

PROCESSES AND PROPERTIES INDEX

GA

Theory of the photoelectric conductivity of allochromatic crystals. S. Ryzhanov. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 16, 229-25 (1946).— The expl. relations of the frequency ν_m of the max. of selective absorption and the crystal lattice const. δ of allochromatic alkali halide crystals, namely $\nu_m = k/\delta^2$ for F-bands and $\nu_m = k'/\delta$ for L-bands (where k and k' are const.) can be derived theoretically under the assumption that the inner photoelec. effect involves a transition of the electron into the band of dielec. cond. Quantum-mech. treatment leads to expressions for the spectral distribution of the quantum yield and the width of the selective max. Photoelec. cond. of colored crystals and the temp. dependence of the electron displacement are discussed in the light of the new theory. N. Thon

Chemical Abstracts

Chemical Abstracts

ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION

INDEXED	ABSTRACTED	INDEXED	ABSTRACTED
A		A	
B		B	
C		C	
D		D	
E		E	
F		F	
G		G	
H		H	
I		I	
J		J	
K		K	
L		L	
M		M	
N		N	
O		O	
P		P	
Q		Q	
R		R	
S		S	
T		T	
U		U	
V		V	
W		W	
X		X	
Y		Y	
Z		Z	

22

Distribution of electric potential in the atoms of a mixture. S. Ryzhakov. *J. Exptl. Theoret. Phys. (U.S.S.R.)* 10, 851-5 (1945) (in Russian). By following the Thomas-Fermi method as applied by Nordheim to the calcul. of the potential of extraneous atoms immersed in a dielectric, but starting with Dirac's differential equation for the max. electron impulse, R. shows that the soln. may either be continuous or the potential well around the atom may be surrounded by a potential barrier. The latter case arises when the extraneous atom is immersed in a semiconductor or a metal with an electron concn. n less than 5×10^{21} /cc. Numerically, for alkali metal atoms in a medium of $n = 3 \times 10^{21}$, the width of the barrier is 2 Å., its height 0.7 e.v. at abs. zero. At temp. T , the height is reduced by $(kT/e) \ln .1$, where $A = \text{const.}$ of the Fermi distribution. The problem is of interest for the theory of the photoelec. effect. N. Thon

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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RYZHANOV, S. G.

Photoelectric effect in very thin films of alkali metals.
 S. G. Ryzhanov. *J. Exptl. Theoret. Phys. (U.S.S.R.)* 17,
 19-20 (1947) (in Russian).—Since the interpretation of the
 selective max. of the photoelec. yield w by interference
 effects, implying proportionality between the photoelec.
 current and E_{\parallel}^2 (parallel component of the elec. vector),
 has been shown to be inconsistent with observed facts and
 the distribution formula of Lawrence and Edlefsen (*C.A.*
 24, 1030) for alkali metal vapor inapplicable to thin films,
 a quantum-mech. theory is developed involving calcn. of
 the potential barrier due to interaction of electrons and
 tunneling of excited electrons across the barrier surrounding
 the film. The width of the selective max. being equal to
 the energy width $\hbar\Gamma/2\pi$ of the virtual excitation level, w
 in the neighborhood of the max. is represented by $w = w_{\max}$
 $\Gamma^2 / [(\omega - \omega_m)^2 + (\Gamma/2)^2]$ where ω_m = frequency of the
 max., and $w_{\max} = (e^2\hbar/2\pi^2m^2c) [(\omega_m - \omega_0)^2/\omega_0^2]^{1/2} \gamma^m (\sin^2\theta / \cos\theta)$,
 where θ = angle of incidence of the light on the film
 and γ a function of the work function; the integral photo-
 elec. yield is of the order $2\pi^2e^2/\hbar c$, in agreement with
 measurements of absorption of light in mol. films of alkali
 metals.
 N. Thon

USSR/Physics

Mar 1947

Photoelectric Effect
Chemistry - Silver Halides

"Internal Photo-effect in Silver-haloid Crystals,"
S. G. Ryzhanov, 11 pp

"Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki"
Vol XVII, No 3

The internal photo-effect in idiochromatic silver-haloid crystals is discussed. The relation between the photo-current and the spectral distribution of light is deduced and absorption is given.

ID

341103

Radiative transitions of heavy atomic nuclei. S. Ryzhanov (Azerbaijani State Univ., Baku, U.S.S.R.). *Zh. Eksp. Teor. Fiz.* 47, 516-54 (1973). (Untranslated.)
The energy change of the excited nucleus is considered dependent on the change of spacing of the nuclear particles. The energy of heavy nuclei ($Z = 84$, $A = 216$) is derived on the basis of the electrocapillary model as the sum of vol., surface, and field terms. The shape is slightly off-spherical corresponding to an elongated ellipsoid of revolution. Such a nucleus is stable to small distortions. Dynamics of the nucleus are discussed by treating the kinetic

energy as the sum of rotational and vibrational energies of an equiv. solid body. If the energy of the noncentral and centrifugal forces is ignored, the Hamiltonian for the deformation vibrations appears as a pure quadratic in the velocity. The roots of the transcendental equation for the 2nd and 4th harmonics are very close to each other and quite different from the others. Equations are also derived for the frequency of polarization vibrations. Non-central forces and, to a lesser extent, the centrifugal forces lead to coupling of the independent vibrations, which is especially strong for the 2nd and 4th harmonics. The vibrational quantum no. N is related to the rotational quantum no. L by $N = 2L - L$, where $L = 0, 1, 2, 3$. In the ground state $N = L = 0$. States with even N also have even L and are sym. in reflection through the center. Equations for the intensity of electromagnetic radiation and the tensor of the elec. quadrupole moment are given. For quadrupole radiation the transitions $N \rightarrow N$ and $P \rightarrow N$ are forbidden. Selection rules are given for the permitted transitions. The discharge of excitation through internal conversion is also discussed in terms of electrostatic interaction of the electron charge with the nuclear quadrupole. The matrix elements are given for the interaction energy. M. I. Senko

RYZHANOV, S. G.

Rzhanov, S. G. "On the mechanism of the formation of latent photographic images", Trudy nauch.-issled. in-ta matematiki i fiziki (Azerbaydzh, gos. unt im Kirova), Vol I, 1949, p. 69-89

SO: U-5241, 17, December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

RYZHANOV, S. G.

Golant, V. Ye.

"Vibration-rotation spectrum of atomic nuclei." V. Ye. Golant. Reviewed by S. G. Ryzhanov. Zhur. eksp. i teor. fiz. 23 no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

Ryzh

CH

Dissociation theory of crystals. S. G. Ryzhanov. *Trudy Azerbaidzh. Univ., Ser. Fiz.-Mat.* 1955, No. 5, 47-65; *Referat. Zhur., Fiz.* 1955, No. 2716. — A quantum-mech. theory for the dissoc. processes of a cryst. lattice is considered. A case in which there is only one pair is developed: a dislocated atom—a hole. The possible states are described in terms of the perturbation theory. The ψ function of a crystal in the zero approximation is formed by the usual method from individual functions of the atoms $\psi_n(x - x_i)$, where index n denotes the individual state of the atom, x the coordinate of the center of gravity of the atom, x_i the coordinate of some junction or interjunction to which the given atom is directed. The local deformation being taken into account, it is necessary to multiply the crystal function, which is constructed from a function of ψ_n , by the wave function of normalized displacement of atoms of the deformed crystal. The individual functions of ψ_n satisfy the Schroedinger equation with potential energy $U(x - x_i)$ of the atom in the self-consistent field of the remaining atoms. Since the potential wells vary for the atoms located at the junctions and at interjunctions, the individual ψ functions for the first are $\psi(x_i - x_i) = \psi_1(U)$, and for the 2nd, $\psi_\gamma(x_i - x_i) = \psi_\gamma(U)$, where γ designates the atoms. The energy values are, accordingly, E_0 and E_γ . The solution of the corresponding secular problem leads to an energy zone that disintegrates into 2 nonoverlapping bands, one of which encompasses a state of predissoc. and the other, a state of dissoc., the 1st band being below the 2nd. The local de-

formation which occurs can be calcd. by adding the mean energy of the local deformations to the diagonal matrix elements. The characteristics of the "movement" of the violators (dislocated atoms, gaps, or pairs) are obtained usually from the relation of energy to the wave no. in the corresponding energy bands. The mean speed of the motion of the violators at a temp. different from zero is detd. by a formula analogous to the formula of Ya. I. Frenkel. The substitution of secular equations by corresponding tentative equations makes it possible to study the diffusion process of the violators from the place where they are formed; thus, the Frenkel formula as a diffusion coeff. has a quantum-mech. basis. A generalization of the theory for the case of "many pairs" makes it possible to derive an equil. distribution of pairs and dislocated atoms by use of statistics of systems with an undetd. no. of particles. A study of the effect of crystal boundaries leads to the conclusion that the arrangement of surface levels is detd. by the sign of the exchange integrals ("volume" and "surface"); it follows from this that the holes tend to remain in the crystal vol., and the dislocated atoms tend to be adsorbed on the surface. On the basis of qual. considerations, Frenkel and Schottky came to this same conclusion earlier.

Marjorie Ketner

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USSR 9

539.162

18583. Rotation levels and spectra of heavy nuclei.
S. G. RYZHANOV. Letter in Zh. eksper. teor. Fiz., 24,
Nov. 3-36:2 (1953) In Russian.

Provides mathematical basis for the idea expressed
in a previous paper [Abstr. 5670 (1953)], viz. that
the 3 different values of rotation constant B (15, 20
and 26.5 keV) are related to nuclear shells.

F. LACHMAN

RMZ BSH

Card 1/1 : Pub. 146-2/18

Author : Ryzhanov, S. G.

Title : Application of the Thomas-Fermi method to intranuclear oscillations

Periodical : Zhur. eksp. i teor., 26, pp 264-269, Mar 1954

Abstract : The author treats the natural oscillations of the nucleus in accordance with the electro-capillary model and calculates the natural frequencies of the oscillations. Eight references, 6 Western and 2 USSR (Ya. I. Frenkel', ZhETF, 9, 641, 1939; S. G. Ryzhanov, ZhETF, 24, 361, 1953).

Institution : Institute of Physics, Acad. Sci. Latvian SSR

Submitted : October 4, 1952

RYZHANOV S G

The frequencies of the capillary and elastic vibrations of the electrocapillary nucleus. S. G. Ryzhanov. *Zhur. Eksp. i Teor. Fiz.*, 26, 509-10 (1954). In Prenkel's (*C.A.*, 33, 9118) electrocapillary model of the at. nucleus the nuclear fluid was assumed to be incompressible. If compressibility effects are taken into consideration, a reduction of the characteristic frequencies of the nucleus is obtained. S. Cora

USSR/Nuclear Physics - Heavy nuclei

Card 1/1 Pub. 146 - 18/26

Author : Ryzhanov, S. G.

Title : Problem of rotational levels and of the spectra of heavy nuclei. II

Periodical : Zhur. eksp. i teor. fiz., 29, August 1955, 247-249

Abstract : In the present communication the writer presents the results of calculations of the relative intensity of groups of alpha-particles in $RdAc \rightarrow AcX$ on the basis of model of nuclear rotators (S. G. Ryzhanov, *ibid.*, 23, 417, 1952), and compares with experimental data of Rasetti and Hans Bethe (1940), at the basis of the computations being the quantum-mechanical theory of alpha-decay as expounded in the monograph of Bethe. The writer concludes that the possibility of theoretically interpreting the large experimental material on alpha and gamma spectra of essentially radioactive elements on the basis of the scheme of nuclear rotators indicates that this scheme is not devoid of theoretical interest. Ten references: e.g. S. G. Ryzhanov, *ibid.*, 24, 361, 1953; I. P. Selinov, Atomnyye yadra i yadernyye prevrashcheniya [Atomic nuclei and nuclear transformations], GIFML, 1951.

Institution : Kishinevskiy State University

Submitted : September 8, 1954

Category : USSR/Nuclear Physics - Structure and Proportions of Nuclei

C-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 534

Author : Ryzhanov, S.G.

Inst : Kishinev State Univ., USSR

Title : On the Theory of Asymmetrical Fission of Heavy Nuclei

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 599-601

Abstract : It is shown that the acceptance of hypothesis proposed by Ya. I. Frenkel', in which the spontaneous and forced fissions are considered as a tunnel effect, growing respectively from the ground to the excited levels of the splitting nucleus, leads to a unique explanation of the basic laws of the asymmetric fission. By generalizing the quantum-mechanical equation of the α decay, the author derives an equation for the fission probability w , which gives the correct order of magnitude for the spontaneous fission under the assumption that the process goes through an intermediate stage of contiguous spheres. Expanding in w/w in a series (w is the probability of the symmetrical fission) gives a sufficiently accurate expression for the probability of the asymmetric fission. From this equation it follows that the asymmetry of the distribution of the charges of the fragments

Card : 1/2

Category : USSR/Nuclear Physics - Structure and Proportions of Nuclei

C-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 534

affects the probability of the asymmetric fission considerably more than the asymmetry of the distribution of the masses. An equation is derived for the dependence of the period of the spontaneous fission on the stability parameter.

The results turn out to be in good agreement with the experimental data. For the fission period of U^{236} , formed after capturing a thermal neutron, agreement with experiment is obtained by assuming that the radius of the potential well increases by 1.2 times for the excited level. This assumption is equivalent to taking into account the effect of the deformation of the surface on the probability of the tunnel fission. A relative deformation of 0.5 is enough to explain the difference in the periods of the spontaneous and forced fissions. Good agreement with experiment is obtained also for the fission of 15 -- 20 Mev neutrons under the assumption that all the kinetic energy of the incident particle is transferred to the fission fragments.

Card : 2/2

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1539
AUTHOR RYZANOV, S.G.
TITLE The Connection between α -Decay and the Deformation of the Nucleus.
PERIODICAL Žurn. eksp. i teor. fis., 31, fasc. 2, 332-333 (1956)
Issued: 5.10.1956

Here a connection between the deformation of the surface of the nucleus and the relative intensities of the α -groups in composed α -spectra of radioactive nuclei is described. Computation results were then applied to the α -spectrum of RnAc. The following factors act upon the intensity of the α -groups: The exponential factor in the well-known formula by GAMOW-BETHE, from which there results the transmission coefficient of the α -particle through the potential barrier, and a factor before the exponential expression for the probability of the "barriereless" emission of an α -particle by a radioactive nucleus.

The present work leads to a modified formula for the transmission probability through the barrier: $w = w_0 \exp[-S(E, R)]$; $S(E, R) = (8Ze^2/hv) [\arccos \sqrt{x} - \sqrt{x(1-x)} - (4/5) \sqrt{x(1-x)} \beta_{\max}]$; $x = E/V$. Here Ze denotes the electric charge of the daughter nucleus, v and E denote the velocity and energy respectively of the α -particle, V - maximum height of the potential barrier. Unlike what is the case in the ordinary formula, a term with the relative deformation β ($\beta_{\max} \sim \Delta R/R$) is here introduced (at the point of the greatest deformation or extension of the nuclear surface). It is sufficient to assume that the excitation of the daughter nucleus by the emitted α -particle changes the factor β only by 10% with respect to the

Žurn. eksp. i teor. fis, 31, fasc. 2, 332-333 (1956) CARD 2 / 2 PA - 1539

ground level. Such a modification of β , however, causes a double or threefold modification of intensity. The order of magnitude of $\Delta \beta$ is completely different in the one-particle- and multi-particle models of the nucleus. It is true that $\Delta \beta = (\eta K/C)I(I+1)$. Here:

$C = M_2 \omega_2^2 R_c^2$, M_2 denote the effective oscillation mass of the second oscillation harmonic, ω_2 - its frequency, R_c - the nuclear radius, K - the coefficient at the first power of β with the binding energy of the nucleon with the nuclear surface. It is true that $K = k \sqrt{5/4\pi} [3i^2 - j(j+1)] / 4j(j+1)$. Here k denotes the coupling constant with the surface, i - the quantum momentum of the α -particle, and j - the change of momentum of the nucleon which is outside the shell, η - a numerical coefficient of the order 10^{-2} . The quantity K is not to be put directly equal to k . The factor taking account of the influence exercised by nuclear deformation does not change the statistic weight of the state with $I = 0$ (main group), but it increases the statistic weights of the states with $i > 2$ considerably and diminishes the statistic weights of the states with $i < 2$ ($i < 2$?). (This is true in the case of the condition $k > 0$). The above may be considered to be an indirect proof of the collective nuclear model.

INSTITUTION: KISINEV State University.

RyZHANOV, S. G.

4

✓ 3529

CONNECTION BETWEEN α -DECAY AND NUCLEAR DEFORMATION, S. G. Ryzhanov (Kishinev State Univ.). Soviet Phys. JETP 3, 282-4(1957) March.

A connection between the deformation of the nuclear surface and the relative intensities of α groups in complex α spectra of radioactive nuclei is established. (B.J.H.)

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RYZHANOV, S. G.

AUTHOR: Ryzhanov, S. G.,

89-1-13/29

TITLE: The α -Decay of RdAc According to the Collective Model and the Spins of the AcX Nucleus (Al'fa-raspad RdAc po kollektivnoy modeli i spin yadra AcX)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 1, pp. 80-81 (USSR)

ABSTRACT: The following may be said about the levels after theoretical investigation: (the energies of the levels were taken from Ref.1).
1. The levels 59, 286 and 332 KeV are one-particle levels.
2. The levels 110, 173, 238 are probably rotation satellites of the level 59 KeV.
3. The β -transition of 50,2 KeV is correctly ascribed to a transition between the levels 286 and 238 KeV. There are 1 table and 5 references, 1 of which is Slavic.

SUBMITTED: May, 31, 1957

AVAILABLE: Library of Congress

Card 1/1

L 33605-66 EWI(m)

ACC NR: AR6016164

SOURCE CODE: UR/0058/65/000/011/V006/V006

29
B

AUTHOR: Ryzhanov, S. G.

TITLE: Rotational levels and rotational spectra of nuclei 19

SOURCE: Ref. zh. Fizika, Abs. 11V36

REF SOURCE: Uch. zap. Kishinevsk. un-t, v. 75, 1964, 12-17

TOPIC TAGS: nuclear energy level, spectrum, nuclear shell model, correlations statistics

ABSTRACT: A hypothesis is advanced that the nucleons in medium and heavy nuclei are separated into three layers (corresponding to the magic numbers 28, 50, and 82), each of which has its own deformation and moment of inertia. A number of considerations is advanced with respect to the density distribution in the nucleus and pair correlations between nuclei in order to justify this hypothesis. A formula is obtained for the energy of the rotational levels of the nucleus in such a model of three rotators. Yu. Smirnov [Translation of abstract]

SUB CODE: 18/

Card 1/1 29

L 27747-66 EWT (M) 1

SOURCE CODE: UR/0386/66/003/011/0457/0458

ACC NR: AP6018708

AUTHOR: Ryzhanov, S. G.

ORG: none

TITLE: Possible experimental observation of the helicity of the neutrino

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 11, 1966, 457-458

TOPIC TAGS: neutrino, quantum number, gyroscope

ABSTRACT: The author shows that the method proposed by Zacharias (Science v. 125, 627, 1957) for experimentally observing the helicity of the neutrino, which has hitherto remained a hypothetical experiment, can be realized by depositing β -active material on the liquid-drop gyroscope constructed by the American firm "Martin Orlando", and described in detail by J. H. Simpson (Nucl. Gyroscopes v. 2, 42, 1964). The use of such an instrument to observe the helicity of the neutrino is based on an elementary mechanical relation expressing the conservation of angular momentum. Since the moment of inertia of the drop is known, the angular acceleration due to rotation induced in it by the spin from all the electrons absorbed in it from radioactive cobalt deposited on the surface of the drop can be determined from the number of radioactive decays per second. The radioactive cobalt can be coated on either side of the droplet surface by evaporation, i.e., condensation from vapor. Such a coating can be made non-uniform with any desired distribution of surface density.

27
B

19

ACC NR: AP6018708

In view of the smallness of the droplet radius, observation of the rotation entails no difficulty. Orig. art. has: 2 formulas.

SUB CODE: 20/ SUBM DATE: 03Apr66/ OTH REF: 002

Card 2/2 *Do*

RYZHANOV, S.G.

Effect of K-forbiddenness in gamma spectra of transuranium
elements. Uch.zap.Kish.un. 69:19-22 '64.

(MIRA 18:12)

RYZHANOV, S.G.

Exciton absorption of light in silver bromide. Opt. i spektr.
17 no. 2:294-295 Ag'64 (MIRA 17:8)

ACCESSION NR: AP4043021

s/0051/64/017/002/0294/0295

AUTHOR: Ry*zhanov, S. G.

TITLE: Exciton absorption of light in silver bromide

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 294-295

TOPIC TAGS: exciton absorption, exciton scattering, light absorption, silver halide recording medium, photographic image theory, quantum yield

ABSTRACT: The author presents further arguments in favor of his original hypothesis concerning the exciton mechanism of light absorption in silver bromide (ZhETF v. 15, 108, 1945; Zh. nauchn. i prikl. fotografii i kinematografii, v. 3, 3, 1958) and refutes an opposing point of view expressed by P. V. Meyklyar (FTT v. 4, 5, 1962). It is shown that the absorption of ultraviolet light in the region of the spectrum where exciton absorption takes place can be

Card 1/2

ACCESSION NR: AP4043021

characterized by a sector in the Hilbert wave-function space with indefinite metric (Collection: Problemy* fiziki. Nelineynaya kvantovaya teoriya polya [Problems in Physics. Nonlinear Quantum Field Theory], p. 143, IL, 1959), where exciton absorption is characterized by optically allowed transitions. It is shown further that exciton dissociation can occur at normal or even lower temperatures. Further evidence in favor of the hypothesis is obtainable from experiments on light absorption and latent-image production in single crystals deep-frozen to the temperature of boiling hydrogen, when the quantum yield drops vary sharply. If this is the cause of trapping, irradiation with resonant infrared should restore the quantum yield. The contrary would serve as irrefutable evidence in favor of the exciton mechanism of latent-image production.

ASSOCIATION: None

SUBMITTED: 31Oct62

ENCL: 00

SUB CODE: OP

NR REF SOV: 002

OTHER: 005

Card 2/2

RYZHANOV, S.G.

Alpha-decay of certain heavy isotopes. Uch. zap. Kish. un. 49:
3-10 '61. (MIRA 15:7)
(Alpha rays --Decay) (Isotopes)

RYZHANOV, S.G.

Effect of optically forbidden transitions in the mechanism of
light absorption by silver bromide. Zhur.nauch. i prikl.fot.
i kin. 4 no.2:136-138 Mr-Ap '59. (MIRA 12:4)

1. Gosudarstvennyy universitet, Kishinev.
(Silver bromide) (Absorption of light)

RYZHANOV, S.G.

α -decay of Th^{227} on a collective model and the spin of Ra^{223}
in its ground state. Zhur. eksp. i teor. fiz. 36 no.3:928-
930 Mr '59. (MIRA 12:5)
(Thorium--Decay) (Uranium--Isotopes) (Nuclear reactions)

23(5)

SOV/77-4-2-11/18

AUTHOR: Ryzhanov, S.G.

TITLE: The Role of Optically Prohibitive Migrations in the Mechanics of Light Absorption by Silver Bromide (Rol' opticheski-zapreshchennykh perekhodov v mekhanizme pogloshcheniya sveta bromidom serebra)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr 2, pp 136-138, (USSR)

ABSTRACT: The author first discusses the system of optically permissible migrations, i.e. migrations in a crystal during which the wave number of the electron completing a quantum migration from one zone to another is preserved. The figure illustrates this system and gives the three energetic zones of a silver bromide crystal: the valence zone of the electrons on the Br⁻ ions: the exciton zone: the zone of conductivity of the AgBr crystal. He states that the exciton formed as a result of absorption of the corresponding light quantum should

Card 1/4

SOV/77-4-2-11/18

The Role of Optically Prohibitive Migrations in the Mechanics of Light Absorption by Silver Bromide

have a wave number equal to that of the light quantum itself. However, at temperatures of around 300°K the wave number is not always preserved, due to the interaction of the electron completing the optical migration with the fairly large number of phonons present at such temperatures. Such migrations are known as optically prohibitive. Especially severe violation of the preservation of the wave number will occur in the presence of phonons near the threshold Debye frequency, as the balance of energy cannot be sufficiently destroyed in the acts of absorption and expulsion of the phonon, as its energy is small compared with that of the photon of the visible or ultra-violet region of the spectrum. In the presence of optically prohibitive migration quantum migrations of the electron are possible, caused by the absorption of the photon from the top of the valence zone to the bottom of the zone of conducti-

Card 2/4

SOV/77-4-2-11/18

The Role of Optically Prohibitive Migrations in the Mechanics of
Light Absorption by Silver Bromide

ty. The author suggests that this may explain the shift of the long-wave threshold of light absorption from the ultra-violet (270 $\mu\mu$) to the visible (\sim 500 $\mu\mu$) when the temperature is raised from 20°K to 300°K [Refs. 4,6]. At 20° optically prohibitive migrations are virtually nonexistent, but at 300°K they cause a sharp rise of light absorption straight from the long-wave threshold of 500-520 $\mu\mu$. They should also lead to a shift of the exciton absorption from the ultra-violet to the visible region when the crystal is heated up from 20°K to 300°K. However a drop in the temperature of the maximum exciton caused by temperature spread [Ref.5] makes it practically unnoticeable on the light absorption curve at 300°K, previously investigated by Hilsch and Pohl [Ref. 6]. The author finally remarks that the considerations set out in S.G. Ryzhanov's

Card 3/4

SOV/77-4-2-11/18

The Role of Optically Prohibitive Migrations in the Mechanics of
Light Absorption by Silver Bromide

work (1958, Vol 3, Nr 3 of this journal - see Ref. 6)
on the role of the exciton mechanics in light absorption
and light sensitivity become more convincing, when
taken in conjunction with the considerations which he,
(the author), has developed in this article. There is
1 figure and 7 references, 3 of which are Soviet, 2
English-language and 2 German.

ASSOCIATION: Kishinev, Gosudarstvennyy universitet (Kishinev, State
University)

SUBMITTED: December 23, 1958

Card 4/4

SOV/56-36-3-47/71

21(8)

AUTHOR:

Ryzhanov, S. G.

TITLE:

The α -Decay of Th^{227} According to a Collective Model and the Spin of Ra^{223} in Its Lowest State (α -raspad Th^{227} po kolektivnoy modeli i spin Ra^{223} v yego nizshem sostoyanii)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 928-930 (USSR)

ABSTRACT:

The present paper (Letter to the Editor) intends to determine the spin of the lowest Ra^{223} -level. For this purpose the author uses the formula by Ter-Martirosyan (Ref 3) for the probability of the α -decay of a mother nucleus with spin I_0 .

If I' is assumed to be the projection of spin I of the corresponding daughter nucleus level, the following is assumed for the spin of the lowest level (transitions between the levels 59 - 29 - 0 kev, electric quadrupole transitions):

a) $I = I' = I_0 - 2$, b) $I = I' = I_0 - 1$, c) $I = I' = I_0$.

These cases are discussed in the following. Thus, the following is obtained in case a) e.g. for the intensity ratio (29-0 kev):

Card 1/2

SOV/56-36-3-47/71

The α -Decay of Th^{227} According to a Collective Model and the Spin of
 Ra^{223} in Its Lowest State

$J_{29}/J_0 = 2e^{-14.2 \cdot 0.029/(I_0+1)}$, empirically 5%:19%, and for
 Th^{227} this results either in $I_0 = 7/2$ or $I_0 = 9/2$, and for
the daughter nucleus Ra^{223} $I_0 = 3/2$ or $5/2$. Case b) leads to
 $I_0 = 3/2$. For the transitions 307 - 286, 286 - 0 (magnetic
dipole transition) 286 - 238 kev (electric dipole transition)
the ratios are also discussed in short. For J_{307}/J_{286} 1% : 17%
is obtained empirically, and for $I_0 = 7/2$ or $9/2$ the value
5/2 is obtained for the spin of the lowest level of the daughter
nucleus. There are 4 references, 3 of which are Soviet.

SUBMITTED: ; October 22, 1958

Card 2/2

RYZHANOV, S.G.

Exciton mechanism of the absorption of light by silver bromide
in the visual realm and close ultraviolet. Zhur. nauch. i prikl.
fot. i kin. 3 no.5:382-384 S-O '58. (MIRA 11:10)

1. Gosudarstvennyy universitet, Kishinev.
(Photographic emulsions)

RYZHANOV, S.G.

Mechanism of the formation of the latent image. Zhur. nauch.
i prikl. fot. i kin. 3 no.1:3-15 Ja-F '58. (MIRA 11:2)

1. Kishinev Gosudarstvennyy universitet.
(Photography--Developing and developers)

SOV-77-3-5-14/21

AUTHOR: Ryzhanov, S.G.

TITLE: The Exciton Mechanism of the Absorption of Light by Silver Bromide in the Visual and Near Ultra-Violet Bands (Ob eksitonnom mekhanizme pogloshcheniya sveta bromidom serebra v vizual'noy oblasti i blizkom ul'trafiolete)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1958, Vol 3, Nr 5, pp 382-384 (USSR)

ABSTRACT: The author brings additional arguments to support his hypothesis as to the exciton mechanism of light-absorption by silver bromide during latent image formation in the visual and near ultra-violet bands of the spectrum. A narrow but sharp absorption maximum may be observed in this section and, in support of his theory, the author tries to show that this is brought about by the formation of excitons by light quanta. The position, width and energy of this absorption maximum are discussed and show to be in keeping with exciton theory and formulae. There are 8 references, 6 of which are Soviet, 1 American and 1 German.

Card 1/2

SOV-77-3-5-14/21

The Exciton Mechanism of the Absorption of Light by Silver Bromide in the
Visual and Near Ultra-Violet Bands

ASSOCIATION: **Kishinevskiy gosudarstvennyy universitet (Kishinev State University)**

SUBMITTED: June 7, 1958

1. Light--Absorption 2. Silver bromide--Absorptive properties

Card 2/2

RYZHANOV, S.G.

The alpha decay of radioactinium on the collective model and the
spin of AcX . Atom.energ. 4 no.1:80-81 Ja '58. (MIRA 11:4)
(Alpha rays) (Actinide series)

L 31566-66

0

ACC NR: AT6010586

pressure are valid even for alloys in which the dependence of the interatomic distance r on pressure P substantially deviates from linearity. Orig. art. has: 3 figures and 12 formulas.

SUB CODE: 11 / SUBM DATE: 16Dec64 / ORIG REF: 002 / OTH REF: 003

Card

2/2 LC

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R001446520007-2

RYZHANOVSKAYA, S. A.

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R001446520007-2"

"Anaphylactic Shock in Dogs with Experimental Hypertension," RZhBiol,
No 6, 1954.

RYZHANSKIY, V.B.

Determining order specifications for rolled metal rods based on
length. Avt. prom. no. 5:3-4 My '58. (MIRA 11:7)

1. Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy
promyshlennosti.

(Rolling(Metalwork))

SOV/137-59-1-1613

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 214 (USSR)

AUTHOR: Ryzhanskiy, V. B.

TITLE: Establishment of Lineal Standard Dimensions in Ordering of Bar Stock (Opredeleniye usloviy zakaza metalloprokata po dline)

PERIODICAL: Avtomob. prom-st', 1958, Nr 5, pp 3-4

ABSTRACT: Owing to the fact that the length of bar stock stored in shops of automobile plants is not a whole multiple of the unit length in which the material is used, the amount of metal waste reaches considerable proportions. It is established that metal waste may be eliminated most effectively by means of replacing the standard bars (B) with B's of exact length (I), B's the length of which is a whole multiple of the unit length desired (II), and B's which are sufficiently long to be sectioned into a number of unit lengths with a certain short length left over (III). The NIITAvtoprom developed a technique for the evaluation of the economic expediency of employing such B's: according to this method, the computation is based on simple formulae for the length rather than the weight of the B's; the sectional profile of the B's is disregarded. This method is applicable to all branches

Card 1/2

SOV/137-59-1-1613

Establishment of Lineal Standard Dimensions in Ordering of Bar Stock

of industry wherever the consumption of metal satisfies transit norms. Formulae are given together with a table permitting the determination of the minimum length of metal wasted during cutting of standard B stock which would justify the employment of (I), (II), and (III). Examples of applying the formulae and the table are given. According to calculations, the saving of metal resulting from the employment of this method in two plants alone should amount to 1000 tons.

V. M.

RYZHANSKIY, V.B.

Determining economically efficient lay-out of sheet metal.
Avt.prom. no.1:3-5 Ja '59. (MIRA 12:1)

1. Nauchno-issledovatel'skiy institut transporta avtomobil'noy
promyshlennosti.

(Sheet-metal work)

AUTHOR: Ryzhanskiy, V.B.

113-58-5-2/22

TITLE: The Determination of Conditions for Ordering Rolled Metal
by Length (Opredeleniye usloviy zakaza metalloprokata po dline)

PERIODICAL: Avtomobil'naya Promyshlennost', 1958, Nr 5, pp 3-4 (USSR)

ABSTRACT: The total weight of the ends of rod-shaped metal, rejected by all automobile plants, amounts to 10,000 tons a year. The analysis of the work of these plants showed that the best way to avoid such wastage is the use of rods of various length instead of rods of normal length. The NIITavtoprom has elaborated a method of determining the economical expediency of use of uniform, multiple and normal rods, by which the calculation is made according to the length, and not the weight of these rods. The economy of metal is calculated according to the following formula:

$$Q=B \frac{\ell_1 - \ell_2}{\ell_a}$$

where B is the amount of metal in kg for the annual program;

Card 1/2 ℓ_1 - average waste from normal rod in meters

113-58-5-2/22

The Determination of Conditions for Ordering Rolled Metal by Length

l_2 - waste from uniform (plus the remnant) rod in meters;
 l_a - average length of the rod;
for the uniform and multiple rods l_2 is equal 0.
There is one table.

ASSOCIATION: NIITAvtoprom

AVAILABLE: Library of Congress

Card 2/2 1. Metals--Purchasing--Economic analysis

LYASHENKO, V.I. [Liashenko, V.I.]; RYZHAVSKAYA, N.G. [Ryzhavs'ka, N.H.]

Study of surface recombination by the space photo e.m.f. method
[in Ukrainian with summary in English]. Ukr. fiz. zhur. 3 no.2:
216-222 Apr '58. (MIRA 11:6)

1. Institut fiziki AN URSR.
(Germanium--Electric properties) (Photoelectricity)

25(7)

PHASE I BOOK EXPLOITATION

SOV/1863

Moscow. Tsentral'nyy institut informatsii tsvetnoy metallurgii

O primeneni tverdykh splavov i mineralokeramiki; sbornik statey
(Use of Hard Alloys and Cermets; Collection of Articles) Moscow, 1957.
87 p. 2,000 copies printed.

Sponsoring Agencies: USSR. Gosudarstvennaya planovaya komissiya.
Glavnoye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy.

Ed.: Ye. V. Stroyeva; Tech. Ed.: N. S. Trusov.

PURPOSE: This collection of articles is intended to answer the number of questions received from various establishments and organizations by the Central Institute of Information on Nonferrous Metallurgy.

COVERAGE: This book describes carbides and ceramics mass produced in the USSR. It gives recommendations for effective use of individual types and sizes. Their properties under working conditions are also given. F. A. Kats, B. Z. Levin, and F. N. Fomenko were the scientific editors for the book. The

Card 1/2

S/123/59/000/09/05/036
A002/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 9, p. 20,
32925

AUTHOR: Ryzhavskiy, I. M.

TITLE: Grades of Hard-Alloys and Products Made From Them for the Mining
Industry

PERIODICAL: V sb.: O primeneni i tverdykh splavov i mineralokeramiki, Moscow,
1957, pp. 5-7

TEXT: In the mining and petroleum industries, "BK 15" (VK15), "BK 11"
(VK11), "BK 8" (VK8) and "BK 6" (VK6) tungsten-type, hard alloys (carbides)
are used. Operational properties and fields of application of these alloy
grades are given.

Translator's note: This is the full translation of the original Russian
abstract.

✓B

Card 1/1

SOV/137-59-3-5698

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 104 (USSR)

AUTHOR: Ryzhavskiy, I. M.

TITLE: 'Grades of Hard Alloys and Articles Made From Them for the Mining Industry (Marki tverdykh splavov i izdeliya iz nikh dlya gornoy promyshlennosti)

PERIODICAL: V sb.: O primenenii tverdykh splavov i mineralokeramiki. Moscow, 1957, pp 5-17

ABSTRACT: Catalog data are adduced relative to the physico-mechanical and operational properties, the types, and the shapes and dimensions of hard-alloy platelets applied in cutting and drilling machinery for purposes of mining. Recommendations are offered on the selection and use of the various grades of hard alloys of the VK type for impact- and rotary-type drilling through rocks.

I. B.

S/123/59/000/007/001/014
AC04/AC01

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 7, p. 58,
24769

AUTHOR: Ryzhavskiy, I.M.

TITLE: Sintered Carbide Grades and Articles Made of Them for the Drawing,
Grooving and Upsetting, of Metals

PERIODICAL: V sb.: O primeneni i tverdykh splavov i mineralokeramiki. Moscow,
1957, pp. 55 - 76

TEXT: Bibliographic entry

SOV/137-59-3-5699

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 104 (USSR)

AUTHOR: Ryzhavskiy, I. M.

TITLE: Grades of Hard Alloys and Articles Made From Them for Machining of Metals and Nonmetallic Articles (Marki tverdykh splavov i izdeliya iz nikh dlya obrabotki rezaniyem metallov i nemetalliches-kikh izdeliy)

PERIODICAL: V sb.: O primenenii tverdykh splavov i mineralokeramiki. Moscow, 1957, pp 18-42

ABSTRACT: Catalog data are adduced relative to the physico-mechanical and operational properties and the shapes and dimensions of platelets made of standard hard alloys of the VK and TK types that can be applied in cutting tools. The usefulness of the various grades in the machining of metallic and nonmetallic materials is shown.

I. B.

Card 1/1

RYZHAVSKIY, I.M.; SHEPELEVA, M.D.; KATS, F.A., nauchnyy red.; LEVIN, B.Z.,
nauchnyy red.; FOMENKO, F.N., nauchnyy red.; STROYEVA, Ye.V.,
red.; TRUSOV, N.S., tekhn.red.

[Use of hard alloys and cermets; a collection of articles]
O primeneni tverdykh splavov i mineralokeramiki; sbornik statei.
Moskva, 1957. 87 p. (MIRA 11:6)

1. Moscow. Tsentral'nyy institut informatsii tsvetnoy metallurgii.
(Alloys) (Cermets)

BLEY, S.S., inzh.; RYZHAVSKIY, K.B., inzh.

Making stressed reinforced trestle beams of fuel-feed
arrangements of the Staro-Beshevo State-Owned Regional Electric
Power Plant. Energ.stroi. no.4:26-27 '59. (MIRA 13:8)
(Staro-Beshevo--Electric power plants)
(Trestles)

BEREZIN, V.; RYZHAYA, M., mladshiy nauchnyy sotrudnik

Is it possible to spray on dewy flax? Grazhd. av. 21 no.6:22
Je '64. (MIRA 17:8)

1. Starshiy inzh. ot dela sel'skokhozyaystvennoy aviatsii Gosudarstvennogo nauchno-issledovatel'skogo instituta Grazhdanskogo vozdushnogo flota (for Berezin). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut l'na (for Ryzhaya).

KARTASHOV, V.N.; RYZHAYA, M.A., aspirant

Equipment for chemical weed control in crops. Zashch. rast. ot
vred. i bol. 7 no.3:39 Mr. '62. (MIRA 15:11)

1. Glavnyy agronom kolkhoza "Put' k kommunizmu", Kimrskogo rayona,
Kalininskoy oblasti (for Kartashov). 2. Vsesoyuznyy institut
L'na (for Ryzhaya). (Kimry District--Weed control)

1/5
741.01
.R91

Ekonomiya materialov v mekhanicheskikh i instrumental'nykh tsekhakh
(Economizing materials in machinery repair and tool-making shops) Moskva,
Mashgiz, 1953.

234 p. illus., diagra., tables.

L 45075-56

ACC NR: AP6025301 (A) SOURCE CODE: UR/0416/66/000/007/0071/0073

AUTHOR: Ryzhechkin, A., (Lieutenant Colonel); Prokof'yev, G., (Lieutenant Colonel); Korolev, A., (Major); Kotel'nikov, P., (Captain) 7

ORG: none 13

TITLE: Floating bridge made of river transportation facilities 14

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 7, 1966, 71-73

TOPIC TAGS: floating bridge, bridge

ABSTRACT: A floating bridge consisting of eight platform barges of 200-ton carrying capacity each placed alongside of each other was constructed across a river in the summer of 1965. The river was 97 m wide with 1.76 m of maximum depth and the speed of the current was 0.42 m/sec. The barges were paired, and the distance between the barges was 7 m. The removable section of the bridge, for the passage of boats, was 23 m wide, and it could be removed by means of a

L 45075-66
ACC NR: AP6025301

φ

tugboat, an operation which required only 10 min. The authors list the advantages of this type of floating bridge. Orig. art. has: 3 figures. [DW]

SUB CODE: 19/ SUBM DATE: none/

GTRSPPL Vol. 5-No. 1 Jan. 1952

Ryzhei, I.P., Change of hereditary bases of the heads of winter wheat, 177-8

Akademiya Nauk, S.S.S R., Doklady Vol. 78, No. 4

L 13329-63

EWT(1)/EWT(m)/BDS AFFTC/AMD/ASD AR/K

ACCESSION NR: AP3003939

S/0205/63/003/004/0603/0611

AUTHOR: Korotkova, V. P.; Ry*zhekov, V. Ye.; Stashkov, A. M.

57
56

TITLE: Change in the concentration of 17-oxycorticosteroids and hematological indices in dogs after the application of certain chemical protective means and irradiation | 9

SOURCE: Radiobiologiya, v. 3, no. 4, 1963, 603-611

TOPIC TAGS: radiation sickness, ACTH, 17-oxycorticosteroid, adrenocorticotrophic hormone, mercamine, adrenal cortex, antiradiation treatment

ABSTRACT: The pathogenesis and chemical prophylaxis of radiation damage in dogs have been investigated on the basis of functional changes in the adrenal cortex. Several days after an absolute lethal dose (700 r), the concentration of 17-oxycorticosteroids in the peripheral blood plasma first exhibited a decrease, then a buildup, and finally in the terminal period a leveling off above normal. The immediate reaction of the adrenal cortex to the introduction of ACTH was to remain normal throughout all stages of radiation sickness, indicating the retention of reserve powers. The decrease in the concentration of 17-oxycorticosteroids in animals whose suprarenal glands have been screened against irradiation was

Card 1/2

L 13329-63
ACCESSION NR: AP3003939

not as pronounced as in the case of unshielded animals. The reaction to ACTH in the case of the former remained within normal bounds. No substantial differences were observed in the concentration of 17-oxy corticosteroids in animals who had received mercamine (75 mg/kg) and "antifein" (15 mg/kg); the reaction to ACTH in these cases was more pronounced. The results indicate the participation of the hypophysis-adrenal cortex system in the pathogenesis and pharmacological prophylaxis of radiation damage. It is concluded that a change of eosinophils after the introduction of ACTH cannot be used in the evaluation of the functional condition of the adrenal cortex. Orig. art. has: 1 table and 4 figures.

ASSOCIATION: Institut eksperimental'noy meditsiny* AMN SSSR (Institute of Experimental Medicine, AMN SSSR)

SUBMITTED: 21Jul62

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: AM

NO REF SOV: 021

OTHER: 025

Card 2/2

RYZHENKO, A.P., inzh.

Bearing capacity of piles sunk into loam by vibratory sinkers.
Trudy TSNIIS no.47:53-56 '63. (MIRA 16:5)

SUKHOV, V.A.; RYZHENKO, B.F.

Calculation of the field of a traveling TEM wave propagating along
a periodic multiconductor line with round conductors. Radiotekh.
i elektron. 7 no.10:1769-1779 0'62. (MIRA 15:10)
(Electromagnetic waves) (Wave guides)

42120

S/109/62/007/010/007/012
D266/D308

9,1400
AUTHORS:

Sukhov, V.A., and Ryzhenko, B.F.

TITLE:

Calculation of the field of a travelling TEM wave propagating along a periodical multiconductor line of circular cross-section

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 10, 1962,
1769 - 1779

TEXT: The purpose of the paper is to calculate the field of the TEM wave by solving an analog electrostatic problem (V.A. Sukhov, Radiotekhnika i elektronika, 7, 10, 1962, 1780). It is assumed that the circular conductors are situated above a plane of infinite conductivity (in the second section of the paper hints are given for finding the solution in the absence of the plane) and there are N conductors in a period. The coordinate system is chosen in such a way that the y axis is perpendicular to, and the x and z axes lie in, the plane of infinite conductivity. The direction of the z axis is parallel with the conductors. Denoting the coordinates of the center of the kth conductor by ξ_k and η_k and the radius of same

Card 1/3 *S/109/62/007/012/008/012

Calculation of the field of a ...

S/109/62/007/010/007/012
D266/D308

obtained from an integral equation, using the fact that the potential must be constant on the conductors. In a practical case $\rho(\theta_k)$ is expanded into a Fourier series and only the first few terms are taken into account. In the second part of the paper computer results are presented which facilitate the evaluation of a given slow wave structure. For this purpose the interaction impedance and attenuation for a given space harmonic are expressed with the aid of functions plotted in several diagrams. The dispersion characteristic and group velocity can also be calculated if the loading of the conductors is known. There are 7 figures. ✓

SUBMITTED: December 18, 1961

Card 3/3

RYABENKO, R.S.

Possibility of the determination of the total coefficients of the activity of acids and bases. Geokhimiia no.5:556-561 My '65.
(MIRA 18:9)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR, Moskva.

KHCDAKOVSKIY, I.I.; ZHOGINA, V.V.; RYZHENKO, B.N.

Dissociation constants of hydrosulfuric acid at elevated temperatures. Geokhimiia no.7:827-833 Ji '65.

(MIRA 18:11)

I. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo AN SSSR, Moskva. Submitted February 20, 1965.

KHITAROV, N.I., ARUTYUNYAN, L.A.; RYZHENKO, B.N.

Effect of hydrosulfide on the migration of molybdenum in the form of a silicomolybdenum complex under conditions of increased temperatures. Geokhimiia no.3:269-272 Mr '65. (MIRA 18:7)

I. V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

RYZHENKO, B.N.

Determination of the dissociation constant of hydrofluoric acid
and conditions of calcite replacement by fluorite. *Geokhimiia*
no.3:273-276 Mr '65. (MIRA 18:7)

1. V.I.Vernadsky Institute of Geochemistry and Analytical
Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

KHITAROV, N.I.; RYZHENKO, B.N.; LEBEDEV, Ye.B.

Determination of the electric conductivity of the solutions of
sodium carbonate and bicarbonate under hydrothermal conditions.
Geokhimiia no.1:41-47 Ja '63. (MIRA 16:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry,
Academy of Sciences, U.S.S.R., Moscow.
(Sodium carbonate—Electric properties)

RYZHENKO, B.N.

Determination of the dissociation constants of carbonic acid and calculation of the extent of CO_3^{4-} and HCO_3^- ion hydrolysis in the solutions of carbonates and bicarbonates at elevated temperatures. *Geokhimiia* no.2:137-148 F '63.

(MIRA 16:9)

I. Vernadsky Institute of Geochemistry and Analytical Chemistry
Academy of Sciences, U.S.S.R., Moscow.

RYZHENKO, B.N.

Dissociation constant values of carbonic acid at elevated
temperatures. Dokl. AN SSSR 149 no. 3:639-641 M. '63. (MIRA 16:4)

1. Institut geokhimi i analiticheskoy khimii im. Vernadskogo
AN SSSR. Predstavleno akademikom A.P. Vinogradovym.
(Carbonic acid) (Ionization)

RYZHENKO, B.N.

Physicochemical data on the system $\text{Me}_2\text{CO}_3\text{-MeHCO}_3\text{-CO}_2\text{-H}_2\text{O}$ and
some applications to the hydrothermal process. *Geokhimiia* no.5:
443-459 My '63. (MIRA 16:7)

1. Institut geokhimi i analiticheskoy khimii imeni V.I.
Vernadskogo AN SSSR, Moskva.
(Carbonates) (Systems (Chemistry))

PASHINKIN, A.S.; TISHCHENKO, G.N.; KORNEYEVA, I.V.; RYZHENKO, B.N.

Polymorphism of some zinc and cadmium chalcogenides. Kristallografiya
5 no.2:261-267 Mr-Ap '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy univeristet im. M.V.Lomonosova.
(Zinc chalcogenide) (Cadmium chalcogenide)

LEVIN, S.; RYZHENKO, D.; BROMBERG, R.; KUZNETSOV, I.; CHESAK, V.;
ZOLOTUKHINA, G.

Some results of the work of metallurgical plants under the new
conditions. Sots.trud 4 no.9:53-59 S '59. (MIRA 13:1)
(Steel industry--Production standards)

RYZHENKO

LEVIN, S.; RYZHENKO, D.

Standard labor staffs. Sots.trud no.2:66-69 F '57.

(MLRA 10:5)

(Personnel management)
(Steelworkers)

VOLOBUYEV, V.I.; FILIPPOV, I.N.; RYZHENKO, D.M.; CHECHERINDA, S.S.;
SAMURA, I.N.; GRUDSKIY, Ye.B., red.; ANDREYEV, S.P.,
tekhn. red.

[Work experience of innovators in a wire rod mill] Opyt
raboty novatorov provolchnogo stana. Khar'kov, Metal-
lurgizdat, 1954. 89 p. (MIRA 16:8)
(Rolling mills—Technological innovations)

AKSENOV, M., inzh. (Rostov-na-Donu); TOLUBAYEV, P., inzh. (Rostov-na-Donu); RYZHENKO, E., inzh. (Rostov-na-Donu); CHUCHENKO, S., inzh. (Rostov-na-Donu)

Reinforced concrete elements for the repair of buildings.
Zhil.-kom. khoz. 13 no. 5:18-19 My '63. (MIRA 16:8)

(Precast concrete)
(Rostov-On-Don--Apartment houses--Maintenance and repair)

RYZHENKO, Fedor Ivanovich; BERCHIYAN, R.G., kand. tekhn. nauk
nauchn. red.; SAAK'YAN, Yu.A., red.

[Repair of residential buildings] Remont zhilykh zdani.
Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1964. 324 p.
(MIRA 18:12)

RYZHENKO, F., podpolkovnik.

A rifle platoon in a night attack; tactical training with field
firing. Voen.vest. 36 no.4:18-22 Ap '56. (MLRA 9:8)
(Russia--Army--Infantry)
(Night fighting (Military science))

KRYZHANOVSKAYA, V.V., kand.med.nauk; YAKOVENKO, G.I., kand.med.nauk;
RYZHENKO, G.M.

Physiological and hygienic benefit of morning walks for children.
Vrach. delo no.6:121-123 Je '61. (MIRA 15:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut kommunal'noy
gigiyeny. (CHILDREN CARE AND HYGIENE) (WALKING)

KRAVETS, V.I., kand.tekhn.nauk; RYZHENKO, I.A., gornyy inzh.;
SELEDTSOV, V.F., gornyy inzh.

Ways of improving the ventilation in Novovolynsk mines. Ugol'
Ukr. no.6:40 Je '61. (MIRA 14:7)
(Lvov-Volyn' Basin—Mine ventilation)

SHCHERBAN', A.N. [Shcherban', O.N.], akademik; RYZHENKO, I.A. [Ryzhenko, I.O];
SKOROBOGAT'KO, A.A. [Skorobohat'ko, A.A.]

Determining the site of average air velocity measurement in mines with
rectangular and square cross sections. Dop.AN URSS no.8:1050-1052
'60. (MIRA 13:9)

1. Institut teploenergetiki AN USSR i Kiyevskiy gosudarstvennyy
universitet im. T.G. Shevchenko.
(Mine ventilation)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446520007-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446520007-2"

RYZHENKO, I.A., kand.tekhn.nauk

Depth of regulating the ventilation stores and mine sections.
Ugol' Ukr. 7 no.10:15-16 0 '63. (MIRA 17:4)

RYZHENKO, I.A. [Ryzhenko, I.O.]; SHCHERBAN', A.N. [Shcherban', O.H.] akademik

Settling of dust from ventilation currents through adhering to the walls of mine workings. Dop. AN URSS no.2:197-199 '61. (MIRA 14:2)

1. Institut teplotoenergetiki AN USSR.
2. AN USSR (for Shcherban').
(Mine dusts)

ALYSHEV, M.Ya.; BUDZKO, I.A.; ZLATKOVSKIY, A.P.; KRASNOV, V.S.;
KULEFEYEV, G.P.; RYZHENKO, I.Ya.; SYROMYATNIKOV, I.A.;
TEVCSYAN, T.A.; EBIN, L.Ye.

A.M. Sarkisian; obituary. Elektrichestvo no.5:94 My '63.
(MIRA 16:7)
(Sarkisian, Andranik Margarovich, 1904-1963)

RYZHENKO, I.A.[Ryzhenko, I.O.]; SHCHERBAN', A.N.[Shcherban', O.N.], akademik

Pulsation frequency of an air stream [with summary in English].
Dop.AN URSR no.3:303-306 '61. (MIRA 14:3)

1. Institut teploenergetiki AN USSR. 2. AN USSR (for Shcherban').
(Air flow)

SHCHERVAN', A.N., akademik; BARATOV, E.I., kand.tekhn.nauk; RYZHENKO, I.A.,
gornyy inzh.

Temperature and gas-and-dust conditions in the downcast ventila-
tion of stopes. Ugol' Ukr. 5 no.1:17-19 Ja '61. (MIRA 14:1)

1. AN USSR (for Shchervan').
(Donets Basin—Mine ventilation)

RYZHENKO, I.O. [Ryzhenko, I.O.]; SKOROBAGAT'KO, A.A. [Skorobahat'ko, A.A.]

Determination of the site for measuring the mean air velocity
in mines with a trapezoidal cross section. Dop. AN URSR no.5:
1061-1065 '62. (MIRA 18:2)

1. Institut teploenergetiki AN UkrSSR i Kiyevskiy gosudarstvennyy
universitet.

BOBROV, Ivan Vladimirovich; KRICHEVSKIY, Ruvim Markovich;
RYZHENKO, I.A., kand. tekhn. nauk, retsenzent

[Combatting sudden outbursts of coal and gas] Bor'ba s
vnezapnymi vybrosami uglia i gaza. Kiev, Tekhnika, 1964.
327 p. (MIRA 18:3)

KRAVETS, V.I., dots.; RYZHENKO, I.A., inzh.

Effect of the rate of stoping ~~on the condition~~ of gas in a worked
seam. Izv.vys.ucheb.zav.; gor.shur. no.2:78-80 '60, (MIRA 14:5)

1. Kiyevskiy politekhnicheskii institut.
(Mine gases)

RYZHENKO, I.A. [Ryzhenko, I.O.]

Determining the average degree of dust pollution in mine drifts.
Dop. AN URSR no.9:1219-1223 '60. (MIRA 13:10)

1. Institut teploenergetiki AN USSR. Predstavleno akademikom AN
USSR A.N. Shcherbanem.
(Mine dusts)

~~akademik~~

Ventilation stream parameters characterizing the removal of dust
from mines with a circular cross-section. Dop. AN URSS no.10:1384-
1387 '60. (MIRA 13:11)

1. Institut teploenergetiki AN USSR. 2. AN USSR (for Shcherban').
(Mine ventilation)

TSYRUL'NIKOV, A.S., dotsent; RYZHENKO, I.A., gornyy inzhener

Determining the maximum length of machine worked stopes by the
gas release factor. Ugol' Ukr. 3 no.7:13-17 J1 '59.
(MIRA 12:11)

(Stoping (Mining)) (Mine gases)

RYZHENKO, I.A. [Ryzhenko, I.O.]

Parameters of a ventilation stream characterizing the removal
of dust from the stoping faces of mines. Dop. AN URSS no.1:
32-35 '60. (MIRA 13:6)

1. Kiyevskiy politekhnicheskoy institut. Predstavleno akademi-
kom AN URSS A. N. Shcherbanem.
(Air flow) (Mine Ventilation)

KRAVETS, V.I., kand. tekhn. nauk; TSYRUL'NIKOV, A.S., kand. tekhn. nauk;
RYZHENKO, I.A., gornyy inzh.

Qualitative composition of the atmosphere in Volyn' Basin coal mines.
Ugol' Ukr. 3 no.11:22-23 N '59. (MIRA 13:3)

1. Kiyevskiy politekhnicheskii institut.
(Lvov-Volyn' Basin--Coal mines and mining)
(Mine gases)

cc

Mechanism of formation of the latent photographic image. S. Myzhanov. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 13, 108-23(1945)(English summary).—The primary photochem. reaction of the formation of at. silver in the AgBr and AgI crystals is considered. The transfer of an electron by the light from the halide ions to the semi-free state is accompanied by hole formation. The analysis of the problem suggests the possibility of the existence of 2 energy bands: the first one, where the electron and the hole are bound one with another, and the second one, where they are almost free. The first band corresponds to the long-wave maximum of color sensitivity (120 mμ), and the second to the short-wave maximum (320 mμ). The formation of the atomic centers of silver is the result of a catalytic reaction connected with the presence of the local energy levels, as well as of a thermal dissociation.

Roksalane Gamow

A 18-51A METALLURGICAL LITERATURE CLASSIFICATION

ESGNI BOWIIV

1st AND 2ND GROUPS	3rd AND 4th GROUPS	5th AND 6th GROUPS	7th AND 8th GROUPS	9th AND 10th GROUPS	11th AND 12th GROUPS	13th AND 14th GROUPS	15th AND 16th GROUPS	17th AND 18th GROUPS	19th AND 20th GROUPS	21st AND 22nd GROUPS	23rd AND 24th GROUPS	25th AND 26th GROUPS	27th AND 28th GROUPS	29th AND 30th GROUPS	31st AND 32nd GROUPS	33rd AND 34th GROUPS	35th AND 36th GROUPS	37th AND 38th GROUPS	39th AND 40th GROUPS	41st AND 42nd GROUPS	43rd AND 44th GROUPS	45th AND 46th GROUPS	47th AND 48th GROUPS	49th AND 50th GROUPS	51st AND 52nd GROUPS	53rd AND 54th GROUPS	55th AND 56th GROUPS	57th AND 58th GROUPS	59th AND 60th GROUPS	61st AND 62nd GROUPS	63rd AND 64th GROUPS	65th AND 66th GROUPS	67th AND 68th GROUPS	69th AND 70th GROUPS	71st AND 72nd GROUPS	73rd AND 74th GROUPS	75th AND 76th GROUPS	77th AND 78th GROUPS	79th AND 80th GROUPS	81st AND 82nd GROUPS	83rd AND 84th GROUPS	85th AND 86th GROUPS	87th AND 88th GROUPS	89th AND 90th GROUPS	91st AND 92nd GROUPS	93rd AND 94th GROUPS	95th AND 96th GROUPS	97th AND 98th GROUPS	99th AND 100th GROUPS
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PROCESSES AND PROPERTIES INDEX

14
 Theory of the photoelectric conductivity of allochromatic crystals. S. Ryzhanov. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 16, 229-25 (1946).— The expl. relations of the frequency ν_m of the max. of selective absorption and the crystal lattice const. δ of allochromatic alkali halide crystals, namely $\nu_m = k/\delta^2$ for F-bands and $\nu_m = k'/\delta$ for L-bands (where k and k' are const.) can be derived theoretically under the assumption that the inner photoelec. effect involves a transition of the electron into the band of dielec. cond. Quantum-mech. treatment leads to expressions for the spectral distribution of the quantum yield and the width of the selective max. Photoelec. cond. of colored crystals and the temp. dependence of the electron displacement are discussed in the light of the new theory.

CROSS-REFERENCE

CROSS-REFERENCE

ASIA-5LA METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED	INDEXED	ABSTRACTED	FILED
SEP 26 1946	SEP 26 1946	SEP 26 1946	SEP 26 1946
PHOTODUPLICATION SERVICE	PHOTODUPLICATION SERVICE	PHOTODUPLICATION SERVICE	PHOTODUPLICATION SERVICE

22

Distribution of electric potential in the atoms of a mixture. S. Ryzhakov. *J. Exptl. Theoret. Phys. (U.S.S.R.)* 10, 851-5; 1915 (in Russian). By following the Thomas-Fermi method as applied by Nordheim to the calcul. of the potential of extraneous atoms immersed in a dielectric, but starting with Dirac's differential equation for the max. electron impulse, R. shows that the soln. may either be continuous or the potential well around the atom may be surrounded by a potential barrier. The latter case arises when the extraneous atom is immersed in a semiconductor or a metal with an electron concn. n less than 5×10^{21} /cc. Numerically, for alkali metal atoms in a medium of $n = 3 \times 10^{21}$, the width of the barrier is 2 Å., its height 0.7 e.v. at abs. zero. At temp. T , the height is reduced by $(kT/e) \ln .1$, where $A = \text{const.}$ of the Fermi distribution. The problem is of interest for the theory of the photoelec. effect. N. Thon

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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RYZHANOV, S. G.

Photoelectric effect in very thin films of alkali metals.
S. G. Ryzhanov. *J. Exptl. Theoret. Phys. (U.S.S.R.)* 17,
19-20 (1947) (in Russian).—Since the interpretation of the
selective max. of the photoelec. yield w by interference
effects, implying proportionality between the photoelec.
current and E_{\parallel}^2 (parallel component of the elec. vector),
has been shown to be inconsistent with observed facts and
the distribution formula of Lawrence and Edlefsen (*C.A.*
24, 1030) for alkali metal vapor inapplicable to thin films,
a quantum-mech. theory is developed involving calcn. of
the potential barrier due to interaction of electrons and
tunneling of excited electrons across the barrier surrounding
the film. The width of the selective max. being equal to
the energy width $\hbar\Gamma/2\pi$ of the virtual excitation level, w
in the neighborhood of the max. is represented by $w = w_{\max.}$
 $\Gamma^2 / [(\omega - \omega_m)^2 + (\Gamma/2)^2]$ where ω_m = frequency of the
max., and $w_{\max.} = (e^2\hbar/2\pi^2m^2c) [(\omega_m - \omega_0)^2/\omega_0^2] e^{\gamma} \sin^2\theta / \cos\theta$,
where θ = angle of incidence of the light on the film
and γ a function of the work function; the integral photo-
elec. yield is of the order $2\pi^2e^2/\hbar c$, in agreement with
measurements of absorption of light in mol. films of alkali
metals.
N. Thon

USSR/Physics

Mar 1947

Photoelectric Effect
Chemistry - Silver Halides

"Internal Photo-effect in Silver-haloid Crystals,"
S. G. Ryzhanov, 11 pp

"Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki"
Vol XVII, No 3

The internal photo-effect in idiochromatic silver-haloid crystals is discussed. The relation between the photo-current and the spectral distribution of light is deduced and absorption is given.

ID

341103

Radiative transitions of heavy atomic nuclei. S. Ryzhanov (Azerbaijani State Univ., Baku, U.S.S.R.). *Zh. Eksp. Teor. Fiz.* 47, 546-54 (1973). (Unpublished.)
The energy change of the excited nucleus is considered dependent on the change of spacing of the nuclear particles. The energy of heavy nuclei ($Z = 84$, $A = 216$) is derived on the basis of the electrocapillary model as the sum of vol., surface, and field terms. The shape is slightly spheroidal corresponding to an elongated ellipsoid of revolution. Such a nucleus is stable to small distortions. Dynamics of the nucleus are discussed by treating the kinetic

energy as the sum of rotational and vibrational energies of an equiv. solid body. If the energy of the noncentral and centrifugal forces is ignored, the Hamiltonian for the deformation vibrations appears as a pure quadratic in the velocity. The roots of the transcendental equation for the 2nd and 4th harmonics are very close to each other and quite different from the others. Equations are also derived for the frequency of polarization vibrations. Noncentral forces and, to a lesser extent, the centrifugal forces lead to coupling of the independent vibrations, which is especially strong for the 2nd and 4th harmonics. The vibrational quantum no. N is related to the rotational quantum no. L by $N = 2L - L$, where $L = 0, 1, 2, 3$. In the ground state $N = L = 0$. States with even N also have even L and are sym. in reflection through the center. Equations for the intensity of electromagnetic radiation and the tensor of the elec. quadrupole moment are given. For quadrupole radiation the transitions $N \rightarrow N$ and $P \rightarrow N$ are forbidden. Selection rules are given for the permitted transitions. The discharge of excitation through internal conversion is also discussed in terms of electrostatic interaction of the electron charge with the nuclear quadrupole. The matrix elements are given for the interaction energy. M. I. Senko

RYZHANOV, S. G.

Rzhanov, S. G. "On the mechanism of the formation of latent photographic images", Trudy nauch.-issled. in-ta matematiki i fiziki (Azerbaydzh, gos. unt im Kirova), Vol I, 1949, p. 69-89

SO: U-5241, 17, December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

RYZHANOV, S. G.

Golant, V. Ye.

"Vibration-rotation spectrum of atomic nuclei." V. Ye. Golant. Reviewed by S. G. Ryzhanov. Zhur. eksp. i teor. fiz. 23 no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

Ryzh

CH

Dissociation theory of crystals. S. G. Ryzhanov. *Trudy Azerbaidzh. Univ., Ser. Fiz.-Mat.* 1955, No. 5, 47-65; *Referat. Zhur., Fiz.* 1955, No. 2716. — A quantum-mech. theory for the dissoc. processes of a cryst. lattice is considered. A case in which there is only one pair is developed: a dislocated atom—a hole. The possible states are described in terms of the perturbation theory. The ψ function of a crystal in the zero approximation is formed by the usual method from individual functions of the atoms $\psi_n(x - x_i)$, where index n denotes the individual state of the atom, x the coordinate of the center of gravity of the atom, x_i the coordinate of some junction or interjunction to which the given atom is directed. The local deformation being taken into account, it is necessary to multiply the crystal function, which is constructed from a function of ψ_n , by the wave function of normalized displacement of atoms of the deformed crystal. The individual functions of ψ_n satisfy the Schroedinger equation with potential energy $U(x - x_i)$ of the atom in the self-consistent field of the remaining atoms. Since the potential wells vary for the atoms located at the junctions and at interjunctions, the individual ψ functions for the first are $\psi(x_i - x_i) = \psi_1(U)$, and for the 2nd, $\psi_\gamma(x_i - x_i) = \psi_\gamma(U)$, where γ designates the atoms. The energy values are, accordingly, E_0 and E_γ . The solution of the corresponding secular problem leads to an energy zone that disintegrates into 2 nonoverlapping bands, one of which encompasses a state of predissoc. and the other, a state of dissoc., the 1st band being below the 2nd. The local de-

formation which occurs can be calcd. by adding the mean energy of the local deformations to the diagonal matrix elements. The characteristics of the "movement" of the violators (dislocated atoms, gaps, or pairs) are obtained usually from the relation of energy to the wave no. in the corresponding energy bands. The mean speed of the motion of the violators at a temp. different from zero is detd. by a formula analogous to the formula of Ya. I. Frenkel. The substitution of secular equations by corresponding tentative equations makes it possible to study the diffusion process of the violators from the place where they are formed; thus, the Frenkel formula as a diffusion coeff. has a quantum-mech. basis. A generalization of the theory for the case of "many pairs" makes it possible to derive an equil. distribution of pairs and dislocated atoms by use of statistics of systems with an undetd. no. of particles. A study of the effect of crystal boundaries leads to the conclusion that the arrangement of surface levels is detd. by the sign of the exchange integrals ("volume" and "surface"); it follows from this that the holes tend to remain in the crystal vol., and the dislocated atoms tend to be adsorbed on the surface. On the basis of qual. considerations, Frenkel and Schottky came to this same conclusion earlier.

Marjorie Ketner

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USSR 9

539.162

18583. Rotation levels and spectra of heavy nuclei.
S. G. RYZHANOV. Letter in Zh. eksper. teor. Fiz., 24,
Nor. 3-361-2 (1953) In Russian.

Provides mathematical basis for the idea expressed
in a previous paper [Abstr. 5670 (1953)], viz. that
the 3 different values of rotation constant B (15, 20
and 26.5 keV) are related to nuclear shells.

F. LACHMAN

RMZ RSH

Card 1/1 : Pub. 146-2/18

Author : Ryzhanov, S. G.

Title : Application of the Thomas-Fermi method to intranuclear oscillations

Periodical : Zhur. eksp. i teor., 26, pp 264-269, Mar 1954

Abstract : The author treats the natural oscillations of the nucleus in accordance with the electro-capillary model and calculates the natural frequencies of the oscillations. Eight references, 6 Western and 2 USSR (Ya. I. Frenkel', ZhETF, 9, 641, 1939; S. G. Ryzhanov, ZhETF, 24, 361, 1953).

Institution : Institute of Physics, Acad. Sci. Latvian SSR

Submitted : October 4, 1952

RYZHANOV S G

The frequencies of the capillary and elastic vibrations of the electrocapillary nucleus. S. G. Ryzhanov. *Zhur. Eksp. i Teor. Fiz.*, 26, 509-10 (1954). In Prenkel's (*C.A.*, 33, 9118) electrocapillary model of the at. nucleus the nuclear fluid was assumed to be incompressible. If compressibility effects are taken into consideration, a reduction of the characteristic frequencies of the nucleus is obtained. S. Cora

USSR/Nuclear Physics - Heavy nuclei

Card 1/1 Pub. 146 - 18/26

Author : Ryzhanov, S. G.

Title : Problem of rotational levels and of the spectra of heavy nuclei. II

Periodical : Zhur. eksp. i teor. fiz., 29, August 1955, 247-249

Abstract : In the present communication the writer presents the results of calculations of the relative intensity of groups of alpha-particles in $RdAc \rightarrow AcX$ on the basis of model of nuclear rotators (S. G. Ryzhanov, *ibid.*, 23, 417, 1952), and compares with experimental data of Rasetti and Hans Bethe (1940), at the basis of the computations being the quantum-mechanical theory of alpha-decay as expounded in the monograph of Bethe. The writer concludes that the possibility of theoretically interpreting the large experimental material on alpha and gamma spectra of essentially radioactive elements on the basis of the scheme of nuclear rotators indicates that this scheme is not devoid of theoretical interest. Ten references: e.g. S. G. Ryzhanov, *ibid.*, 24, 361, 1953; I. P. Selinov, Atomnyye yadra i yadernyye prevrashcheniya [Atomic nuclei and nuclear transformations], GIFML, 1951.

Institution : Kishinevskiy State University

Submitted : September 8, 1954

Category : USSR/Nuclear Physics - Structure and Proportions of Nuclei

C-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 534

Author : Ryzhanov, S.G.

Inst : Kishinev State Univ., USSR

Title : On the Theory of Asymmetrical Fission of Heavy Nuclei

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 599-601

Abstract : It is shown that the acceptance of hypothesis proposed by Ya. I. Frenkel', in which the spontaneous and forced fissions are considered as a tunnel effect, growing respectively from the ground to the excited levels of the splitting nucleus, leads to a unique explanation of the basic laws of the asymmetric fission. By generalizing the quantum-mechanical equation of the α decay, the author derives an equation for the fission probability w , which gives the correct order of magnitude for the spontaneous fission under the assumption that the process goes through an intermediate stage of contiguous spheres. Expanding in w/w in a series (w is the probability of the symmetrical fission) gives a sufficiently accurate expression for the probability of the asymmetric fission. From this equation it follows that the asymmetry of the distribution of the charges of the fragments

Card : 1/2

Category : USSR/Nuclear Physics - Structure and Proportions of Nuclei

C-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 534

affects the probability of the asymmetric fission considerably more than the asymmetry of the distribution of the masses. An equation is derived for the dependence of the period of the spontaneous fission on the stability parameter.

The results turn out to be in good agreement with the experimental data. For the fission period of U^{236} , formed after capturing a thermal neutron, agreement with experiment is obtained by assuming that the radius of the potential well increases by 1.2 times for the excited level. This assumption is equivalent to taking into account the effect of the deformation of the surface on the probability of the tunnel fission. A relative deformation of 0.5 is enough to explain the difference in the periods of the spontaneous and forced fissions. Good agreement with experiment is obtained also for the fission of 15 -- 20 Mev neutrons under the assumption that all the kinetic energy of the incident particle is transferred to the fission fragments.

Card : 2/2

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1539
AUTHOR RYZANOV, S.G.
TITLE The Connection between α -Decay and the Deformation of the Nucleus.
PERIODICAL Žurn. eksp. i teor. fis, 31, fasc. 2, 332-333 (1956)
Issued: 5.10.1956

Here a connection between the deformation of the surface of the nucleus and the relative intensities of the α -groups in composed α -spectra of radioactive nuclei is described. Computation results were then applied to the α -spectrum of RnAc. The following factors act upon the intensity of the α -groups: The exponential factor in the well-known formula by GAMOW-BETHE, from which there results the transmission coefficient of the α -particle through the potential barrier, and a factor before the exponential expression for the probability of the "barriereless" emission of an α -particle by a radioactive nucleus.

The present work leads to a modified formula for the transmission probability through the barrier: $w = w_0 \exp[-S(E, R)]$; $S(E, R) = (8Ze^2/\hbar v) [\arccos \sqrt{x} - \sqrt{x(1-x)} - (4/5)\sqrt{x(1-x)} \beta_{\max}]$; $x = E/V$. Here Ze denotes the electric charge of the daughter nucleus, v and E denote the velocity and energy respectively of the α -particle, V - maximum height of the potential barrier. Unlike what is the case in the ordinary formula, a term with the relative deformation β ($\beta_{\max} \sim \Delta R/R$) is here introduced (at the point of the greatest deformation or extension of the nuclear surface). It is sufficient to assume that the excitation of the daughter nucleus by the emitted α -particle changes the factor β only by 10% with respect to the

Žurn. eksp. i teor. fis, 31, fasc. 2, 332-333 (1956) CARD 2 / 2 PA - 1539

ground level. Such a modification of β , however, causes a double or threefold modification of intensity. The order of magnitude of $\Delta \beta$ is completely different in the one-particle- and multi-particle models of the nucleus. It is true that $\Delta \beta = (\eta K/C)I(I+1)$. Here:

$C = M_2 \omega_2^2 R_c^2$, M_2 denote the effective oscillation mass of the second oscillation harmonic, ω_2 - its frequency, R_c - the nuclear radius, K - the coefficient at the first power of β with the binding energy of the nucleon with the nuclear surface. It is true that $K = k \sqrt{5/4\pi} [3i^2 - j(j+1)] / 4j(j+1)$. Here k denotes the coupling constant with the surface, i - the quantum momentum of the α -particle, and j - the change of momentum of the nucleon which is outside the shell, η - a numerical coefficient of the order 10^{-2} . The quantity K is not to be put directly equal to k . The factor taking account of the influence exercised by nuclear deformation does not change the statistic weight of the state with $I = 0$ (main group), but it increases the statistic weights of the states with $i > 2$ considerably and diminishes the statistic weights of the states with $i < 2$ ($i < 2$?). (This is true in the case of the condition $k > 0$). The above may be considered to be an indirect proof of the collective nuclear model.

INSTITUTION: KISINEV State University.

Ryzhikov, S. G.

4

✓ 3529

CONNECTION BETWEEN α -DECAY AND NUCLEAR DEFORMATION, S. G. Ryzhikov (Kishinev State Univ.). Soviet Phys. JETP 3, 282-4(1957) March.

A connection between the deformation of the nuclear surface and the relative intensities of α groups in complex α spectra of radioactive nuclei is established. (B.J.H.)

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RYZHANOV, S. G.

AUTHOR: Ryzhanov, S. G.,

89-1-13/29

TITLE: The α -Decay of RdAc According to the Collective Model and the Spins of the AcX Nucleus (Al'fa-raspad RdAc po kollektivnoy modeli i spin yadra AcX)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 1, pp. 80-81 (USSR)

ABSTRACT: The following may be said about the levels after theoretical investigation: (the energies of the levels were taken from Ref.1).
1. The levels 59, 286 and 332 KeV are one-particle levels.
2. The levels 110, 173, 238 are probably rotation satellites of the level 59 KeV.
3. The β -transition of 50,2 KeV is correctly ascribed to a transition between the levels 286 and 238 KeV. There are 1 table and 5 references, 1 of which is Slavic.

SUBMITTED: May, 31, 1957

AVAILABLE: Library of Congress

Card 1/1

L 33605-66 EWI(m)

ACC NR: AR6016164

SOURCE CODE: UR/0058/65/000/011/V006/V006

29
B

AUTHOR: Ryzhanov, S. G.

TITLE: Rotational levels and rotational spectra of nuclei 19

SOURCE: Ref. zh. Fizika, Abs. 11V36

REF SOURCE: Uch. zap. Kishinevsk. un-t, v. 75, 1964, 12-17

TOPIC TAGS: nuclear energy level, spectrum, nuclear shell model, correlations statistics

ABSTRACT: A hypothesis is advanced that the nucleons in medium and heavy nuclei are separated into three layers (corresponding to the magic numbers 28, 50, and 82), each of which has its own deformation and moment of inertia. A number of considerations is advanced with respect to the density distribution in the nucleus and pair correlations between nuclei in order to justify this hypothesis. A formula is obtained for the energy of the rotational levels of the nucleus in such a model of three rotators. Yu. Smirnov [Translation of abstract]

SUB CODE: 18/

Card 1/1 29

L 27747-66 EWT (M) 1

SOURCE CODE: UR/0386/66/003/011/0457/0458

ACC NR: AP6018708

AUTHOR: Ryzhanov, S. G.

ORG: none

TITLE: Possible experimental observation of the helicity of the neutrino

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 11, 1966, 457-458

TOPIC TAGS: neutrino, quantum number, gyroscope

ABSTRACT: The author shows that the method proposed by Zacharias (Science v. 125, 627, 1957) for experimentally observing the helicity of the neutrino, which has hitherto remained a hypothetical experiment, can be realized by depositing β -active material on the liquid-drop gyroscope constructed by the American firm "Martin Orlando", and described in detail by J. H. Simpson (Nucl. Gyroscopes v. 2, 42, 1964). The use of such an instrument to observe the helicity of the neutrino is based on an elementary mechanical relation expressing the conservation of angular momentum. Since the moment of inertia of the drop is known, the angular acceleration due to rotation induced in it by the spin from all the electrons absorbed in it from radioactive cobalt deposited on the surface of the drop can be determined from the number of radioactive decays per second. The radioactive cobalt can be coated on either side of the droplet surface by evaporation, i.e., condensation from vapor. Such a coating can be made non-uniform with any desired distribution of surface density.

27
B

19

ACC NR: AP6018708

In view of the smallness of the droplet radius, observation of the rotation entails no difficulty. Orig. art. has: 2 formulas.

SUB CODE: 20/ SUBM DATE: 03Apr66/ OTH REF: 002

Card 2/2 *Do*

RYZHANOV, S.G.

Effect of K-forbiddenness in gamma spectra of transuranium
elements. Uch.zap.Kish.un. 69:19-22 '64.

(MIRA 18:12)

RYZHANOV, S.G.

Exciton absorption of light in silver bromide. Opt. i spektr.
17 no. 2:294-295 Ag'64 (MIRA 17:8)

ACCESSION NR: AP4043021

S/0051/64/017/002/0294/0295

AUTHOR: Ry*zhanov, S. G.

TITLE: Exciton absorption of light in silver bromide

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 294-295

TOPIC TAGS: exciton absorption, exciton scattering, light absorption, silver halide recording medium, photographic image theory, quantum yield

ABSTRACT: The author presents further arguments in favor of his original hypothesis concerning the exciton mechanism of light absorption in silver bromide (ZhETF v. 15, 108, 1945; Zh. nauchn. i prikl. fotografii i kinematografii, v. 3, 3, 1958) and refutes an opposing point of view expressed by P. V. Meyklyar (FTT v. 4, 5, 1962). It is shown that the absorption of ultraviolet light in the region of the spectrum where exciton absorption takes place can be

Card 1/2

ACCESSION NR: AP4043021

characterized by a sector in the Hilbert wave-function space with indefinite metric (Collection: Problemy* fiziki. Nelineynaya kvantovaya teoriya polya [Problems in Physics. Nonlinear Quantum Field Theory], p. 143, IL, 1959), where exciton absorption is characterized by optically allowed transitions. It is shown further that exciton dissociation can occur at normal or even lower temperatures. Further evidence in favor of the hypothesis is obtainable from experiments on light absorption and latent-image production in single crystals deep-frozen to the temperature of boiling hydrogen, when the quantum yield drops vary sharply. If this is the cause of trapping, irradiation with resonant infrared should restore the quantum yield. The contrary would serve as irrefutable evidence in favor of the exciton mechanism of latent-image production.

ASSOCIATION: None

SUBMITTED: 31Oct62

ENCL: 00

SUB CODE: OP

NR REF SOV: 002

OTHER: 005

Card 2/2

RYZHANOV, S.G.

Alpha-decay of certain heavy isotopes. Uch. zap. Kish. un. 49:
3-10 '61. (MIRA 15:7)
(Alpha rays --Decay) (Isotopes)

RYZHANOV, S.G.

Effect of optically forbidden transitions in the mechanism of
light absorption by silver bromide. Zhur.nauch. i prikl.fot.
i kin. 4 no.2:136-138 Mr-Ap '59. (MIRA 12:4)

1. Gosudarstvennyy universitet, Kishinev.
(Silver bromide) (Absorption of light)

RYZHANOV, S.G.

α -decay of Th^{227} on a collective model and the spin of Ra^{223}
in its ground state. Zhur. eksp. i teor. fiz. 36 no.3:928-
930 Mr '59. (MIRA 12:5)
(Thorium--Decay) (Uranium--Isotopes) (Nuclear reactions)

23(5)

SOV/77-4-2-11/18

AUTHOR: Ryzhanov, S.G.

TITLE: The Role of Optically Prohibitive Migrations in the Mechanics of Light Absorption by Silver Bromide (Rol' opticheski-zapreshchennykh perekhodov v mekhanizme pogloshcheniya sveta bromidom serebra)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr 2, pp 136-138, (USSR)

ABSTRACT: The author first discusses the system of optically permissible migrations, i.e. migrations in a crystal during which the wave number of the electron completing a quantum migration from one zone to another is preserved. The figure illustrates this system and gives the three energetic zones of a silver bromide crystal: the valence zone of the electrons on the Br⁻ ions: the exciton zone: the zone of conductivity of the AgBr crystal. He states that the exciton formed as a result of absorption of the corresponding light quantum should

Card 1/4

SOV/77-4-2-11/18

The Role of Optically Prohibitive Migrations in the Mechanics of Light Absorption by Silver Bromide

have a wave number equal to that of the light quantum itself. However, at temperatures of around 300°K the wave number is not always preserved, due to the interaction of the electron completing the optical migration with the fairly large number of phonons present at such temperatures. Such migrations are known as optically prohibitive. Especially severe violation of the preservation of the wave number will occur in the presence of phonons near the threshold Debye frequency, as the balance of energy cannot be sufficiently destroyed in the acts of absorption and expulsion of the phonon, as its energy is small compared with that of the photon of the visible or ultra-violet region of the spectrum. In the presence of optically prohibitive migration quantum migrations of the electron are possible, caused by the absorption of the photon from the top of the valence zone to the bottom of the zone of conducti-

Card 2/4

SOV/77-4-2-11/18

The Role of Optically Prohibitive Migrations in the Mechanics of
Light Absorption by Silver Bromide

ty. The author suggests that this may explain the shift of the long-wave threshold of light absorption from the ultra-violet (270 $\mu\mu$) to the visible (\sim 500 $\mu\mu$) when the temperature is raised from 20°K to 300°K [Refs. 4,6]. At 20° optically prohibitive migrations are virtually nonexistent, but at 300°K they cause a sharp rise of light absorption straight from the long-wave threshold of 500-520 $\mu\mu$. They should also lead to a shift of the exciton absorption from the ultra-violet to the visible region when the crystal is heated up from 20°K to 300°K. However a drop in the temperature of the maximum exciton caused by temperature spread [Ref.5] makes it practically unnoticeable on the light absorption curve at 300°K, previously investigated by Hilsch and Pohl [Ref. 6]. The author finally remarks that the considerations set out in S.G. Ryzhanov's

Card 3/4

SOV/77-4-2-11/18

The Role of Optically Prohibitive Migrations in the Mechanics of
Light Absorption by Silver Bromide

work (1958, Vol 3, Nr 3 of this journal - see Ref. 6)
on the role of the exciton mechanics in light absorption
and light sensitivity become more convincing, when
taken in conjunction with the considerations which he,
(the author), has developed in this article. There is
1 figure and 7 references, 3 of which are Soviet, 2
English-language and 2 German.

ASSOCIATION: Kishinev, Gosudarstvennyy universitet (Kishinev, State
University)

SUBMITTED: December 23, 1958

Card 4/4

SOV/56-36-3-47/71

21(8)

AUTHOR:

Ryzhanov, S. G.

TITLE:

The α -Decay of Th^{227} According to a Collective Model and the Spin of Ra^{223} in Its Lowest State (α -raspad Th^{227} po kolektivnoy modeli i spin Ra^{223} v yego nizshem sostoyanii)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 928-930 (USSR)

ABSTRACT:

The present paper (Letter to the Editor) intends to determine the spin of the lowest Ra^{223} -level. For this purpose the author uses the formula by Ter-Martirosyan (Ref 3) for the probability of the α -decay of a mother nucleus with spin I_0 .

If I' is assumed to be the projection of spin I of the corresponding daughter nucleus level, the following is assumed for the spin of the lowest level (transitions between the levels 59 - 29 - 0 kev, electric quadrupole transitions):

a) $I = I' = I_0 - 2$, b) $I = I' = I_0 - 1$, c) $I = I' = I_0$.

These cases are discussed in the following. Thus, the following is obtained in case a) e.g. for the intensity ratio (29-0 kev):

Card 1/2

SOV/56-36-3-47/71

The α -Decay of Th²²⁷ According to a Collective Model and the Spin of
Ra²²³ in Its Lowest State

$J_{29}/J_0 = 2e^{-14.2 \cdot 0.029 / (I_0 + 1)}$, empirically 5%:19%, and for
Th²²⁷ this results either in $I_0 = 7/2$ or $I_0 = 9/2$, and for
the daughter nucleus Ra²²³ $I_0 = 3/2$ or $5/2$. Case b) leads to
 $I_0 = 3/2$. For the transitions 307 - 286, 286 - 0 (magnetic
dipole transition) 286 - 238 kev (electric dipole transition)
the ratios are also discussed in short. For J_{307}/J_{286} 1% : 17%
is obtained empirically, and for $I_0 = 7/2$ or $9/2$ the value
5/2 is obtained for the spin of the lowest level of the daughter
nucleus. There are 4 references, 3 of which are Soviet.

SUBMITTED: ; October 22, 1958

Card 2/2

RYZHANOV, S.G.

Exciton mechanism of the absorption of light by silver bromide
in the visual realm and close ultraviolet. Zhur. nauch. i prikl.
fot. i kin. 3 no.5:382-384 S-O '58. (MIRA 11:10)

1. Gosudarstvennyy universitet, Kishinev.
(Photographic emulsions)

RYZHANOV, S.G.

Mechanism of the formation of the latent image. Zhur. nauch.
i prikl. fot. i kin. 3 no.1:3-15 Ja-F '58. (MIRA 11:2)

1. Kishinev Gosudarstvennyy universitet.
(Photography--Developing and developers)

SOV-77-3-5-14/21

AUTHOR: Ryzhanov, S.G.

TITLE: The Exciton Mechanism of the Absorption of Light by Silver Bromide in the Visual and Near Ultra-Violet Bands (Ob eksitonnom mekhanizme pogloshcheniya sveta bromidom serebra v vizual'noy oblasti i blizkom ul'trafiolete)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1958, Vol 3, Nr 5, pp 382-384 (USSR)

ABSTRACT: The author brings additional arguments to support his hypothesis as to the exciton mechanism of light-absorption by silver bromide during latent image formation in the visual and near ultra-violet bands of the spectrum. A narrow but sharp absorption maximum may be observed in this section and, in support of his theory, the author tries to show that this is brought about by the formation of excitons by light quanta. The position, width and energy of this absorption maximum are discussed and show to be in keeping with exciton theory and formulae. There are 8 references, 6 of which are Soviet, 1 American and 1 German.

Card 1/2

SOV-77-3-5-14/21

The Exciton Mechanism of the Absorption of Light by Silver Bromide in the
Visual and Near Ultra-Violet Bands

ASSOCIATION: **Kishinevskiy gosudarstvennyy universitet (Kishinev State University)**

SUBMITTED: June 7, 1958

1. Light--Absorption 2. Silver bromide--Absorptive properties

Card 2/2

RYZHANOV, S.G.

The alpha decay of radioactinium on the collective model and the
spin of AcX . Atom.energ. 4 no.1:80-81 Ja '58. (MIRA 11:4)
(Alpha rays) (Actinide series)

L 31566-66

0

ACC NR: AT6010586

pressure are valid even for alloys in which the dependence of the interatomic distance r on pressure P substantially deviates from linearity. Orig. art. has: 3 figures and 12 formulas.

SUB CODE: 11 / SUBM DATE: 16Dec64 / ORIG REF: 002 / OTH REF: 003

Card

2/2 LC

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R001446520007-2

RYZHANOVSKAYA, S. A.

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R001446520007-2"

"Anaphylactic Shock in Dogs with Experimental Hypertension," RZhBiol,
No 6, 1954.

RYZHANSKIY, V.B.

Determining order specifications for rolled metal rods based on
length. Avt. prom. no. 5:3-4 My '58. (MIRA 11:7)

1. Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy
promyshlennosti.

(Rolling(Metalwork))

SOV/137-59-1-1613

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 214 (USSR)

AUTHOR: Ryzhanskiy, V. B.

TITLE: Establishment of Lineal Standard Dimensions in Ordering of Bar Stock (Opredeleniye usloviy zakaza metalloprokata po dline)

PERIODICAL: Avtomob. prom-st', 1958, Nr 5, pp 3-4

ABSTRACT: Owing to the fact that the length of bar stock stored in shops of automobile plants is not a whole multiple of the unit length in which the material is used, the amount of metal waste reaches considerable proportions. It is established that metal waste may be eliminated most effectively by means of replacing the standard bars (B) with B's of exact length (I), B's the length of which is a whole multiple of the unit length desired (II), and B's which are sufficiently long to be sectioned into a number of unit lengths with a certain short length left over (III). The NIITAvtoprom developed a technique for the evaluation of the economic expediency of employing such B's: according to this method, the computation is based on simple formulae for the length rather than the weight of the B's; the sectional profile of the B's is disregarded. This method is applicable to all branches

Card 1/2

SOV/137-59-1-1613

Establishment of Lineal Standard Dimensions in Ordering of Bar Stock

of industry wherever the consumption of metal satisfies transit norms. Formulae are given together with a table permitting the determination of the minimum length of metal wasted during cutting of standard B stock which would justify the employment of (I), (II), and (III). Examples of applying the formulae and the table are given. According to calculations, the saving of metal resulting from the employment of this method in two plants alone should amount to 1000 tons.

V. M.

RYZHANSKIY, V.B.

Determining economically efficient lay-out of sheet metal.
Avt.prom. no.1:3-5 Ja '59. (MIRA 12:1)

1. Nauchno-issledovatel'skiy institut transporta avtomobil'noy
promyshlennosti.

(Sheet-metal work)

AUTHOR: Ryzhanskiy, V.B.

113-58-5-2/22

TITLE: The Determination of Conditions for Ordering Rolled Metal
by Length (Opredeleniye usloviy zakaza metalloprokata po dline)

PERIODICAL: Avtomobil'naya Promyshlennost', 1958, Nr 5, pp 3-4 (USSR)

ABSTRACT: The total weight of the ends of rod-shaped metal, rejected by all automobile plants, amounts to 10,000 tons a year. The analysis of the work of these plants showed that the best way to avoid such wastage is the use of rods of various length instead of rods of normal length. The NIITavtoprom has elaborated a method of determining the economical expediency of use of uniform, multiple and normal rods, by which the calculation is made according to the length, and not the weight of these rods. The economy of metal is calculated according to the following formula:

$$Q=B \frac{\ell_1 - \ell_2}{\ell_a}$$

where B is the amount of metal in kg for the annual program;

Card 1/2 ℓ_1 - average waste from normal rod in meters

113-58-5-2/22

The Determination of Conditions for Ordering Rolled Metal by Length

l_2 - waste from uniform (plus the remnant) rod in meters;

l_a - average length of the rod;

for the uniform and multiple rods l_2 is equal 0.
There is one table.

ASSOCIATION: NIITAvtoprom

AVAILABLE: Library of Congress

Card 2/2 1. Metals--Purchasing--Economic analysis

LYASHENKO, V.I. [Liashenko, V.I.]; RYZHAVSKAYA, N.G. [Ryzhavs'ka, N.H.]

Study of surface recombination by the space photo e.m.f. method
[in Ukrainian with summary in English]. Ukr. fiz. zhur. 3 no.2:
216-222 Apr '58. (MIRA 11:6)

1. Institut fiziki AN URSR.
(Germanium--Electric properties) (Photoelectricity)

25(7)

PHASE I BOOK EXPLOITATION

SOV/1863

Moscow. Tsentral'nyy institut informatsii tsvetnoy metallurgii

O primeneni tverdykh splavov i mineralokeramiki; sbornik statey
(Use of Hard Alloys and Cermets; Collection of Articles) Moscow, 1957.
87 p. 2,000 copies printed.

Sponsoring Agencies: USSR. Gosudarstvennaya planovaya komissiya.
Glavnoye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy.

Ed.: Ye. V. Stroyeva; Tech. Ed.: N. S. Trusov.

PURPOSE: This collection of articles is intended to answer the number of questions received from various establishments and organizations by the Central Institute of Information on Nonferrous Metallurgy.

COVERAGE: This book describes carbides and ceramics mass produced in the USSR. It gives recommendations for effective use of individual types and sizes. Their properties under working conditions are also given. F. A. Kats, B. Z. Levin, and F. N. Fomenko were the scientific editors for the book. The

Card 1/2

S/123/59/000/09/05/036
A002/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 9, p. 20,
32925

AUTHOR: Ryzhavskiy, I. M.

TITLE: Grades of Hard-Alloys and Products Made From Them for the Mining
Industry

PERIODICAL: V sb.: O primeneni i tverdykh splavov i mineralokeramiki, Moscow,
1957, pp. 5-7

TEXT: In the mining and petroleum industries, "BK 15" (VK15), "BK 11"
(VK11), "BK 8" (VK8) and "BK 6" (VK6) tungsten-type, hard alloys (carbides)
are used. Operational properties and fields of application of these alloy
grades are given.

Translator's note: This is the full translation of the original Russian
abstract.

✓B

Card 1/1

SOV/137-59-3-5698

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 104 (USSR)

AUTHOR: Ryzhavskiy, I. M.

TITLE: 'Grades of Hard Alloys and Articles Made From Them for the Mining Industry (Marki tverdykh splavov i izdeliya iz nikh dlya gornoy promyshlennosti)

PERIODICAL: V sb.: O primenenii tverdykh splavov i mineralokeramiki. Moscow, 1957, pp 5-17

ABSTRACT: Catalog data are adduced relative to the physico-mechanical and operational properties, the types, and the shapes and dimensions of hard-alloy platelets applied in cutting and drilling machinery for purposes of mining. Recommendations are offered on the selection and use of the various grades of hard alloys of the VK type for impact- and rotary-type drilling through rocks.

I. B.

S/123/59/000/007/001/014
AC04/AC01

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 7, p. 58,
24769

AUTHOR: Ryzhavskiy, I.M.

TITLE: Sintered Carbide Grades and Articles Made of Them for the Drawing,
Grooving and Upsetting, of Metals

PERIODICAL: V sb.: O primeneni i tverdykh splavov i mineralokeramiki. Moscow,
1957, pp. 55 - 76

TEXT: Bibliographic entry

SOV/137-59-3-5699

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 104 (USSR)

AUTHOR: Ryzhavskiy, I. M.

TITLE: Grades of Hard Alloys and Articles Made From Them for Machining of Metals and Nonmetallic Articles (Marki tverdykh splavov i izdeliya iz nikh dlya obrabotki rezaniyem metallov i nemetalliches-kikh izdeliy)

PERIODICAL: V sb.: O primenenii tverdykh splavov i mineralokeramiki. Moscow, 1957, pp 18-42

ABSTRACT: Catalog data are adduced relative to the physico-mechanical and operational properties and the shapes and dimensions of platelets made of standard hard alloys of the VK and TK types that can be applied in cutting tools. The usefulness of the various grades in the machining of metallic and nonmetallic materials is shown.

I. B.

Card 1/1

RYZHAVSKIY, I.M.; SHEPELEVA, M.D.; KATS, F.A., nauchnyy red.; LEVIN, B.Z.,
nauchnyy red.; FOMENKO, F.N., nauchnyy red.; STROYEVA, Ye.V.,
red.; TRUSOV, N.S., tekhn.red.

[Use of hard alloys and cermets; a collection of articles]
O primeneni tverdykh splavov i mineralokeramiki; sbornik statei.
Moskva, 1957. 87 p. (MIRA 11:6)

1. Moscow. Tsentral'nyy institut informatsii tsvetnoy metallurgii.
(Alloys) (Cermets)

BLEY, S.S., inzh.; RYZHAVSKIY, K.B., inzh.

Making stressed reinforced trestle beams of fuel-feed
arrangements of the Staro-Beshevo State-Owned Regional Electric
Power Plant. Energ.stroi. no.4:26-27 '59. (MIRA 13:8)
(Staro-Beshevo--Electric power plants)
(Trestles)

BEREZIN, V.; RYZHAYA, M., mladshiy nauchnyy sotrudnik

Is it possible to spray on dewy flax? Grazhd. av. 21 no.6:22
Je '64. (MIRA 17:8)

1. Starshiy inzh. ot dela sel'skokhozyaystvennoy aviatsii Gosudarstvennogo nauchno-issledovatel'skogo instituta Grazhdanskogo vozdushnogo flota (for Berezin). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut l'na (for Ryzhaya).

KARTASHOV, V.N.; RYZHAYA, M.A., aspirant

Equipment for chemical weed control in crops. Zashch. rast. ot
vred. i bol. 7 no.3:39 Mr. '62. (MIRA 15:11)

1. Glavnyy agronom kolkhoza "Put' k kommunizmu", Kimrskogo rayona,
Kalininskoy oblasti (for Kartashov). 2. Vsesoyuznyy institut
L'na (for Ryzhaya). (Kimry District--Weed control)

1/5
741.01
.R91

Ekonomiya materialov v mekhanicheskikh i instrumental'nykh tsekhakh
(Economizing materials in machinery repair and tool-making shops) Moskva,
Mashgiz, 1953.

234 p. illus., diagra., tables.

L 45075-56

ACC NR: AP6025301 (A) SOURCE CODE: UR/0416/66/000/007/0071/0073

AUTHOR: Ryzhechkin, A., (Lieutenant Colonel); Prokof'yev, G., (Lieutenant Colonel); Korolev, A., (Major); Kotel'nikov, P., (Captain) 7

ORG: none 13

TITLE: Floating bridge made of river transportation facilities 14

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 7, 1966, 71-73

TOPIC TAGS: floating bridge, bridge

ABSTRACT: A floating bridge consisting of eight platform barges of 200-ton carrying capacity each placed alongside of each other was constructed across a river in the summer of 1965. The river was 97 m wide with 1.76 m of maximum depth and the speed of the current was 0.42 m/sec. The barges were paired, and the distance between the barges was 7 m. The removable section of the bridge, for the passage of boats, was 23 m wide, and it could be removed by means of a

L 45075-66
ACC NR: AP6025301

φ

tugboat, an operation which required only 10 min. The authors list the advantages of this type of floating bridge. Orig. art. has: 3 figures. [DW]

SUB CODE: 19/ SUBM DATE: none/

GTRSPPL Vol. 5-No. 1 Jan. 1952

Ryzhei, I.P., Change of hereditary bases of the heads of winter wheat, 177-8

Akademiya Nauk, S.S.S R., Doklady Vol. 78, No. 4

L 13329-63

EWT(1)/EWT(m)/BDS

AFFTC/AMD/ASD AR/K

ACCESSION NR: AP3003939

8/0205/63/003/004/0603/0611

AUTHOR: Korotkova, V. P.; Ry*zhkov, V. Ye.; Stashkov, A. M.

57
56

TITLE: Change in the concentration of 17-oxycorticosteroids and hematological indices in dogs after the application of certain chemical protective means and irradiation 9

SOURCE: Radiobiologiya, v. 3, no. 4, 1963, 603-611

TOPIC TAGS: radiation sickness, ACTH, 17-oxycorticosteroid, adrenocorticotrophic hormone, mercamine, adrenal cortex, antiradiation treatment

ABSTRACT: The pathogenesis and chemical prophylaxis of radiation damage in dogs have been investigated on the basis of functional changes in the adrenal cortex. Several days after an absolute lethal dose (700 r), the concentration of 17-oxycorticosteroids in the peripheral blood plasma first exhibited a decrease, then a buildup, and finally in the terminal period a leveling off above normal. The immediate reaction of the adrenal cortex to the introduction of ACTH was to remain normal throughout all stages of radiation sickness, indicating the retention of reserve powers. The decrease in the concentration of 17-oxycorticosteroids in animals whose suprarenal glands have been screened against irradiation was

Card 1/2

L 13329-63
ACCESSION NR: AP3003939

not as pronounced as in the case of unshielded animals. The reaction to ACTH in the case of the former remained within normal bounds. No substantial differences were observed in the concentration of 17-oxy corticosteroids in animals who had received mercamine (75 mg/kg) and "antifein" (15 mg/kg); the reaction to ACTH in these cases was more pronounced. The results indicate the participation of the hypophysis-adrenal cortex system in the pathogenesis and pharmacological prophylaxis of radiation damage. It is concluded that a change of eosinophils after the introduction of ACTH cannot be used in the evaluation of the functional condition of the adrenal cortex. Orig. art. has: 1 table and 4 figures.

ASSOCIATION: Institut eksperimental'noy meditsiny* AMN SSSR (Institute of Experimental Medicine, AMN SSSR)

SUBMITTED: 21Jul62

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: AM

NO REF SOV: 021

OTHER: 025

Card 2/2

RYZHENKO, A.P., inzh.

Bearing capacity of piles sunk into loam by vibratory sinkers.
Trudy TSNIIS no.47:53-56 '63. (MIRA 16:5)

SUKHOV, V.A.; RYZHENKO, B.F.

Calculation of the field of a traveling TEM wave propagating along
a periodic multiconductor line with round conductors. Radiotekh.
i elektron. 7 no.10:1769-1779 0'62. (MIRA 15:10)
(Electromagnetic waves) (Wave guides)

42120

S/109/62/007/010/007/012
D266/D308

9,1400
AUTHORS:

Sukhov, V.A., and Ryzhenko, B.F.

TITLE:

Calculation of the field of a travelling TEM wave propagating along a periodical multiconductor line of circular cross-section

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 10, 1962,
1769 - 1779

TEXT: The purpose of the paper is to calculate the field of the TEM wave by solving an analog electrostatic problem (V.A. Sukhov, Radiotekhnika i elektronika, 7, 10, 1962, 1780). It is assumed that the circular conductors are situated above a plane of infinite conductivity (in the second section of the paper hints are given for finding the solution in the absence of the plane) and there are N conductors in a period. The coordinate system is chosen in such a way that the y axis is perpendicular to, and the x and z axes lie in, the plane of infinite conductivity. The direction of the z axis is parallel with the conductors. Denoting the coordinates of the center of the kth conductor by ξ_k and η_k and the radius of same

Card 1/3 *S/109/62/007/012/008/012

Calculation of the field of a ...

S/109/62/007/010/007/012
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obtained from an integral equation, using the fact that the potential must be constant on the conductors. In a practical case $\rho(\theta_k)$ is expanded into a Fourier series and only the first few terms are taken into account. In the second part of the paper computer results are presented which facilitate the evaluation of a given slow wave structure. For this purpose the interaction impedance and attenuation for a given space harmonic are expressed with the aid of functions plotted in several diagrams. The dispersion characteristic and group velocity can also be calculated if the loading of the conductors is known. There are 7 figures. ✓

SUBMITTED: December 18, 1961

Card 3/3

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Possibility of the determination of the total coefficients of the activity of acids and bases. Geokhimiia no.5:556-561 My '65.
(MIRA 18:9)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR, Moskva.

KHCDAKOVSKIY, I.I.; ZHOGINA, V.V.; RYZHENKO, B.N.

Dissociation constants of hydrosulfuric acid at elevated temperatures. Geokhimiia no.7:827-833 Ji '65.

(MIRA 18:11)

I. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo AN SSSR, Moskva. Submitted February 20, 1965.

KHITAROV, N.I., ARUTYUNYAN, L.A.; RYZHENKO, B.N.

Effect of hydrosulfide on the migration of molybdenum in the form of a silicomolybdenum complex under conditions of increased temperatures. Geokhimiia no.3:269-272 Mr '65. (MIRA 18:7)

I. V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

RYZHENKO, B.N.

Determination of the dissociation constant of hydrofluoric acid
and conditions of calcite replacement by fluorite. *Geokhimiia*
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Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

KHITAROV, N.I.; RYZHENKO, B.N.; LEBEDEV, Ye.B.

Determination of the electric conductivity of the solutions of sodium carbonate and bicarbonate under hydrothermal conditions. Geokhimiia no.1:41-47 Ja '63. (MIRA 16:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Sodium carbonate—Electric properties)

RYZHENKO, B.N.

Determination of the dissociation constants of carbonic acid and calculation of the extent of CO_3^{4-} and HCO_3^- ion hydrolysis in the solutions of carbonates and bicarbonates at elevated temperatures. *Geokhimiia* no.2:137-148 F '63.

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I. Vernadsky Institute of Geochemistry and Analytical Chemistry
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Dissociation constant values of carbonic acid at elevated temperatures. Dokl. AN SSSR 149 no. 3:639-641 M. '63. (MIRA 16:4)

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(Carbonic acid) (Ionization)

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Physicochemical data on the system $\text{Me}_2\text{CO}_3\text{-MeHCO}_3\text{-CO}_2\text{-H}_2\text{O}$ and
some applications to the hydrothermal process. *Geokhimiia* no.5:
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1. Institut geokhimi i analiticheskoy khimii imeni V.I.
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(Carbonates) (Systems (Chemistry))

PASHINKIN, A.S.; TISHCHENKO, G.N.; KORNEYEVA, I.V.; RYZHENKO, B.N.

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5 no.2:261-267 Mr-Ap '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy univeristet im. M.V.Lomonosova.
(Zinc chalcogenide) (Cadmium chalcogenide)

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[Work experience of innovators in a wire rod mill] Opyt
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Physiological and hygienic benefit of morning walks for children.
Vrach. delo no.6:121-123 Je '61. (MIRA 15:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut kommunal'noy
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KRAVETS, V.I., kand.tekhn.nauk; RYZHENKO, I.A., gornyy inzh.;
SELEDTSOV, V.F., gornyy inzh.

Ways of improving the ventilation in Novovolynsk mines. Ugol'
Ukr. no.6:40 Je '61. (MIRA 14:7)
(Lvov-Volyn' Basin—Mine ventilation)

SHCHERBAN', A.N. [Shcherban', O.N.], akademik; RYZHENKO, I.A. [Ryzhenko, I.O];
SKOROBOGAT'KO, A.A. [Skorobohat'ko, A.A.]

Determining the site of average air velocity measurement in mines with
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1. Institut teploenergetiki AN USSR i Kiyevskiy gosudarstvennyy
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(Mine ventilation)

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RYZHENKO, I.O. [Ryzhenko, I.O.]; SKOROBAGAT'KO, A.A. [Skorobahat'ko, A.A.]

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RYZHENKO, I.A., kand. tekhn. nauk, retsenzent

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1. Kiyevskiy politekhnicheskii institut.
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~~akademik~~

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1. Kiyevskiy politekhnicheskoy institut. Predstavleno akademi-
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Ugol' Ukr. 3 no.11:22-23 N '59. (MIRA 13:3)

1. Kiyevskiy politekhnicheskiy institut.
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