly work; a
handbook] Mekhanizmy, prispособleniia i mekhanizirovannyi
instrument dlia montazhnykh rabot; sravochnoe posobie.
Moskva, Stroiizdat, 1965. 212 p. (MIRA 18:12)

MOKK, Laslo [Mokk, László]; TIPOL'T, S.A., inzh. [translator]; SOROKER, V.I., doktor tekhn.nauk, red.; SHABALIN, Yu.P., red.; GILSONSON, P.G., tekhn.red.

[Precast reinforced concrete construction elements; manufacture and assemblage in construction yards] Sbornye zhelezobetonnye konstruktсии; izgotovlenie i montazh na stroitel'noi ploschadke. Pod red. V.I.Sorokera. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1959. 302 p. Translated from the Hungarian. (MIRA 13:1)

(Precast concrete)

SHABALLINA, A.

"Question on fattening poultry in darkened places."

p.221 (Izvestia) Vol. 8; 1957. Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 5, May 1958

SHABALINA, A.; KHLEBAROV, G.

Investigation of the growth and development of the chickens bred for eggs and meat for Eastern Bulgaria. p. 279.

IZVESTIIA. Sofia, Bulgaria, Vol. 10, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 9, No. 2, February, 1960. Uncl.

SHABALINA, A.

Number of erythrocytes and the hemoglobin content of the blood of hens and their relation to the age, breed, and good laying. p. 311.

IZVESTIIA. Sofia, Bulgaria, Vol. 10, 1959.

Monthly List of East European Accessions (MEAI), LC, Vol. 9, No. 2,
February, 1960. Uncl.

SHABALINA, V.I., kand. med. nauk

Immediate and late results of the application of obstetric forceps.
Trudy SMI 17:77-83 '63. (MIRA 18:1)

1. Iz kafedry akusherstva i ginekologii (zav. - dotsent K.K. Koshko) Smolenskogo gosudarstvennogo meditsinskogo instituta.

SHABALINA, A. V., (Veterinary Surgeon, Buryat Republic Veterinary Laboratory)

Listeriosis of sheep in the Buryat ASSR

Veterinariya Vol. 38, No. 7, July 1961 p. 45.

SHABALINA, A.V., veter. vrach

Sheep listerellosis in the Buryat A.S.S.R. Veterinariia }
no. 7:45 JI '61. (MIRA 16:3)

1. Buryatskaya respublikanskaya veterinarno-bakteriologi-
cheskaya laboratoriya, Buryatskaya ASSR.
(Buryat A.S.S.R.—Listeriosis)
(Buryat A.S.S.R.—Sheep—Diseases and pests)

SHABALINA, G.S., otv.red.; KASTEL'SKAYA, Z.D., red.izd-va; ZOTOVA,
Yu.N., red.izd-va; KRASNAYA, A.K., tekhn.red.

[Economic problems of the countries of southeastern Asia]
Problemy ekonomiki stran IUgo-Vostochnoi Azii. Moskva, 1959.
213 p. (MIRA 13:2)

1. Akademiya nauk SSSR. Institut vostokovedeniya.
(Asia, Southeastern--Economic conditions)

L 16153-63

EWI(1)/BDS/ES(w)-2 AFPTC/ASD/ESD-3/SSD Feb-4

ACCESSION NR: AR3005149

S/0058/63/000/006/V031/V031

SOURCE: RZh. Fizika, Abs. 6 V215

64

AUTHOR: Mazyukevich, N. P.; Shabalina, L. A.; Skoda-UL'yanov, V. A.

TITLE: Critical energies of the elements, calculated by the Belen'kiy-Tamm method

CITED SOURCE: Dokl. i soobshch. Ushgorodsk. un-t, Ser. Fiz.-matem. i istor. n., no. 5, 1962, 30-38

TOPIC TAGS: electron, critical energy, element

TRANSLATION: A table is presented of the critical electron energies for the majority of the elements of the periodic system, and also for water and air. It is noted that the obtained results differ quite noticeably from the data given by Rossi (High-energy Particles, GITTL, Moscow, 1955). The authors attribute this difference to the fact that in their method, unlike in the calculations by Rossi and others, the density effect is taken into account, and averaging is carried out over the equilibrium spectrum. An approximate formula is given for the calculation of the critical energy of the element as a function of Z; this formula

21

Card 1/2

L 16153-63

ACCESSION NR: AR3005149

differs from the analogous formula given by Belen'kiy and Ivanenko (RZhFiz, 1961, 4B309). V. Mkhaylov.

DATE ACQ: 15Jul63

SUB CODE: PH

ENCL: 00

Card 2/2

L 17586-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/JG/DM

ACCESSION NR: AP3005223

62 S/0089/63/015/002/0146/0151

AUTHORS: Parlag, A. M.; Suvorov, A. D.; Shkoda-U'lyanov, V. A.; Shabalina, L. A.TITLE: Computation of photoneutron¹⁹ yield from mixtures of SiO sub 2 with small amounts of beryllium, water, lithium, carbon, uranium and thorium

SOURCE: Atomnaya energiya, v. 15, no. 2, 1963, 146-151

TOPIC TAGS: SiO sub 2, photoneutron yield, photoneutron, beryllium, water, lithium, carbon, uranium, thorium

ABSTRACT: The avalanche theory of Belenkiy and Tamm (see the article by S. Z. Belenkiy and I. P. Ivanenko, Uspekhi fiz. nauk, 19, 1959, 632) is applied for the computations of the yield curves for the photoneutrons from mixtures described in the title. The computation was made for irradiation by both electrons and neutrons. The results are given in 5 tables for mixtures of several elements, and in 2 figures for mixtures of sand with 1% of only one element. The photoneutron method might find an application in the analysis of lithium, uranium,²⁷ and thorium in ores. Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: none

Card 1/1/

MAZYUKEVICH, N.P.; SHABALINA, L.A.; SHKODA-UL'YANOV, V.A., dotsent

Critical energies of elements as calculated by Belen'kii -
Tamm's method. Dokl. i soob. UzhGU. Ser. fiz.-mat. i ist.
nauk no.5:30-38 '62. (MIRA 17:9)

ACCESSION NR: AP4037562

S/0056/64/046/005/1540/1544

AUTHOR: Dorosh, M. M.; Parlag, A. M.; Shkoda-Ul'yanov, V. A.;
Shabalina, L. A.

TITLE: On contradictory results of measurements of the (Gamma, n)
reaction cross sections for lead

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1540-1544

TOPIC TAGS: lead, gamma neutron reaction, cascade, gamma quantum,
photoneutron

ABSTRACT: In view of the disparity between the experimental yields
for heavy and medium-Z elements at low energies and the values cal-
culated by the Belen'kiy-Tamm cascade theory, an experiment was set
up to measure the cross sections of the (γ , n) reaction on lead, in-
duced by bremsstrahlung, since the published data for the cross sec-
tion of some elements, including lead, are contradictory. The mea-

Card 1/5

ACCESSION NR: AP4037562

Measurements were made with a 25-MeV betatron with a tungsten target. The neutrons were registered with a setup analogous to that described by Gavrilov and Lazareva (ZhETF v. 30, 855, 1956). The cross section obtained in the maximum was 0.65 b, coinciding with the value obtained by means of monochromatic γ quanta. A comparison of the calculations of the photoneutron yield with the aid of the obtained cross section and with the experimental data of Grizhko et al. (ZhETF, v. 38, 1370, 1960) confirms the discrepancy between theory and experiment. It is therefore suggested that the Belen'kiy-Tamm spectrum is not accurate in the energy region in question, greatly distorting the (γ, n) -reaction cross section both in form and in absolute magnitude. The reasons for the observed discrepancies are now under investigation. Orig. art. has: 2 figures.

ASSOCIATION: Uzhgorodskiy gosudarstvennyy universitet (Uzhgorod State University)

Card 2/5

ACCESSION NR: AP4037562

SUBMITTED: 20Jul63

DATE ACQ: 09Jun64

ENCL: 02

SUB CODE: NP

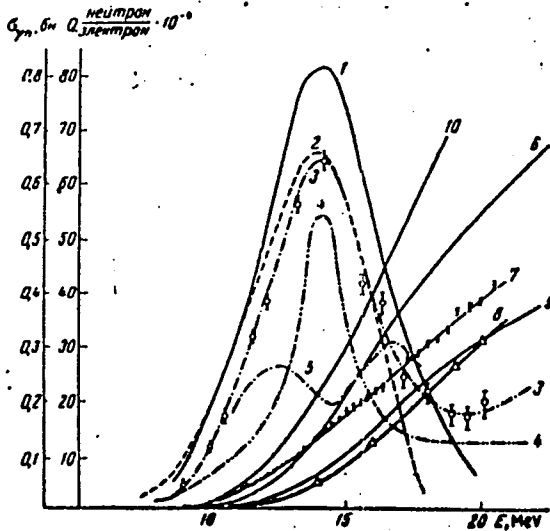
NR REF SOV: 007

OTHER: 006

Card 3/5

ACCESSION NR: AP4037562

ENCLOSURE: 01

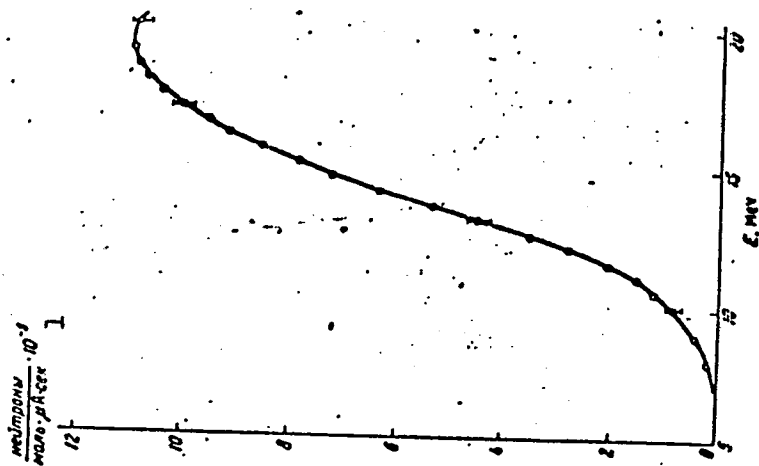


Cross section of (γ, n) reaction on lead and photon neutron yield from an infinitely thick sample of lead, induced by electrons. The left ordinates are the (γ, n) reaction cross sections in barns, and the right ordinates are the absolute neutron yields in neutron/electron units; curve 2 represents the (γ, n) cross section on lead, obtained in the present work and calculated from the yield curve of encl. 02

Card 4/5

ACCESSION NR: AP4037562

ENCLOSURE: 02



Yield curve for photoneutrons from lead, induced by bremsstrahlung
I - neutrons/mole-μA-sec

Card 5/5

GAVRILOVA, L.V., kand.biologicheskikh nauk; SHABALINA, L.P., studentka

Influence of growth stimulants on the tomato crop. Biol. v shkole
no. 1:47-49 Ja-F '61. (MIRA 14:4)

1. Kirovskiy pedagogicheskiy institut.
(Tomatoes) (Growth promoting substances)

SHABALINA, N.S.

Hydrogeological conditions in manganese deposits of the northern
Urals. Mat. po geol. i pol. iskop. Urala no. 6: 134-142 '58.

(MIRA 12:10)

(Ural Mountains--Manganese ores)

SHABALINA A
ZAIETSKIY, V.N.; SHABALINA, N.S.; YARKINA, A.F.

Automatic apparatus for deaeration and pasteurization of fruit and
berry juices. Kons. 1 ov. prom. 13 no.2:14-17 # '58. (MIRA 11:2)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy pro-
myshlennosti.

(Food industry--Equipment and supplies)

AUTHOR: Shabalina, N.S. SOV, 132-59-1-9/18

TITLE: ~~The Hydro-Geological Conditions of the Occurrence of~~
Manganese Ore Deposits of the Northern Ural (Gidrogeolog-
icheskiye usloviya mestorozhdeniy margantsevykh rud
Severnogo Urala)

PERIODICAL: Razvedka i okhrana neдр, 1959, Nr 1, pp 36-43 (USSR)

ABSTRACT: The manganese ore deposits of the North Ural are situated
in the Ivdel' and Serov districts of the Sverdlovsk
oblast and extend for many km as a narrow belt along the
outcropping Paleozoic rocks of the eastern slope of the
North Ural. The depth, at which the ore-bearing layer
is situated, is 150 m. In the course of stopping works
at one of the deposits, the underground water burst through
the underlying porphyrite layer and inundated the deposit.
The average water debit was 8-10,000 cu m an hour. The
10-year-long study and survey of the deposits, organized
by the Ural geological management, disclosed a zone of
tectonic disturbance in the Paleozoic rocks which
accumulated the underground waters, and all the manganese
deposits in the northern part of the region up to the

Card 1/2

SOV/132-59-1-9/18

The Hydro-Geological Conditions of the Occurrence of Manganese Ore
Deposits of the Northern Ural

Ivdel' river were waterlogged. To create safe working conditions on the parts adjacent to the tectonic zone, the water pressure must be lowered to the level of the mining works. The exploitation of the deposits in the southern part of the deposits is complicated by the necessity to drain the underlying sands and aleurolites. There are eight profiles and one layout and four Soviet references.

ASSOCIATION: Sverdlovskiy gornyy institut (The Sverdlovsk Mining Institute)

Card 2/2

UL'YANKIN, M. G.; Prinsipali uchastiye: GIDALEVICH, M. G.;
DUL'NEVA, I. P.; ZASLAVSKIY, A. S.; SHABALINA, I. S.;
CHMILENKO, N. M.; PROKHOROVICH, L. Ye.

Separators for juice manufacture. Trudy MNIIPP 1:49-62 '61.
(MIRA 16:1)

(Separators(Machines)) (Fruit juices)

PRAVDA, Ye.I., kand.ekonom.nauk; SHABALINA, N.S.

Analyzing the performance of the evaporating apparatus developed
by the All-Union Scientific Research Institute of the Canning
Industry in the cooking of fruit preserves. Trudy MNIIPP 3:99-102
'63. (MIRA 18:1)

SHABALINA, N.S.

Significance of tectonics and recent tectonics in the distribution of interstitial underground waters in Northern Uralis.
Trudy Sver. gor. inst. no.43:129-133 '69.

(MIRA 18:7)

SHABALINA, O.K.

✓ The structure of extra-thin films of copper hydroxide formed spontaneously on the surface of an aqueous tetraminocopper solution. S. G. Mokrushin, G. A. Kitaev, and O. K. Shabalina. *Doklady Akad. Nauk S.S.S.R.* 94, 1109-1113 (1957). The structure of $Cu(OH)_2$ films was studied on the surface of tetraminocopper soln. formed by placing a drop of the soln. on the cover glass directly over the cardioid condenser lens of a microscope, and permitting the NH_3 to vaporize slowly. $Cu(OH)_2$ was formed hydrolytically and appeared under the microscope as a multitude of brilliant colloidal particles in a lively Brownian movement. An extremely thin film was finally formed on the surface, to which the coarser particles in the suspension adhered. A secondary formation was observed on the cover glass, and it was composed of deposited spherical coagulated particles. Some microscopic pictures of the film are reproduced.

W. M. Sternberg

62

(2)

Ural Polytech Inst. im. S.M. Kurov

SHABALINA, O. K.

The structure of thin copper sulfide films on the boundary surface between solution and gas. S. G. Mokrushin, Ye. D. Tkachev, and O. K. Shabalina (Ural Polytech. Inst., Sverdlovsk). *Kolloid. Zhur.* 19, 597-8 (1957); *J. C.S.* 49, 11736e. — The films obtained by the action of 0.05% H₂S in air on aq. 0.2-2N CuSO₄ solns. consisted of colloidal aggregates, as shown by an electron microscope. J. J. Bikerman

4

11

18(4)

AUTHORS:

Kuznetsov, S.I., Derevyankin, V.A.,
Shabalina, O.K.

SOV/163-58-4-15/47

TITLE:

Investigation of the Recrystallization Process of Gibbsite Into
Bemite (Issledovaniye protsessa perekristallizatsii gidrargillita
v bemit)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4,
pp 87 - 93 (USSR)

ABSTRACT:

At temperatures of over 120° , gibbsite, if observed in an aqueous or basic medium, becomes unstable and changes into "bemite" (Refs 1, 2). Up to now, this process has not yet been fully investigated. In the present instance the course of recrystallization of gibbsite into "bemite" (Bohemian ruby?) was investigated by means of X-ray analysis and electronic microscopy. A description is given of the experimental method. The recrystallization in question took place at 210° in water or alternatively in aluminate solutions of different concentrations, saturated or unsaturated with respect to "bemite". Electron-microscopic investigations offered the possibility of following the changes occurring in the surface particles of hydroxide during the recrystallization process of gibbsite into

Card 1/2

Investigation of the Recrystallization Process
of Gibbsite Into Bemite

SOV/163-58-4-15/47

"bemite" under various conditions. At the same time, the re-crystallization tests in aluminate solutions gave clear evidence of one of the causes of the reduction of the size of the crystals. With an increase of the temperature of the aluminate solution up to 80 - 90° the gibbsite crystals split up into smaller particles causing fragments to be scattered in all directions. Thus, aluminate solutions effect the splitting-up of gibbsite crystals and this is to be regarded as the first cause of the comminution of hydroxide during the recrystallization process. There are 4 figures and 5 references, 4 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: March 15, 1958

Card 2/2

12.9100

67709

AUTHOR: Shabalina, O.K.

SOV/126-7-3-5/44

TITLE: Experience With Sighting Methods in Electron Microscopy²¹
(Opyt osvoyeniya pritsel'nogo metoda elektronnoy mikroskopii)

PERIODICAL: Fizika metallov i metallovedeniye, Vol 7, Nr 3, pp 350-353 (USSR), 1957

ABSTRACT: The so-called sighting method in electron microscopy enables a definite portion selected on a specimen surface with an optical microscope to be accurately studied with an electron microscope. There are many variations of the sighting method (Refs.2, 3 and 5-8). However, they are little used in investigations as they require great skill in the preparation of specimens in order to get positive results. In the present work well-known and well-established operations of laboratory technique were used. The sequence of these operations was as follows:
(1) Marks were made on the specimen surface by impressing a diamond pyramid at a distance of 0.2-0.3 mm from the portion of the micro-specimen to be studied.
(2) Polystyrene prints were made by successive 10-fold

Card 1/4

SOV/126-7-3-5/44

Experience With Sighting Methods in Electron Microscopy

pouring of the specimen surface with 0.5, 1, 2 and 5% solutions of polystyrene in benzene. The prints were dried in a stream of hot air (55-60°C) for 15 minutes after each pouring, and then in a desiccator for 10 to 15 hours. The dried prints were easily removed from the micro-specimen surface.

(3) The metal was spread on the contact side of the polystyrene print by a well-known method in vacuum (Refs.1,4).

(4) In order to strengthen the metallic film and to make it stick to the diaphragm or screen, it was covered with a layer of collodium. The collodium film was made by the usual method (Refs.1,4).

(5) Joining by sighting of the print with the screen.

(6) Dissolving the polystyrene by immersion in benzene for 5 minutes, followed by immersion in ethyl bromide for 15 to 20 minutes, and in pure benzene for 5 minutes. It was then dried.

Card 2/4 Figs. 1-6 illustrate the method suggested. The author arrives at the following conclusions:

67709

SOV/126-7-3-5/44

Experience with the Sighting Methods in Electron Microscopy

- (1) The method of sighting worked out for electron microscopy is applicable to any metal or alloy.
- (2) Removal of the print from the specimen does not damage its surface.
- (3) Experiments can be carried out indefinitely with the same specimen.
- (4) The relief picture can be verified by other prints of the same portion of the microspecimen. ✓
- (5) For the investigation of deep reliefs thicker polystyrene prints must be used.
- (6) If it is required to increase the contrast of the "working" print the latter can be shaded, as its "positive" side is directed outwards from the screen. To the same end, and also in order to obtain stronger films, other materials than aluminium may be used for spraying, e.g. titanium or carbon.

Card 3/4

There are six figures and 8 references, of which 4 are Soviet and 4 English.

67:09

SOV/126-7-3-5/44

Experience with the Sighting Methods in Electron Microscopy

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S.M. Kirova
(Ural Polytechnic Institute imeni S.M. Kirov)

SUBMITTED: August 2, 1957.

✓

Card 4/4

18(4)

SOV/163-59-1-10/50

AUTHORS: Derevyankin, V. A., Kuznetsov, S. I., Shabalina, O. K.

TITLE: Investigation of the Aluminum Hydroxide Forming in the Spontaneous Decomposition of Aluminate Solutions (Issledovaniye gidrooksi alyuminiya, obrazuyushcheyiya pri samoprizvol'nom razlozhenii alyuminatnykh rastvorov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 42-47 (USSR)

ABSTRACT: The method used in this investigation is described first. The aluminate solution was obtained by dissolving A00 aluminum in a chemically pure caustic soda solution. The solutions thus obtained contained 25 - 264 g/l Na_2O and were practically free from sodium carbonate. The molar ratio $\text{Na}_2\text{O}:\text{Al}_2\text{O}_3$ in the solutions was 1.193 and 1.70. Observations with the electron microscope in combination with an X-ray structural analysis provided the information for the determination of the phase composition, the shape and the nature of the surface of aluminum hydroxide crystals formed during the spontaneous decomposition of aluminate solutions. The most

Card 1/2

SOV/163-59-i-10/50

Investigation of the Aluminum Hydroxide Forming in the Spontaneous Decomposition of Aluminate Solutions

interesting conclusions drawn in this paper are as follows:
1) The newly precipitated aluminum hydroxide forming in the spontaneous decomposition of aluminate solutions of different concentration, is a hydrargillite. If the aluminum hydroxide is kept in the parent solutions for some time, bayerite is found in the precipitation product of this hydroxide. 2) The crystals of newly precipitated aluminum hydroxide exhibit a surface still in a state of development. The surface is in direct contact with the parent solution. In the course of time their habit turns into that of hydrargillite crystals. In highly concentrated solution they develop a pronounced bayerite habit. 3) If the crystals are kept in the parent solutions it is found that tentacles are formed on the surface of the hydroxide particles, which take the shape of thin triangular or rhombic platelets. There are 3 figures, 1 table, and 3 references, 1 of which is Soviet.

ASSOCIATION: Ural'skiy politekhnicheskii institut (Ural Polytechnical Institute)

SUBMITTED: March 29, 1958

Card 2/2

KUZNETSOV, S.I.; DEREVYANKIN, V.A.; SHABALINA, O.K.

Decomposition of aluminate solutions under the effect of additions
of aluminum salts and oxalic acid. *Izv. vys. ucheb. zav.; tsvet.*
met. 3 no.4:65-68 '60. (MIRA 13:9)

1. Ural'skiy politekhnicheskiy institut. Kafedra metallurgii legkikh
metallov.

(Aluminates)

(Chemistry, Metallurgic)

81910

S/126/60/010/01/017/019
E073/E535

Electron Microfractography as Applied to Ferrites

are summarised thus:

- 1) Electron microfractography can be applied to single and polycrystalline ferrites. It is simpler and more convenient to utilise fractured specimens than polished ones.
- 2) On the cleavages of single crystals and on individual grains of polycrystalline specimens relief details and various defects can be observed.
- 3) In polycrystalline specimens defects due to imperfect sintering and porosity could be seen. It was also possible to evaluate the grain size.
- 4) Investigation of ferrites by means of electron microfractography enables detection of defects in technology and apparently will assist in establishing a relation between the properties and the microstructure of ferrites. There are 7 figures and 6 references, 5 of which are Soviet and 1 English.

ASSOCIATIONS: Institut metallurgii UFAN SSSR (Metallurgical Institute, Ural Branch, AS, USSR) and Ural'skiy politekhnicheskii institut imeni S.M. Kirova (Ural Polytechnical Institute imeni S.M.Kirov) H

Card 2/2

SUBMITTED:

December 25, 1959

5.4120, 5.4130

77626
SOV/80-33-2-1/52

AUTHORS: Kuznetsov, S. I., Derevyankin, V. A., Shabalina. O, K.

TITLE: The Effect of Boemite and Diaspore Addition on the Rate of Decomposition of Aluminate Solutions

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 257-266 (USSR)

ABSTRACT: This is the first article of a series devoted to study of different aluminum hydroxides and oxides on the rate of decomposition of aluminate solutions. Decomposition of the aluminate solutions with seed crystals of boemite and diaspore was studied in this article. The starting aluminate solutions were prepared from "pure" brand aluminum and chemically pure NaOH. The amount of Al_2O_3 in these solutions was 120-135 g/liter and that of Na_2O_{gen} , 122.5-144 g/liter; Na_2O_{kst} , 121-131 g/liter. Note: Na_2O_{gen} is the amount of Na_2O in the solution in the form of alkali, aluminate, and soda; Na_2O_{kst}

Card 1/9

The Effect of Boemite and Diaspore Addition on 77626
the Rate of Decomposition of Aluminate Solutions SOV/80-33-2-1/52

is the amount of Na_2O in a form of alkali and aluminate. The molar ratio, α_{gen} of $\text{Na}_2\text{O}_{\text{gen}}$ to Al_2O_3 is 1.63-1.735 and that of $\text{Na}_2\text{O}_{\text{kst}}$ to Al_2O_3 , α_{kst} is 1.60-1.73. The amount of organic substances in the starting aluminate solutions varied from 0 to 2%. The following seed crystals were used: boemite obtained by roasting hydrargillite at 300° for 3 hours, henceforth called thermal boemite; boemite obtained by hydrothermal recrystallization of hydrargillite at 300° for 8 hours; diasporite synthesized by A. Laubengayer and R. Weisz method (J. Am. Chem. Soc., 65, 247 (1943); and product of incomplete hydrothermal recrystallization of boemite into diasporite, containing 75% diasporite and 25% boemite. The size of the seed crystals varied from -40 to $+100 \mu$. The decomposition temperature ranged from 56° at start down to 30° after 72 hours in all cases. The seeding activity of the thermal boemite is shown in Fig. 1.

Card 2/9

The Effect of Boemite and Diaspore Addition on the Rate of Decomposition of Aluminate Solutions 77626
SOV/80-33-2-1/52

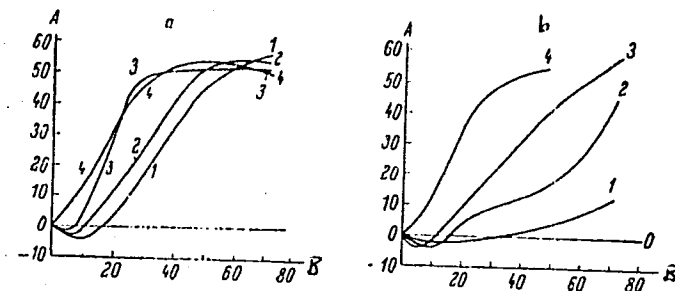


Fig. 1. Decomposition kinetics of the aluminate solution with different amounts of thermal boemite: a - without organic admixtures; b - with organic admixtures, 0.96% O₂ based on Na₂O gen.; A - degree of the solution decomposition (in %); B - duration of the decomposition (hours). The seeding ratio: 1 - 0.05; 2 - 0.1; 3 - 0.2; 4 - 0.5.

Card 3/9

The Effect of Boehmite and Diaspore Addition on ⁷⁷⁶²⁶
the Rate of Decomposition of Aluminate Solutions SOV/80-33-2-1/52

Note: The seeding ratio is the ratio of Al_2O_3 in seed crystal to Al_2O_3 in solution. The seeding activity of the hydrothermal boemite is shown in Fig. 2.

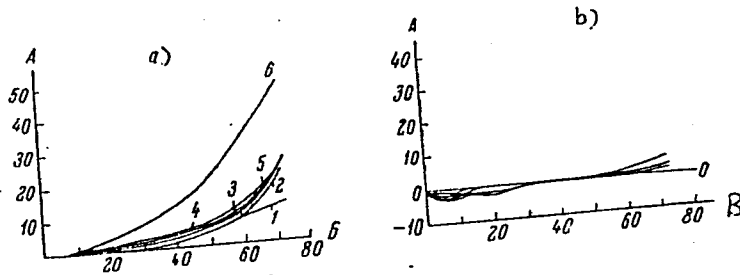


Fig. 2

Card 4/9

See caption on Card 5/9

The Effect of Boemite and Diaspore Addition on ⁷⁷⁶²⁶
the Rate of Decomposition of Aluminate Solutions SOV/80-33-2-1/52

Caption to Fig. 2:

Fig. 2. Decomposition kinetics of the aluminate solution with different amount of hydrothermal boemite: a - without organic admixtures; b - with organic admixtures, 0.25% O₂ based on Na₂O_{gen}; A - degree of solution decomposition (in %); B - duration of the decomposition (hours). The seeding ratio: 1 - 0.02; 2 - 0.05; 3 - 0.07; 4 - 0.1; 5 - 0.2; 6 - 0.5. The seeding ratio in Fig. 2b is between 0.02 and 0.5.

The seeding activity activity of the product of incomplete recrystallization of boemite into diaspore is shown in Fig. 3.

Card 5/9