"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, P.I., inzh.

Reducing air escapes in Kuznetsk Basin mines. Bezop. truda v prom. 1 no.12:11-12 D '57. (MIRA 12:3)
(Kusnetsk Basin--Mine ventilation)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

LINDENAU, N.I., inzh.; MOSKALENKO, I.I., inzh.; LOPATKIN, G.P., inzh.; BUSYGIN, K.K., kand.tekhn.nauk

About the M.A. Krainkov's article "Calculating air in accordance with gas content and controlling the ventilation of workings." (MIRA 14:8)
Bezop. truda v prom. 5 no.8:12-14 Ag '61.

1. Kombinat Kuzbassugol' (for Lindenau, Moskalenko, Lopatkin).
2. Nachal'nik otdela ventilyatsii i gaza Makeyevskogo nauchno-issledovatel'-skogo instituta, g. Makeyevka, Stalinskoy oblasti (for Busygin).

(Mine ventilation)
(Krainikov, M.A.)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, P. I., Cand of Medi Sci -- (diss) "Blood dupply of the broad hip facia in man." Kiev, 1957, 15 pp (Kiev State Medical Institute im A. A. Bogomlets), 100 copies (KL, 33-57, 99)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

Calculation of a model of the F center. S. A. Moskalenko. *Uchenye Zapiski Kishinev. Unit.* 17, 171 [illegible]; *Referat Zhur. Khim.* 1955, Abstr. No. 35155. A model of F center was studied in which the electron potential inside the halide hole corresponds to the potential of the harmonic oscillator and the electron potential outside to a Coulomb potential. The periodic potential of the lattice outside the hole is [illegible] of effective mass and the electric polarization of the [illegible] outside the hole is [illegible] macroscopically. [illegible] of the location of the [illegible] of the F region, its half width and the energy of the thermal [illegible] of F center [illegible] and 2.08 [illegible]

Mikulin

Distr: [illegible]

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.A.

B-5

USSR/Crystals.

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18313

Author : S.A. Moskalenko.
Inst : Kishinev Agricultural Institute.
Title : To Computation of Lande's Electron g-Factor at F-Center.

Orig Pub : Tr. Kishinevsk. s.-kh. in-ta, 1956, 9, 115-120

Abstract : Lande's g-factor for the basic position of an electron in the F-center of a NaCl crystal was computed taking into consideration the crystal symmetry and the fine structure of shells in the F-center. It followed from the obtained equation that the g-factor coincided with the g-factor of the s-electron. It showed that the discrepancies disclosed at experiments of paramagnetic resonance (Hutchison C.A., Noble G.A., Phys. Rev., 1952, 87, No 6) between the values of g-factors for the electron in the F-center and the s-electron could not be explained either by the lattice symmetry, or by the addition

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S. A.

On the theory of local electron states in crystals. Ukr.fiz. zhur. 2 no.2:suppl:59-60. '57. (MLRA 10:7)

1. Institut fiziki AN URSR.
(Excitons) (Crystallography, Mathematical)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

SOV/51-5-2-8/26

AUTHOR: Moskalenko, S.A.

TITLE: On the Theory of the Mott Exciton in Alkali-Halide Crystals (K teorii eksitona motta v shchelochno-galoidnykh kristallakh)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 2, pp 147-155 (USSR)

ABSTRACT: The paper is entirely theoretical. The author discusses an alkali-halide crystal consisting of N alkali-metal atoms and N halogen atoms. In alkali atoms the s-shell is being filled, while halogen atoms have five electrons in the p-shell. The many-electron theory of the Mott exciton is discussed for such a crystal. Expressions are obtained for the energy of excitation of the crystal and for the Mott exciton band. The expression which describes the exciton band consists of three terms. The first term is due to the conduction band, the second term is due to the hole band of the crystal. These two terms are not, however, identical with the expressions for the energy of general conduction and hole bands because of the presence in both terms of functions φ_n which describe the bound state of an electron and a hole. The

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On the Theory of the Mott Exciton in Alkali-Halide Crystals SOV/51-5-2-8/26

third term is due to the interaction between electrons and holes. The properties of the exciton band depend thus on the properties of the conduction and hole bands, on the interaction of the latter two bands and on the functions φ_n. The author discusses also the effective mass and the energy spectrum of the Mott exciton. The author thanks K.B. Toloygo for directing this work and S.I. Pekar, I.M. Dykman and E.I. Rashba for advice. There are 2 figures and 11 references, 7 of which are Soviet, 2 American, 1 Swiss and 1 translation of a Western work into Russian.

ASSOCIATION: Institut fiziki, AN UkrSSR (Institute of Physics, Academy of Sciences of the Ukrainian S.S.R.)

SUBMITTED: July 12, 1957

Card 2/2 1. Alkali halide crystals--Excitation 2. Alkali halide crystals--Theory 3. Mathematics--Applications

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

Moskalenko, S. A.

24(4) PHASE I BOOK EXPLOITATION SOV/3140

Akademiya nauk Ukrainskoy SSR. Institut fiziki

Fotoelektricheskiye i opticheskiye yavleniya v poluprovodnikakh; trudy pervogo vsesoyuznogo soveshchaniya po fotoelektricheskim i opticheskim yavleniyam v poluprovodnikakh, g. Kiyev, 20-26 noyabrya 1957 g (Photoelectric and Optical Phenomena in Semiconductors; Transactions of the First Conference on Photoelectric and Optical Phenomena in Semiconductors...) Kiyev, 1959. 403 p. 4,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Prezidium. Komissiya po poluprovodnikam.

Ed. of Publishing House: I. V. Kisina; Tech. Ed.: A. A. Matveychuk; Resp. Ed.: V. Ye. Lashkarev, Academician, Ukrainian SSR, Academy of Sciences.

PURPOSE: This book is intended for scientists in the field of semiconductor physics, solid state spectroscopy, and semiconductor devices. The collection will be useful to advanced students in universities and institutes of higher technical training specializing in the physics and technical application of semiconductors.

COVERAGE: The collection contains reports and information bulletins (the latter are indicated by asterisks) read at the First All-Union Conference on Optical and Photoelectric Phenomena in Semiconductors. A wide scope of problems in semiconductor physics and technology are considered: photoconductivity, photoelectromotive forces, optical properties, photoelectric cells and photoresistors, the actions of hard and corpuscular radiations, the properties of thin films and complex semiconductor systems, etc. The materials were prepared for publication by E. I. Rashboy, O. V. Snitko, K. B. Tolpygo, A. F. Lubchenko, and M. K. Sheynkman. References and discussion follow each article.

Photoelectric and Optical Phenomena (Cont.) SOV/3140

Kiseleva, N. K., and B. T. Kolomiyets. The Role of Impurities in Internal Photoelectric Effect in CdTe and ZnTe 99

Shneyder, A. D. Investigation of the Photo conductivity of CdTe 107

2. The Theory of Excitons

Pekar, S. I. Theory of Electromagnetic Waves in Crystals in Which Excitons Occur 111

Dykman, I. M., and I. G. Zaslavskaya. Excitons in Ionic Crystals With Random Bond Energy 114

Moskalenko, S. A. Mott's Theory of Excitons in Ionic Crystals 121

Gribnikov, Z. S., and E. I. Rashba. The Diffusion of Excitons in a Nonhomogeneous Field 123

3. Germanium

The Kinetics of Some Electron Processes in Semiconductors 132

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

SOV/126-8-2-3/26

AUTHORS: Giterman, M. Sh. and Moskalenko, S. A.

TITLE: On the Structure of Energy Bands in Ionic Crystals

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 2, pp 170-175 (USSR)

ABSTRACT: The interaction between electrons in crystals was taken into account in the Shubin-Vonsovskiy polar model (Ref 1). On the basis of this model Vonsovskiy and his collaborators (Ref 2) have considered a large number of static and kinetic effects in metals and semiconductors and have obtained good agreement with experimental data. The method of second quantization turned out to be a convenient mathematical apparatus and was developed by Bogolyubov (Ref 3) for application to crystals. However, in Ref 3 only the simpler case of s-electrons was considered and excited states were not taken into account. Seidov and Galishev (Ref 4) have taken into account one non-degenerate p-state which gave an overlap of energy bands in the spectrum of elementary excitations even in the zero-order approximation. The fact that degeneracy with respect to the magnetic quantum number was neglected in all the above papers means that it was not possible to

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SOV/126-8-2-3/26

On the Structure of Energy Bands in Ionic Crystals

obtain, for example, the anisotropy of the effective masses of current carriers and certain other effects. The present authors have generalised the polar model to the case of ionic crystals (NaCl, KCl) in Ref 5. The present paper is also concerned with the problem and gives special attention to the degeneracy of the electron states at the Cl points, and the possibility of the motion of current carriers of each sign over both cations and anions. The first of these effects has an important influence on the energy spectrum of the "holes", and in particular, on the anisotropy of their effective masses. The second effect leads to a change in the form and position of the energy bands, i.e. it has an influence on the properties of the current carriers. The work reported in Refs 6 and 7 may be considered as the zero-order approximation of the solution now given. For simplicity, lattice vibrations are not taken into account. An ideal cubic lattice is considered with two types of points g and h occupied by positive and negative ions respectively, the ions being considered as fixed. In the ground state, the electron

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SOV/126-8-2-3/26

On the Structure of Energy Bands in Ionic Crystals

density distribution exhibits maximum non-uniformity. Near the g-points (Na, K) there are no valence s-electrons, while at the h-points (Cl) there are six electrons in the p-state having $m = 0, \pm 1$ and $\sigma = \pm 1/2$. The excitation of the system is connected with a reduction in the non-uniformity in the charge distribution and the appearance of elementary excitations of different signs. These excitations are called electrons and holes, by analogy with the one-electron theory and, correspondingly, the authors refer to electron and three-hole energy bands. The energy operator for the problem is of the form given by Eq 1 (N.N. Bogolyubov - Ref 3). The results obtained are substantially in agreement with those reported by Howland in Ref 9, except that in the present paper the interaction between the valence bands and the conduction band is taken into account. It is shown that the spin orbit interaction is not an essential factor leading to the anisotropy in the effective masses of the current carriers. An approximate diagonalization of the Hamiltonian for the many electron problems is carried

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SOV/126-8-2-3/26

On the Structure of Energy Bands in Ionic Crystals

out and a group theory method is used in studying the structure of the bands in some directions in K-space.
There are 1 figure and 9 references, of which 8 are Soviet and 1 English.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kiy (Ural State University imeni A.M. Gor'kiy)

SUBMITTED: July 8, 1958

Card 4/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

24(2)

AUTHORS: Moskalenko, S. A., Tolpygo, K. B. SOV/56-36-1-21/62

TITLE: On the Energy Spectrum of the Exciton of Mott in Ion Crystals (Ob energeticheskom spektre eksitona Motta v ionnykh kristallakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 149-163 (USSR)

ABSTRACT: The present paper concerns a qualitative investigation of the levels of the Mott exciton in ion crystals carried out from the point of view of the many-electron theory. Such a Mott exciton is produced in highly polarized crystals by the transition of an electron from the external closed p-shell of the anion into an unoccupied state of the s-shell of the cation. The surplus electron resulting in this way and the corresponding hole form a system which is similar to a hydrogen atom. As basic functions it is advisable to use linear combinations of the wave functions of the electrons contained in the crystal. In the second part of this paper the many-electron problem is reduced to the equation of motion of two quasi-particles, and the third part deals with the group-theoretical classification of exciton states for K = 0. In contradiction to Overhauser the authors from the very outset proceed from an arbitrary

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

On the Energy Spectrum of the Exciton of Mott in Ion Crystals SOV/56-36-1-21/62

motion of the electron and hole. The eigenfunctions of the exciton are linear combinations of the corresponding lines of irreducible representations. From the point of view of the general deliberation discussed here, the scheme of the levels for NaCl- and CsCl-crystals must be equal because of the equal symmetry of lattices. The differences of the exciton spectra of these lattices can manifest themselves only by the arrangement and intensity of individual lines. The following paragraph deals with exciton levels in macroscopic approximation, and it discusses a very simple variant of the effective method. The last chapter deals with the theory of excitons in a Cu_2O type crystal. A figure shows the scheme of the levels of the para-exciton (S = 0) and ortho-exciton (S = 1). Transitions to these levels are possible only by spin-orbit interaction. The deliberations discussed here do not supply information concerning the correct distance between the levels. In conclusion, some particular features concerning the behavior of excitons in a magnetic field are discussed. There are 4 figures and 22 references, 5 of which are Soviet.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

On the Energy Spectrum of the Exciton of Mott in Ion Crystals SOV/56-36-1-21/62

ASSOCIATION: Institut fiziki Akademii nauk Ukrainskoy SSSR (Institute of Physics of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: June 9, 1958

Card 3/3

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S. A. Cand Phys-Math Sci u-(diss) "Energy Spectrum of Excitons in Non-deformable Ionic Crystals," Kiev, 1960, 13 pp, 200 copies (Kiev State U. im T. G. Shevchenko) (KL, 47/60, 97)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

84812

S/181/60/002/008/047/052/XX
B006/B070

24.7700 (1043,1143,1559)

AUTHOR: Moskalenko, S. A.

TITLE: Exciton Absorption of Light in a Cu_2O Crystal I. The Absence of Constant External Fields

PERIODICAL: Fizika tverdogo tela, 1960, Vol 2, No 8 pp 1755-1765

TEXT: The present paper gives a group-theoretical classification of the electron, hole, and exciton bands of the Cu_2O crystal at different points of the $\vec{k}$-space. In the introduction, some related publications are briefly described. §1 gives a study of the structure of the cuprous oxide crystal - which belongs to the symmetry group $O_h^4(12)$ - and the crystal terms of the copper ion. §2 gives the study of the structure of the electron and hole bands at different points of the $\vec{k}$-space; in this connection only electrons of 3d and 2p shells are considered. A scheme of the electron and hole bands of Cu_2O is given in Fig. 2. The characters of some irreducible representations are given in Tables 1 and 2. The exciton spectrum of Cu_2O at k=0 is studied in §3, and the products of the irreducible

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

84812

Exciton Absorption of Light in a Cu_2O Crystal. I. The Absence of Constant External Fields

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B006/B070

representations of the bands are calculated for four cases (Table 3). A comparison of theory and experiment is given in §4. It has been shown that for the same parity of electron and hole bands, the exciton series exhibit intensive bands, beginning with n=2. Fig. 3 shows a scheme of the exciton levels of four joint electron and hole bands (from n=2 to n=9). The splitting of the "new lines" is related to the different effective masses of the excitons. The appearance of the new lines is attributed either to quadrupole transitions in para-exciton states, or dipole transitions in orthostates for l=1 and in parastates for l=3. Some further characteristics of the green and yellow series are discussed. The results of the present paper were communicated to the III Vsesoyuznoye soveshchaniye po teorii poluprovodnikam (Third All-Union Conference on the Theory of Semiconductors) in L'vov on April 3, 1959. The author thanks K. B. Tolpygo for guiding the work, I. S. Gorban', I. Pastrnyak, Ye. F. Gross, A. A. Kaplyanskiy, S. I. Pekar, B. Ye. Tsekvava, and A. G. Zhilich are mentioned. There are 3 figures, 3 tables, and 24 references: 15 Soviet, 1 British, and 8 US.

Card 2/3

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

84812

Exciton Absorption of Light in a Cu_2O Crystal. I. The Absence of Constant External Fields

S/181/60/002/008/047/052/XX
B006/B070

ASSOCIATION: Institut fiziki AN USSR Kiyev (Institute of Physics AS UkrSSR, Kiyev)

SUBMITTED: April 20, 1959 (initially) and March 28 1960(after revision)

Card 3/3

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

S/051/60/009/003/004/011
E201/E691

AUTHOR: Moskalenko, S.A.

TITLE: Exciton Absorption of Light in a Cu_2O Crystal. II. The Case of Absence of Constant External Fields

PERIODICAL: Optika i spektroskopiya, 1960, Vol. 9, No. 3, pp. 369-375

TEXT: The results reported in the paper were presented at the Third All-Union Conference on Semiconductor Theory held in April 1959 in L'vov. Part I (Ref. 1) is extended by a discussion of the hole bands of p-type, of the exciton spectrum related to excitation of oxygen ions and of the fundamental frequencies of the Cu_2O lattice vibrations. The following theoretical points were checked by comparison with experiment: (1) origin of two hydrogen-like absorption-line series reported by Gross et al. (Ref. 2); (2) nature of the background of these two series; (3) origin of the line λ_0 at 6125 Å. The theory failed to explain the following observed features:

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

S/051/60/009/003/004/011
E201/E691

Exciton Absorption of Light in a Cu_2O Crystal. II. The Case of Absence of Constant External Fields

(A) the doublet splitting of the yellow-series bands by magnetic fields, and (B) sharp rise of background observed in some regions of the exciton absorption. Acknowledgment is made to E. B. Tolpygo who supervised this work. There are 3 tables, 2 figures and 22 references: 14 Soviet, 4 English, 3 German and 1 Japanese.

SUBMITTED: August 20, 1958

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

ACCESSION NR: AT4016301 S/0000/62/000/000/0077/0080

AUTHOR: Moskalenko, S.A.

TITLE: Some questions on the theory of interacting excitons

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy*. Fiz. shchelochnogaloidn. kristallov (Physics of alkali halide crystals). Riga, 1962, 77-80

TOPIC TAGS: Bose-gas, Bogolyubov theory, exciton gas, non-ideal exciton gas, Landau-Khalatnikov theory, superfluidity, exciton, phonon, semiconductor, Bose-Einstein condensation, crystallography

ABSTRACT: The author discusses the thermohydrodynamic properties of a non-ideal exciton gas in a semiconductor using Bogolyubov's microtheory of a non-ideal Bose-gas and the Landau-Khalatnikov phenomenological theory of superfluidity. Assuming that (a) the exciton energy depends on its quasipulse $\vec{p}$ by the law $\Delta + \frac{p^2}{2m}$, where m is the isotropic mass and Δ is the excitation energy; (b) the thermodynamic equilibrium has time to establish itself during the exciton life span τ; (c) hydrodynamic processes in the gas are reversible and take less time than τ for completion; (d) phonons promote the equilibrium of and determine the life span τ; and (e) the direct interaction of the excitons and the indirect

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ACCESSION NR: AT4016301

interaction of the phonons result in the predominance of repulsion, the author presents the energy and pulse of a non-ideal exciton gas in the state of Bose-Einstein condensation on the level $\vec{p}_s$ as:

$$E = E_0(\xi) + N\frac{p_s^2}{2m} + N\Delta + \sum_{p \pm 0} [E(\vec{P}, \xi) + \vec{P}\vec{V}_s] n_p$$

$$\vec{P} = N\vec{P}_s + \sum_{\vec{P}} n_p \vec{P} \qquad (1)$$

The author concludes that: (1) from the comparison of the exciton gas in a semiconductor with liquid helium He II, a number of optical and hydrodynamic effects in crystals may be predicted; (2) at subcritical temperatures primary and secondary sounds whose velocities differ greatly may exist in an exciton gas; (3) light scattering over density fluctuations results in a cleavage of the initial frequency; (4) exciton superfluidity sets on at small velocities $u \leqslant u^*$; and (5) mechanocaloric or thermomechanical effects cause the superfluid component to transfer the exciton mass over microcapillary ducts. Orig. art. has: 3 figures and 9 formulas.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

ACCESSION NR: AT4016301

ASSOCIATION: Institut fiziki i matematiki Moldavskogo filiala AN SSSR (Institute of Physics and Mathematics, Moldavian Branch AN SSSR)

SUBMITTED: 00 DATE ACQ: 06Mar64 ENCL: 00

SUB CODE: EC, GP NO REF SOV: 007 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

SHMIGLYUK, M.I.; MOSKALENKO, S.A.

Polarization effect of a yellow exciton series in copper oxide crystals. Fiz. tver. tela 6 no.9:2729-2736 S '64.

(MIRA 17:11)

1. Institut prikladnoy fiziki AN Moldavskoy SSR, Kishinev.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

33367

S/181/62/004/00[illegible]/044/05[illegible]
B111/B104

24,3500 (1137,1138,1144)

AUTHOR: Moskalenko, S. A.

TITLE: Reversible optic-hydrodynamic phenomena in an imperfect exciton gas

PERIODICAL: Fizika tverdogo tela, v. 4, no. [illegible], 1962, 276-284

TEXT: The collective properties of interacting excitons in a semiconductor have been studied using results of the microscopic theory of an imperfect Bose gas and of the phenomenological theory of superfluidity. The hydrodynamic properties of an exciton gas were compared with those of liquid helium. The paper starts with an introduction and a detailed review of various articles, in which the following Soviet bloc authors are mentioned: P. L. Kapitsa (Nature 141, 74, 1938; DAN SSSR 18, 2, 1938); L. D. Landau (J. Phys. USSR, 5, 71, 1940; ZhETF, 11, 592, 1941; ZhETF 14, 112, 1944; J. Phys. USSR, 11, 91, 1947), N. N. Bogolyubov (Izv. AN SSSR, ser. fiz., 9, 23, 1947; Vestn. MGU, 7, 43, 1947; Lektsii po kvantovoy statistike Gl. III, Rad. shkola Kiyev, 1949; ZhETF, 18, 7, 622, 1947), A. I. Ansel'm

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

33367

Reversible optic-hydrodynamic

S/181/62/004/00[illegible]/044/05[illegible]
B111/B104

Yu. A. Firsov (ZhETF, 28, 2, [illegible], 1955; 30, 4, 719, 1956). Z. S. Kachlishvili (FTT, 3, 2, 492, 1961). L. Urivnak (Chekhoslov. fizich. zhurn. 1, 390, 1957). V. L. Broude, A. F. Prikhot'ko, E. I. Rashba (UFN 67, 1, 99, 1959). V. Ye. Lashkarev, Yu. I. Karkhanin (DAN SSSR 101, no. 5, 829, 1955). S. I. Pekar (ZhETF, 33, 4, 1022, 1957; Dokl. na soveshch. po teorii, poluprovodnikov, L'vov, 1960) and K. B. Tolpygo (Avtoreferat, IFAN USSR, Kiyev, 1950). The present paper is based on these and other publications, and the results are valid under the following simplifying requirements: (1) During the exciton lifetime τ there must prevail a quasi-equilibrium distribution and reversible hydrodynamic processes must be possible; (2) repulsion must predominate between the excitons; (3) the exciton band must be quadratic with $m > 0$; (4) delay and [illegible] are neglected. Proceeding from the Hamiltonian H for N interacting excitons, the partition function for the Bose statistics

$Z_s = Sp(e^{-\beta\hat{H}+\beta\hat{P}v})$ is calculated in second quantization, whereof from the thermodynamic functions and the flux of matter are computed. The velocity of sound above and below the critical temperature is investigated [illegible]

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[illegible]367

Reversible optic-hydrodynamics

S/[illegible]/62/[illegible]4/[illegible]
B[illegible]/B[illegible]4

and, in accordance with T. D. Lee and C. N. Yang, an additional [illegible] was discovered in the latter case. The paper is concluded by a [illegible] of the possible occurrence of a Bose Einstein condensation and by a comparison between the superfluid motion of excitons in a crystal with impurities and dislocations and the motion of He II through pressed powder or porous glass. V. L. Bonch Bruyevich, I. S. Gorban', L. E. Gurevich, D. N. Zubarev, K. B. Tolpygo, S. V. Tyablikov and Yu. A. Tserkovnikov are thanked for interest and advice. There are [illegible] 1 table, and 33 references: 24 Soviet-bloc and 9 non Soviet-bloc. The four most recent references to English language publications read as follows: T. D. Lee, C. N. Yang: a) Phys. Rev. [illegible], no. [illegible]; b) 113, no. 6, 1406, 1959; c) C. N. Yang, Physica [illegible]; [illegible] Glasgold, A. N. Kaufman, K. M. Watson, Phys. Rev. [illegible]; Y. Takeuti, Progr. Theoret. Phys. [illegible], [illegible], 1957; J. [illegible] Rev., 112, no. 5, 1965, 1959.

ASSOCIATION: Institut fiziki i mathematiki AN MSSR Kishinev (Institute of Physics and Mathematics AS Moldavskaya SSR, Kishinev)

Card 3/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

Reversible optic-hydrodynamic

SUBMITTED: [illegible]

Card 4/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

24.7000

S/181/62/004/008/002/041
B125/B104

AUTHORS: Moskalenko, S. A., and Bobrysheva, A. I.

TITLE: Selection rules and energy spectrum of electrons. Consideration of external fields and directional deformations

PERIODICAL: Fizika tverdogo tela, v. 4, no. 8, 1962, 1994-2004

TEXT: From the exciton function, a linear combination of many-electron functions, the following selection rules are obtained for the exciton absorption without the participation of phonons in binary crystals having the point space symmetry group G, when the extrema of the bands lie at the point $\vec{k} = 0$: When light polarized along the ξ-axis is incident along the ζ-axis, the allowed transition will lead to such levels to which at the point $\vec{k}$ correspond certain irreducible representations. These are contained in representations formed over the following bases: $S_e = \{\nabla_\xi, \eta\nabla_\xi\}$ in the dipole case, $S^{(+)}_{\vec{k}e} = \{[r_\xi\nabla_\zeta + r_\zeta\nabla_\xi], \eta[r_\xi\nabla_\zeta + r_\zeta\nabla_\xi]\}$ in the quadrupole case, and $S^{(-)}_{\vec{k}e} = \{[r_\xi\nabla_\zeta - r_\zeta\nabla_\xi], \eta[r_\xi\nabla_\zeta - r_\zeta\nabla_\xi]\}$ in the

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magneto-dipole case. In all these cases $g \in G$. $\Gamma_{\vec{k}\,exc} = \Gamma_{\vec{k}\xi}$ is the selection rule with respect to the group of the wave vector: Under the action of light with the polarization e_ξ the allowed transitions lead from the ground state to exciton states with a representation over the base $\{\nabla_\xi, g\nabla_\xi\}$ of the group of the wave vector $\vec{Q}_{\vec{k}}$ equivalent to $\Gamma_{\vec{k}\xi}$. These selection rules indicate that the transition probability depends on the wave vector. In the presence of external constant fields and directional deformations, the levels of a cubic crystal are split up as a result of the change in the crystal symmetry. The splitting of the exciton levels and the selection rules for the split components are the principal factors characterizing the change in the exciton spectrum at given external conditions. The selection rules describe the exciton absorption in free crystals with the symmetries D_{4h}, D_4, C_{4h}, D_{3d}, D_3, S_6; D_{2h}, D_2, C_{2h} even if the crystal is not subject to any external forces. There are 11 tables.

ASSOCIATION: Institut fiziki i matematiki AN MSSR, Kishinev (Institute of Physics and Mathematics AS MSSR, Kishinev)

SUBMITTED: January 4, 1962

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.A.; BOBRYSHEVA, A.I.

Rules of selection and energy spectrum of excitons. Part 2: Effect of external fields and directional strains on cubic crystals. Izv. AN Mold SSR no.5:60-70 '62. (MIRA 18:3)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 13026-63 EWT(1)/BDS AFFTC/ASD/ESD-3 IJP(C)/GG

ACCESSION NR: AP3000628 S/0181/63/005/005/1444/1453 64 58

AUTHOR: Moskalenko, S. A.; Khadzhi, P. I.; Bobry*sheva, A. I.; Lelyakov, A. V.

TITLE: Optical-hydrodynamical phenomena in the exciton-photon system

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1444-1453 21

TOPIC TAGS: exciton, phonon, Bose-Einstein condensation, Hamiltonian, exciton dispersion, phase transition, mean free path

ABSTRACT: The authors have studied the interaction of phonons with weakly bound excitons and have analyzed the various laws of exciton dispersion. They have also investigated that particular case when, in the system of excitons and phonons (acoustical or optical), thermodynamic equilibrium between excitons is established before equilibrium between excitons and phonons. Here the interaction of phonons with condensing excitons does not lead to normal scattering but changes the nature of the whole energy spectrum of the system. The necessary conditions for this are such that the mean free path during interexciton collisions must be considerably smaller than during exciton scattering at acoustical and optical phonons or at impurities. The interexciton relaxation time must naturally be less than the

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L 13026-63

ACCESSION NR: AP3000628

life of the excitons. Computations according to different laws of exciton dispersion lead to qualitatively new results, but this matter is not resolved. "In conclusion, we express our deep thanks to V. L. Bonch-Bruyevich, S. I. Pekar, E. I. Rashba, K. B. Tolpy*go, and S. V. Tyablikov for discussing the paper and making comments." Orig. art. has: 1 figure and 35 formulas.

ASSOCIATION: Institut fiziki i matematiki AN MSSR, Kishinev (Institute of Physics and Mathematics, Academy of Sciences, MSSR)

SUBMITTED: 06Sep62 DATE ACQ: 11Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 010 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.A.

Phase transitions of the second kind during Bose - Einstein condensation of excitons in a deformed lattice. Znur. eksp. i teor. fiz. 45 no.4:1159-1163 O '63. (MIRA 16:11)

1. Institut fiziki i matematiki AN Moldavskoy SSR.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.A.; SHMIGLYUK, M.I.

Energy spectrum of excitons in CdS type crystals. Fiz. tver. tela 6 no.12:3535-3537 D '64 (MIRA 18:2)

1. Institut prikladnoy fiziki AN Moldavskoy SSR, Kishinev.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 10772-65 EWT(m)/EWP(b) IJP(c)/AFMD(t)/AFETR/ESD(t)/ASD(a)-5/SSD/AS(mp)-2/
ACCESSION NR: AP4044946 ESD(c) JD S/0181/64/006/009/2729/2736

AUTHORS: Shmiglyuk, M. I.; Moskalenko, S. A.

TITLE: On the polarization effect in the yellow exciton series of cuprous oxide crystals

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2729-2736

TOPIC TAGS: cuprous oxide, line splitting, exciton polarization, wave function, crystal structure, band spectrum

ABSTRACT: Gross, Kaplyanskiy et al. (FTT, v. 2, 2968, 1960; v. 4, 1660, 1962) found that strong directional deformation polarized the principal bands ($n \geq 2$) of the yellow exciton series of cuprous oxide, without splitting them. Similar deformation was found to polarize and split the $\lambda = 6125$ Å line, which is associated with the $n = 1$ state in the yellow series, and the first lines of the blue and violet series. The present paper shows that the unusual be-

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L 10772-65

ACCESSION NR: AP4044946

3

havior of the principal bands of the yellow series is associated with the degeneracy of the relative motion of excitons, with the complex structure of the unit cell, and with the mixing and changes in the wave functions of the crystal terms. The amplitudes of the optical transition of the split components of the Γ_4^--type np-levels are determined. Estimates show that the splitting of the levels is of the same order as the breadth of the absorption lines under pressure." The authors thank Profs. A. G. Samoylovich and K. B. Tolpygo for their interest." Orig. art. has: 2 figures, and 17 formulas.

ASSOCIATION: Institut prikladnoy fiziki AN MSSR, Kishinev (Institute of Applied Physics, AN MSSR)

SUBMITTED: 06Dec63

SUB CODE: SS, OP

NR REF SOV: 010

ENCL: 00

OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 17122-65 EWA(h)/EWG(k)/EWT(1)/EWT(m)/EWP(b)/T/EWP(t) Pz-6/Peb ASD(a)-5/
SSD/AFWL/AFETR/RAEM(j)/ESD(gs)/ESD(t)/IJP(c) AT/JD
ACCESSION NR: AP5000648 S/0181/64/006/012/3535/3537

AUTHOR: Moskalenko, S. A.; Shmiglyuk, M. I.

TITLE: Energy spectrum of excitons in crystals of the CdS type

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3535-3537

TOPIC TAGS: exciton, energy spectrum, polarization, crystal symmetry, band structure, energy level

ABSTRACT: It is pointed out that earlier discussions of the structure and symmetry of the energy band in crystals of the wurtzite type did not take sufficient account of the fact that the unit cell of such crystals contains two molecules. The authors therefore calculate the actual bands at the point k = 0 and take into account the complex structure of the unit cell. The possible exciton levels are determined for the relative-motion quantum numbers n = 1, 2, 3; these are determined on the basis of a group-theoretical calculation made by one of the authors in an earlier paper (Moskalenko, FTT v. 2, 1755, 1960).

Card 1/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 17122-65

ACCESSION NR: AP5000648

The activities and polarizations of the exciton levels are calculated in the dipole and quadrupole approximations, the exciton spectrum is discussed briefly in the presence of an external magnetic field, and the vibrational spectrum of crystals of the CdS type for k = 0 is presented. The results show that the previously proposed interpretations of the complex absorption and luminescence spectra in crystals of CdS type must be revised. "The authors thank V. V. Sobolev, whose discussion gave rise to the idea of the present communication." Orig. art. has: 2 figures, 2 formulas, and 1 table.

ASSOCIATION: Institut prikladnoy fiziki AN MolSSR, Kishinev (Institute of Applied Physics, AN MolSSR).

SUBMITTED: 09May64

SUB CODE: SS, NP NR REF SOV: 002 ENCL: 00

OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

ACC NR: AP6030970 IJP(c)

SOURCE CODE: UR/0181/66/008/009/2730/2734

AUTHOR: Bobrysheva, A. I.; Moskalenko, S. A.

ORG: Institute of Applied Physics, AN MSSR, Kishenev (Institut prikladnoy fiziki AN MSSR)

63

TITLE: The angular dependence of probabilities of three-photon absorption

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2730-2734

TOPIC TAGS: nonlinear optics, three photon absorption, ABSORPTION COEFFICIENT, PHOTON, CONDUCTION BAND, VALENCE BAND, BRILLOUIN ZONE

ABSTRACT: The dependence of the absorption coefficient on the direction of polarization vectors of three photons taking part in a transition was considered under the assumption that the valence band maximum and the conduction band minimum occur in the Brillouin zone at a point $\bar{k} = 0$ where the transition takes place. General formulas were obtained for the angular dependence of the coefficient of three-photon absorption for an arbitrary orientation of polarization vectors and for the special case of three identically polarized photons at equal frequencies. Although the derived expressions are more unwieldy than those obtained for the case of two-photon absorption, they can be used for band-to-band and exciton transitions and in the local centers. Orig. art. has: 6 formulas.

[YK]

SUB CODE: 20/ SUBM DATE: 30Mar66/ ORIG REF: 003/ OTH REF: 007/ ATD PRESS: 5078

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

ACC NR: AP6036318

SOURCE CODE: GE/0030/66/018/011/0379/0390

AUTHOR: Koskalenko, S. A.; Khadshi, P. I.

ORG: Institute of Applied Physics, Academy of Sciences of the Moldavian SSR, Kishinev

TITLE: Infrared absorption by excitons due to photoionization and intraband lattice scattering

SOURCE: Physica status solidi, v. 18, no. 11, 1966, 379-390

TOPIC TAGS: IR absorption, absorption coefficient, exciton absorption, quantum mechanics, photoionization, carrier scattering, semiconductor laser

ABSTRACT: A quantum mechanical theory is presented for infrared absorption by excitons due to photoionization and intraband lattice scattering. An investigation was made of the coefficient of infrared absorption by excitons in order to evaluate accurately the role of excitons in laser operation in semiconductors. Infrared absorption by excitons may take place as the result of the following processes: 1) Transitions from one discrete level of the internal motion of the exciton to other discrete levels, 2) transitions between discrete levels of two different series of the exciton, 3) photoionization, 4) photoionization with simultaneous band-to-band transition of the electron or hole, and 5) intraband scattering of the excition by acoustical and optical phonons. Only the third and fifth cases were considered. Taken into account were the interaction between excitons

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ACC NR: AP6036318

and acoustical and optical phonons and the Maxwell and Bose-Einstein exciton distribution functions. The first- and second-order perturbation-theory approximations, which are valid for the range of frequencies c q, were employed. This range is much greater than τ_{rel}^{-1}, where τ_{rel} is the relaxation time of excitons ($c\ q\ \tau_{rel} \ll 1$). The Hamiltonian was derived for the interaction of excitons with the infrared radiation field responsible for the processes of exciton scattering. The absorption coefficient $\gamma(q)$ due to photoionization of excitons was calculated for materials in which the existence of direct excitons with a wave vector $\vec{k}$ lying at the center of the Brillouin band has been established. For Cu_2O, Ge, InP, and GaSb, $\gamma(q)$ was plotted as a function of ncq/I_{1S} for the following exciton concentrations: 10^{12} cm^{-3} in Ge, 10^{13} cm^{-3} in Cu_2O, and 10^{14} cm^{-3} in InP and GaSb crystals. The effect of the exciton photoionization is observable at the threshold frequency at comparatively low exciton concentrations. Orig. art. has: 30 formulas, 3 figures, and 1 table. [WA-14]

SUB CODE: 20/ SUBM DATE: 22Mar66/ ORIG REF: 012/ OTH REF: 016/

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

ACC NR: AP7004997

SOURCE CODE: UR/0048/66/030/009/1539/1541

AUTHOR: Bobryshova, A. I.; Moskalenko, S. A.

ORG: none

TITLE: On two-photon stimulated luminescence in intrinsic semiconductors and dielectrics. Transitions from an exciton state. /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.9, 1966, 1539-1541

TOPIC TAGS: luminescence, semiconductor crystal, dielectric crystal, nonlinear effect, laser, exciton, mathematic physics

ABSTRACT: For a cubic crystal under pressure and for the 32 point groups, the authors have calculated the angular dependences of the emission and absorption coefficients associated with exciton transitions due to the A^2 interaction term and the angular dependences of transitions due to the A·p interaction term, and have discussed the features of the two-photon emission that arise from the fact that excitons are bosons. In the present paper they present and briefly discuss some of their results. If the temperature is so low that the excitons are degenerate (form an Einstein-Bose condensate), there can be emitted only two oppositely directed photons of the same energy. This circumstance is favorable for the realization of a two-photon laser based on degenerate excitons. The emission of photons of one frequency can be stimulated by

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ACC NR: AP7004997

an intense beam of photons of another frequency. As an example, the authors present the angular dependences of the emission coefficient for O_h symmetry. When the cubic crystal is subjected to uniaxial compression there appear in the expressions for the angular dependences coefficients that must be determined experimentally. The authors are presently engaged in calculating the corresponding transition probabilities due to the A^2 and $A \cdot p$ interaction terms. These data are required for design of the two-photon laser proposed by A.M.Prokhorov and A.S.Selivanenko (Avt. avid.No.872303 ot 24 XII 1963 g.) and by P.P.Sorokin and N.Braslau (IBM J. research and develop., 8,177 (1964)). Orig. art. has: 8 formulas.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 004 OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 33259-66

ACC NR: AR6017243

SOURCE CODE: UR/0058/65/000/012/D039/D039

AUTHORS: Moskalenko, S. A.; Shmiglyuk, M. I.

38

B

TITLE: Group-theoretical investigation of exciton absorption bands in Cu_2O crystals

SOURCE: Ref. zh. Fizika, Abs. 12D324

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 454-458

TOPIC TAGS: cuprous oxide, exciton absorption, absorption band, group theory, Hamiltonian, exciton, Coulomb interaction

ABSTRACT: Starting from the many-electron formulation of the problem, the authors obtain in matrix form the Hamiltonian of the exciton with account of the complex structure of the crystal, for electron and hole bands of different symmetry, at different functions of electron-hole relative motion and with allowance for the Coulomb-interaction terms. A study is made of the energy levels of the exciton, their splitting, and polarization as functions of the external conditions. [Translation of abstract]

SUB CODE: 20

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.F., inzh.

Building mine surfaces using large blocks. Shakht. stroi. no.4: 26-27 '58. (MIRA 11:6)

1.Trest Leninugol', Karaganda.
(Building blocks)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.I.; GABOVICH, M.S.; BACHINSKIY, Yu.V.; TOMILIN, A.V.; MEDVEDEV, P.M.; LOMANOVA, M.M.; GOLOVKOV, P.D.; GAYDUKOV, G.I.; ALEYNIKOV, V.V.; STEMIN, N.D.; MIRONOVA, V.V.; BELAVINTSEVA, Ye.S.; TSVETSINSKIY, S.V.; MICHEPURNIY, P.; KOBZAR', M.K.; ROZHNOVA, Ye.S.; PELETMINSKIY, V.N.; GORDEYCHUK, V.K.; SHMERIGO, V.F.; KISLYUK, N.

Fifty years in the sugar industry. Sakh.prom. 33 no.2:18 F '59. (MIRA 12:3)

(Shtepan, Georgii Viacheslavovich, 1888-)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

NOTKIN, Ye.M.; KUR, G.Ye.; A ONSHTEYN, N.M.; prinimali uchastiye: KAMNEV, V.S.; SHASHIN, N.N.; TYURIN, V.I.; VENBRIN, V.D.; MAREYEV, D.I.; VILENSKAYA, I.A.; BORODIN, B.V.; DON-YAKHIO, I.A.; MOSKALENKO, S.M.; ABRAMOVA, Z.A.; KLIMOV, M.D.; VASIL'YEV, I.A. LUK'YANOV, S.K.

Introducing automatic control in coremaking. Lit. proizv. no.6: 15-19 Je '62. (MIRA 15:6)

1. Nauchno-issledovatel'skiy institut santekhniki Akademii stroitel'stva i arkhitektury SSSR (for Luk'yanov).
(Coremaking) (Automatic control)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, S.Ye.

Experience in manufacturing eighteen meter long BKSD- 18-2 beams with prestressed components. Energ. stroi. no.37: 56-58 '63. (MIRA 17:6)

1. Zamestitel' nachal'nika proizvodstvenno-tekhnicheskogo otdeleniya Stroitel'nogo upravleniya Pridneprovskoy gosudarstvennoy rayonnoy elektrostantsii.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEVA, S.V.

Age of ultrabasic rocks of the Southern Urals. Dokl. AN SSSR 150 no.6:1323-1326 Je '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Predstavleno akademikom D.V.Nalivkinym.
(Ural Mountains--Rocks, Igneous)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, T.A.

Paleontologic finds in the coal-bearing formation along the shores of the Chirakhchay River. Trudy Geol.inst.Dag.fil. AN SSSR 1: 236-240 '57. (MIRA 14:9)
(Chirakhchay Valley--Coal geology) (Paleontology)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, T.A.

Foraminifera and some new data on the stratigraphy of the Middle Jurassic of Daghestan as revealed by the Tamur cross section (Rychal-vats and Tamur-chay Valleys). Trudy Geol.inst.Dag.fil. AN SSSR 2:154-161 '60. (MIRA 15:12)

(Daghestan—Foraminifera, Fossil)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOROZOVA, V.G.; MOSKALENKO, T.A.

Plankton foraminifera from boundary deposits of the Bajocian and Bathonian stages of central Daghestan (northeastern Caucasus). Vop. mikropaleont. no.5:3-30 '60. (MIRA 14:8)

1. Geologicheskiy institut AN SSSR i Institut geologii Dagestarskogo filiala AN SSSR.
(Daghestan--Foraminifera, Fossil)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

BROVKOV, G.N.; MOSKALENKO, T.A.

Leptochlorite horizon in middle Jurassic deposits of contral Daghestan. Dokl.AN SSSR 136 no.1:163-166 Ja '61. (MIRA 14:5)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSSR i Institut geologii Dagestanskogo filiala AN SSSR. Predstavleno akademikom N.M.Strakhovym.

(Chokh region—Geology, Stratigraphic)
(Leptochlorite)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

BROVKOV, G.N.; MOSKALENKO, T.A.

First find of conglomerates containing pebbles of Pre-Jurassic igneous and metamorphic rocks in the Bajocian of southeastern Daghestan. Trudy Geol.inst.Dag.fil. AN SSSR 2:165-168 '62.

(Daghestan—Conglomerate) (MIRA 15:12)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

TYABLIKOV, S.V.; MOSKALENKO, V.A.

Theorem on statistical averages for Pauli operators. Dokl. AN SSSR 158 no.4:839-842 O '64. (MIRA 17:11)

1. Matematicheskiy institut im. V.A. Steklova AN SSSR i Institut matematiki AN Moldavskoy SSR. Predstavleno akademikom N.N. Bogolyubovym.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 26475-65 EWT(1)/EEC(f)/EWA(d) IJP(c) GG

ACCESSION NR: AR5004861 S/0058/64/000/011/E086/E086

22
10
B

SOURCE: Ref. zh. Fizika, Abs. 11E693

AUTHORS: Moskalenko, V. A.; Palistrant, M. Ye.; Kon, L. Z.

TITLE: A criterion for superconductivity

CITED SOURCE: Izv. AN MoldSSR. Ser. yestestv. i tekhn. n., no. 7, 1963, 63-78

TOPIC TAGS: superconductivity, pair excitation, electron pair, Frohlich model, superconductivity criterion

TRANSLATION: The conditions for stability in a Frohlich model, with account of Coulomb interaction, was investigated with the aid of the criterion for the instability of the normal state relative to formation of electron pairs, introduced by Bogolyubov and consisting in the fact that the energy of such paired excitations becomes imaginary. A numerical analysis is presented for the superconductivity criterion obtained in this manner. R. Suris.

SUB CODE: SS, MM ENCL: 00

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 25069-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-10 IJP(c)

ACCESSION NR: AR4045745 S/0275/64/000/007/A051/A051

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 7A298 36 B

AUTHOR: Moskalev, V. A.; Skvortsov, Yu. Zh.; Okulov, B. V.; Shestakov, V. G.

TITLE: Measurement and recording of fall current in a 25-Mev stereobetatron 19

CITED SOURCE: Sb. Elektron. uskoriteli. M., Vyssh. shkola, 1964, 204-209

TOPIC TAGS: betatron, stereobetatron

TRANSLATION: Results of a study of acceleration process and beam characteristics are reported. Possibility is considered of determining the charge of accelerated electrons by a direct measurement of the charge of the electrons that struck the target. For measuring the accelerated-electron charges, a combination circuit is used which records simultaneously the target current and the signal induced in a special indicating electrode; the circuit can operate at any particle energy. Stereobetatron potentialities as a pulse flow detector were assessed by using it for examination of a lead bar having artificial defects. The circuits are supplied, and the experimental results are discussed.

SUB CODE: NP ENCL: 00

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 15248-65 EWT(1)/EEC(b)-2/T IJP(c)/ASD(a)-5/BSD/AFWL/AS(mp)-2/APGC(b)/ESD(gs)/ESD(t)

ACCESSION NR: AP4048744 S/0051/64/017/005/0728/0733

AUTHORS: Palistrant, M. Ye.; Moskalenko, V. A.

TITLE: Contribution to the theory of optical bands of F-centers

SOURCE: Optika i spektroskopiya, v. 17, no. 5, 1964, 728-733

TOPIC TAGS: F center, optical band, spectral curve, phonon, crystal lattice vibration, emission spectrum, absorption spectrum

ABSTRACT: The first moments of the spectral curves are calculated with allowance for the change in the phonon equilibrium positions and the phonon frequencies during an electronic transition from a 1s ground state to a 2p excited state. Simplified electronic functions are used together with a simple model for the lattice vibrations, and the temperature shift of the maximum of the spectral light absorption and emission bands are calculated, together with their half-widths and the deviations from mirror symmetry of the light

Card 1/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 15248-65

ACCESSION NR: AP4048744

emission and absorption spectra. "One of the authors (O. V. Moskalenko) expresses deep gratitude to S. V. Tyablikov for a discussion of the results of the work." Orig. art. has: 29 formulas and 2 tables.

ASSOCIATION: None

SUBMITTED: 28Nov63

ENCL: 00

SUB CODE: OP, SS

NR REF SOV: 010

OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 16447-65 EWT(1)/EEC(f)/EWA(d)/EEC(b)-2 IJP(c)/ESD(t)/AEDC(a)/SSD/AFWL/ASD(a)-5/AS(mp)-2/AFETR GG

ACCESSION NR: AP4042038 S/0126/64/017/006/0827/0833

AUTHOR: Polistrant, M. Ye.; Moskalenko, V. A.

TITLE: Variational principle in thermodynamics of superconducting systems

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 6, 1964, 827-833

TOPIC TAGS: superconductivity, variational principle, thermodynamics, Green's function, functional Froehlich model

ABSTRACT: The authors consider the superconducting state of metal in the Froehlich's model with Coulomb interaction between the electrons. The thermodynamic potential of the system is represented by a functional of a complete electronic and ionic Green's function. It is shown that this functional is a stationary one with respect to the independent variations of electronic and phononic Green's functions, and to the mass- and polarization operations. An expression for the second variation of this functional is obtained. Orig. art. has: 24 equations.

Card 1/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

L 16447-65
ACCESSION NR: AP4042038

ASSOCIATION: Institut fiziki i matematiki AN MSSR (Institute of Physics and Mathematics, AN MSSR)

SUBMITTED: 13Jul63 ENCL: 00

SUB CODE: NP, TD NO REF SOV: 008 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, V. A.

Distr: 4E4c

1/1

Effective mass of the polarizing exciton. A. G. Chebun and V. A. Moskalenko. *Uchenye Zapiski Kishinev. Univ.* 17, 117-18(1955); *Referat. Zhur. Khim.* 1956, Abstr. No. 35158.—Theoretically it was calcd. that the effective masses of excitons in s and 2p levels are (in g.) NaCl 8.8×10^{-32}, 3.1×10^{-35}; KCl 7.4×10^{-32}, 2.36×10^{-35}; KBr 0.98×10^{-32}, 1.21×10^{-35} resp. The decrease of mass when an exciton moves to the excited state is related to the decreased interaction with the phonon field.

V. S. Mihailov

4

1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, V.A.

USSR/Crystals.

B-5

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18332

Author : V.A. Moskalenko.
Inst : ~~Kishinev University~~.
Title : Temperature Displacement of Exiton Absorption in Ionic Crystals

Orig Pub : Uch. zap. Kishinevsk. un-ta, 1956, 24, 55-62

Abstract : The short wave displacement of the absorption line spectrum of an exiton at a temperature drop is studied theoretically. It is surmised that the interaction of the exiton with the inertial polarization of the lattice created by the exiton, i.e. the perturbation of the system, is the cause of the displacement. An approximation of the effective mass method and the macroscopic method of computation of crystal polarization are used for the computation. Numerical computations are carried out for Cu_2O and alkali-haloid crystals. The results for Cu_2O

Card 1/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALENKO, V.A.

Theory of interaction between an exciton and phonon field. Zhur.eksp. i teor.fiz. 30 no.5:959-961 My '56. (MIRA 9:9)

1.Kishinevskiy gosudarstvennyy universitet.
(Field theory) (Particles, Elementary)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

56-2-13/51

AUTHOR: Moskalenko, V. A.

TITLE: On the Theory of the Thermal Excitation of Polarons (K teorii teplovogo vozbuzhdeniya polyarona)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol 34, Nr 2, pp 346-354 (USSR)

ABSTRACT: The present work computes the probability of a quantum transition of a polaron between the states 1s and 2p caused by the thermal transitions of a lattice. For this the basic ideas and the method of the theory of radiation-less transitions in an F-center are used (see M. Lax, reference 4). Here thermal transition is understood to be the transition (1s → 2p) caused by the thermal oscillations of the lattice. In the first chapter the Hamiltonian of the polaron problem is put down and discussed. The electron function is determined in first approximation. In the next chapter the probability of the radiation-less transition is calculated, the course of calculation being followed step by step. Then the parameters of the theory are calculated and the transition probability is estimated for the ground state of

Card 1/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

On the Theory of the Thermal Excitation of Polarons 56-2-13/51

the polaron, the state 2p of the polaron, and for the self consisting state 2p. Furtheron expressions for the effective mass of the polaron in the excited state, for the mean effective mass of the polaron and for the ratio of the effective masses of the polaron in two states are put down. The data found speak in favor of the probability of the thermal excitation of a polaron 1s → 2p having remarkable values at room temperatures and at higher temperatures. The transition into the excited state takes place within a time of about 10^{-8} and 10^{-9} sec. There are 2 tables and 13 references, 7 of which are Slavic.

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

SUBMITTED: February 25, 1957 (initially), and November 29, 1957 (after revision)

AVAILABLE: Library of Congress

1. Polarons-Thermal excitation-Theory 2. Polarons-Mathematical analysis

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, B. S.

Glistnyye bolezni ovets (Helminthis Diseases of Sheep). Voronezh. 1950. 36 pages with illustrations.

U-5235

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, B. S., ORLOV, I. V. Assistant Professor; VASKhNIL

Methods for the sanitization of swine by freeing them of helminth infestation (helminthiasis), Veterinariya, Vol. 37, No. 11, p. 31, 1960.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

ORLOV, I.V., prof.; MOSKALEV, B.S., dotsent

Sanitary measures against helminthiasis in swine. Veterinariia 37 no.11:31-35 N '60. (MIRA 16:2)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozayastvennykh nauk im. V.I. Lenina (for Orlov).
(Worms, Intestinal and parasitic) (Parasites—Swine)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, B.S.

Ecological and morphophysiological plasticity of the species Ascaris lumbricoides L., 1758. Med.paraz.i paraz.bol. 30 no.2: 143-148 Mr-Ap '61. (MIRA 14:4)

1. Iz kafedry parazitologii i zoologii Voronezhskogo gosudarstvennogo zootekhnicheskogo veterinarnogo instituta.
(ASCARIDS AND ASCARIASIS)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, D.A.

Filtering embankments with control pipes. Put' i put. khoz. no.6:40 Je '59. (MIRA 12:10)

1.Starshiy inzhener mostoispytatel'noy stantsii, g. Petrozavodsk.
(Embankments) (Drainage)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, D.A.

Winter treatment of the road bed. Put' i put.khoz. 4 no.1: 27-28 Ja '60. (MIRA 13:5)

1. Starshiy inzhener mostoispytatel'noy stantsii, g.Petrozavodsk.
(Railroads--Maintenance and repair)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, D.A., inzh. (Petrozavodsk)

Specialized station crews. Put' i put.khoz. 4 no. 5:21-22 My '60. (MIRA 13:11)
(Railroads--Maintenance and repair)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, D.A.

Lining track ditches with reinforced concrete. Put' i put.khoz. 4 no.9:35 S '60. (MIRA 13:9)

1. Strashiy inzhener mostostantsii g.Petrozavodak.
(Ditches)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, D.A.

We could have much better maintenance of the roadbed. Put' i put. khoz. 4 no.11:27 N '60. (MIRA 13:12)

1. Starshiy inzhener mostoispytatel'noy stantsii, g. Petrozavodsk.
(Railroads--Maintenance and repair)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, F.

A woman worker at the "Arsenal" factory. Voen. znan. 41 no.3:14-15 Mr '65. (MIRA 18:5)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

Kazakhstan - Physical geography

Study of Kazakhstan [illegible]

Monthly List of Russian Accessions, Library of Congress, October [illegible]

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

1. I. A. OSKALEV

2. USSR (600)

4. Bee Culture - Equipment and Supplies

7. More about the location of the bee-entrance in the hive. Pchelovodstvo 29 no. 12. 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

BURMISTROV, N.A.; KOROBEYNIKOVA, A.D.; KHATSKEVICH, V.S.; SOSIN, M.A.; OSOKINA, K.I.; BOZHKO, V.S.; MOSKALEV, I.A.; GOGIN, N.M.; DANILKINA, V.I.; BEZRUCHENKO, I.Ya.

Experience in competing for the right to be called an enterprise of communist labor. Vest. sviazi 21 no.11:22-25 N '61. (MIRA 14:11)

1. Nachal'nik Pervomayskoy kontory svyazi g. Moskvy (for Burmistrov). 2. Nachal'nik otdeleniya svyazi Kupino, Shebekinskogo rayona, Belgorodskoy obl. (for Korobeynikova). 3. Nachal'nik Noginskoy rayonnoy kontory svyazi Moskovskoy obl. (for Khatskevich). 4. Nachal'nik Teykovskoy kontory svyazi Ivanovskoy obl. (for Sosin). 5. Nachal'nik 16-go otdeleniya svyazi Dzerzhinska, Gor'kovskoy obl. (for Osokina). 6. Nachal'nik Sovetskoy kontory svyazi Kaliningradskoy oblasti (for Bozhko). 7. Nachal'nik Sovetskoy kontory svyazi Kurskoy obl. (for Moskalev). 8. Nachal'nik Kanavinskoy kontory svyazi g. Gor'kogo (for Gogin). 9. Nachal'nik Shchelkanovskogo otdeleniya svyazi Yukhnovskogo rayona, Kaluzhskoy obl. (for Danilkina). 10. Nachal'nik Bobrovskoy rayonnoy kontory svyazi Voronezhskoy oblasti (for Bezruchenko).

(Telecommunication—Employees)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, I.I., inzhener.

Grease applied to forms for reinforced concrete. Stroi.pred.neft. prom.1 no.9:19-20 N '56. (MIRA 10:1)
(Reinforced concrete construction)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, I.I.; TYULENEV, Ye.A., starshiy nauchnyy sotrudnik

Boring holes at the base of inclined shell-type columnar foundations. Transp. stroi. 11 no.7:15-17 Jl '61. (MIRA 14:7)

1. Nachal'nik mostootryada No. 1 Mostotresta (for Moskalev).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut transportnogo stroitel'stva (for Tyulenev).
(Oka River--Bridges--Foundations and piers)
(Piling (Civil engineering))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, I.N.

Unit for the granulation and mechanized removal of slag. Lit. proizv. no.9:44-45 S '64. (MIRA 18:10)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

GLUSHKOV, V.M., otv. red.; KUKHTENKO, A.I., zam. otv. red.; BLAGOVESHCHANSKIY, Yu.V. red.; DOROD[illegible], A.A., red.; YERSHOV, A.P., red.; LYAPUNOV, A.A., red.; MOSKALEV, I.S., red.; PUKHOV, G.Ye., red.; [illegible], T.I., red.; SAMOKHVALOV, K.G., red.; STOGNIY, A.A., red.; TIMOFEYEV, B.B., red.; SHCHERBAN', A.N., red.; LETICHEVSKIY, A.A., red.; KAPITONOVA, Yu.V., red.; MEL'NIK, T.S., red.

[Problems of theoretical cybernetics; Voprosy teoreticheskoi kibernetiki. Kiev, Naukova dumka, 1965. [illegible] p. (MIRA 18:9)

1. Akademiya nauk UKSR, Kiev.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

[illegible] V, [illegible] A.

Book of problems in [illegible]lectrical engineering

Moskva, Trudrezervizdat, 1951. 113 p. (54-[illegible])

TK168.[illegible]

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

KOSKALEV, Leonid Aleksandrovich; VASIL'YEVA, I.A., kand.tekhn.nauk, nauchnyy red.; KONTSEVAYA, E.M., red.; PERSON, M.N., tekhn.red.

[Electrical engineering workbook] Zadachnik po elektrotekhnike. Izd.3., ispr.i dop. Moskva, Vses.uchebno-pedagog.izd-vo Trudrezervizdat, 1959. 180 p. (MIRA 12:10)
(Electric engineering)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, L.A

Exposition of new material in electric engineering classes. Prof.-tekh. obr. 17 no.7:13-16 Jl '60. (MIRA 13:8)

1. Prepodavatel' zheleznodorozhnogo uchilishcha No.1 'g.Orekhovo-Zhuyev).
(Electric engineering--Study and teaching)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, L.I.

Systematical position of Patella lamanonii Schrenck (Gastropoda, Prosobranchia). Trudy Inst. okean. 23:303-305 '57. (MIRA 11:3)

1. Kafedra zoologii bezpozvonochnykh Moskovskogo gosudarstvennogo universiteta.

(Japan, Sea of--Prosobranchiata)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, L.I.

Pogonophora in the Barents Sea. Dokl. AN SSSR 137 no.3:730-731 Mr '61. (MIRA 14:2)

1. Murmanskiy morskoy biologicheskiy institut Kol'skogo filiala im. S.M.Kirova AN SSSR.
(Barents Sea---Pogonophora)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

[illegible], [illegible].

Life form of the "sea [illegible]" gastropod [illegible] of the northwestern part of the Pacific Ocean. [illegible] no. [illegible]-1078 [illegible].

1. [illegible] AN [illegible].

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

MOSKALEV, [illegible]

Distribution [illegible] part of the Pacific Ocean. [illegible] AN SSSR [illegible] (MIRA [illegible])

1. Institut okeanologii AN SSSR. Predstavlen [illegible] Yu.A. [illegible].

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320020-4

[illegible], L.L.

Attachment for cutting spherical glass. Rats. [illegible] elektrotransp. no.[illegible]-33 [illegible]

1. Kirovskoye depo Tramvayno-trolleybusnogo upravleniya [illegible].

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MOSKALEV M. A.

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AUTHORS: Popov, O. V. (Candidate of Technical Sciences), Moskalev, M. A. (Engineer)

TITLE: Cooling During Hardening Sheet Metal Parts From Aluminum Alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1900, Nr 1, pp 45-47 (USSR)

ABSTRACT: Three types of cooling were investigated: (1) cooling during transfer through the air; (2) cooling by quenching in water; (3) cooling in the zinc die. The nature of cooling during transfer through the air primarily depends on the time and manner of carrying work pieces, as well as on the size of work pieces and the thermophysical properties of the hardened metal. The nature of cooling during transfer through air was studied theoretically and experimentally. As a result of an approximation by replacing the theoretical cooling curves with straight-line curves, an equation for determination at any time the temperature of

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samples from Duralumin D16 and bronze B95 (composition not given) was derived:

$$t = t_o - 7.05 \frac{\tau}{s}$$

where t_o is starting temperature of the sample (500° C for D16; 470° C for B95); τ is time of transfer through air, in seconds; s is thickness of material, in mm. As seen from Fig. 2, the theoretical and experimental curves of cooling almost coincide. The high-speed transfer of sheet components through the air in a vertical position is more effective than that in horizontal position, since heat losses in the former are lower. By quenching parts made of sheet metal (B95 and D16), it is suggested that the permissible time of transfer through the air be determined for parts of various thicknesses, according to the temperature of the beginning of quenching. The speed of cooling in water and in the zinc die was also determined by both the theoretical and experimental methods. However, the theoretical

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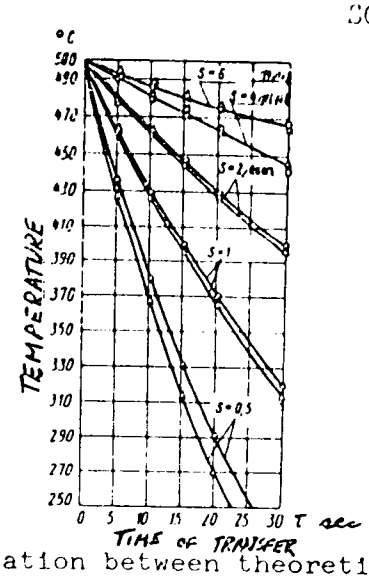

Fig. 2. Correlation between theoretical and experimental curves of cooling by transfer through the air of 360 x 60 mm work pieces (speed of transfer in a vertical position, 2m/sec). Round dots indicate experimental curves; triangular, calculated curves.

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calculations are very complicated. Therefore, an experimental method with oscillograph recording was preferred. The obtained results show that the speed of cooling in water in all cases is higher than that in the zinc die, although it is possible to obtain cooling rates approaching those of water cooling. There are 4 figures; and 1 table.

ASSOCIATION: Moscow Aviation Technological Institute (MATI)

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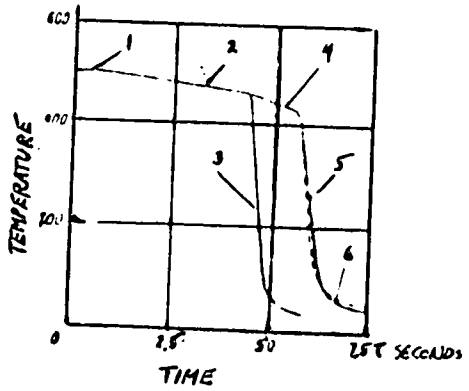

Fig. 4. Typical cooling oscillograms of work pieces from alloy D16, 2 mm thick, in different hardening media. (1) Temperature of work pieces in heat-treating furnace; (2) cooling during transportation through air; (3) cooling in water; (4) cooling in a half-open die; (5) cooling in a closed die; (6) theoretical curve of cooling in the die.

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