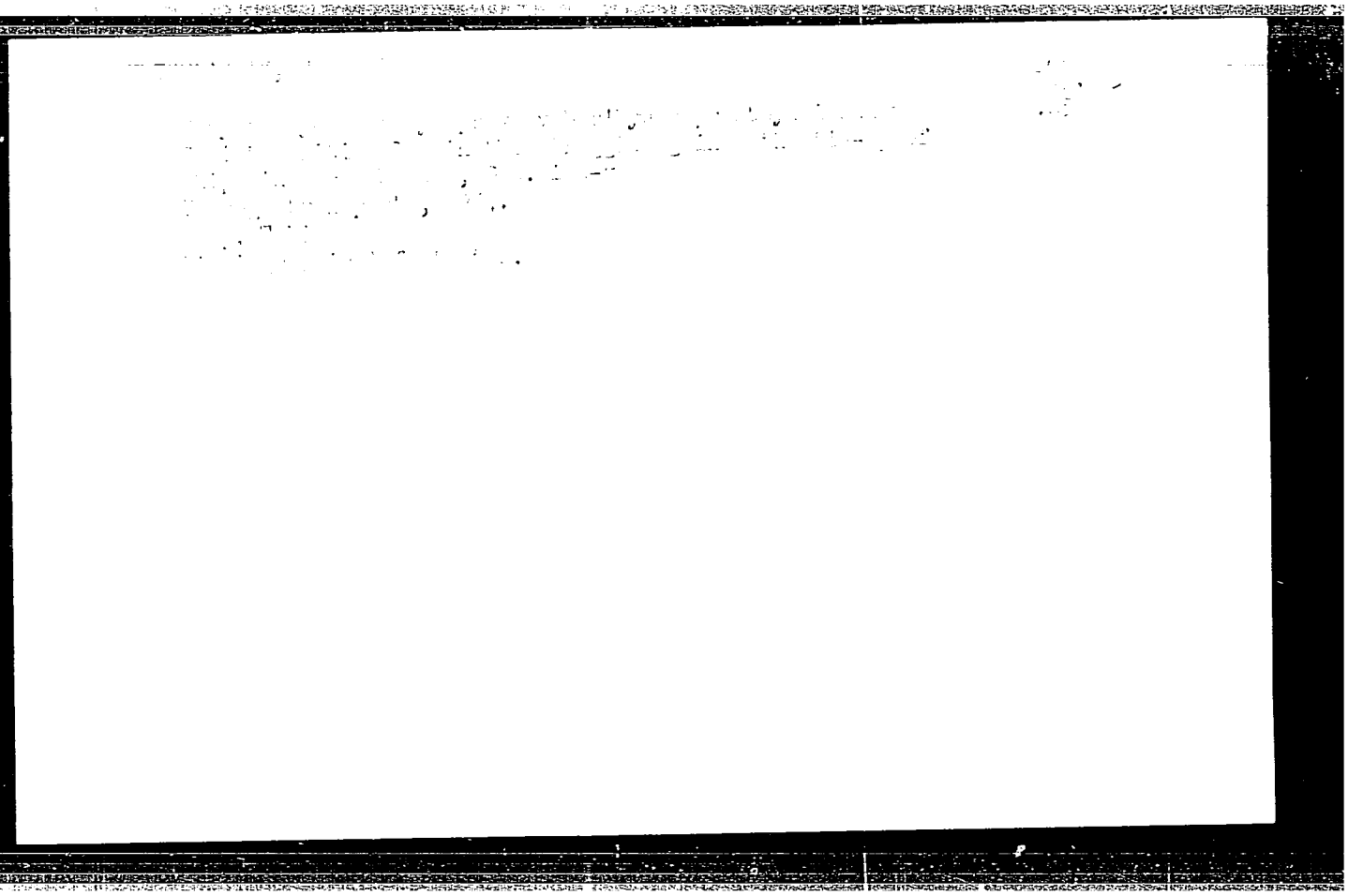

SHMIGEL'SKIY, V.K.

SOV/138-59-3-4/16

AUTHORS: Blagov, [illegible] (Deceased); Pechkovskaya, [illegible].A.; Lygin, A.S., Simanovskaya, S.A. and Shmigel'skiy, V.K.

TITLE: Electron-Microscopic Investigations of Rubber Mixtures and Their Basic Components (Elektronno-mikroskopicheskoye issledovaniye rezinovykh smesey i ikh osnovnykh komponentov)

PERIODICAL: Kauchuk i rezina, 1959, Nr 3, pp 12 - 18 (USSR)

ABSTRACT: Most interesting results of electron-microscopic investigations were obtained when analysing natural and synthetic rubbers (Refs 3 to 8). It was possible to determine the sol and gel fractions of natural rubber, the sulphur-structure which is characteristic for rubbers and the relation between the dimensions of spherical components and the molecular weight of the rubber, as well as the characteristics of the secondary structure of crystallising rubbers. During the present investigations the authors used a modified electron microscope EM-100 with a 0.25 mm

Card 1/3

diaphragm (0.05 mm diaphragm aperture) which made it possible to increase the resolving power of the microscope from 100 to 30 Å. Details of the preparation of samples from rubber solutions as well as from hard ru rubbers are given and electron-microscopic tests were carried out on them. Figure 1 shows photographs of a natural rubber film sample; Figure 2 a colloidal replica with an unplasticized butadiene-styrene rubber surface; Figure 3 a quartz replica of an unfilled natural rubber vulcanisate; Figure 4 a quartz replica of unfilled vulcanisate prepared from natural and sodium-butadiene rubber. In all cases the degree of magnification is quoted. Further tests were carried out on various types of activated carbon black. A generator with a special vibrator (15 cycles/second) was used for dispersing the carbon black in alcohol or in toluene (Figure 5). Figures 6 to 9 show micro-photographs of four activated carbon blacks, and a table gives characteristics of their degree of dispersion. Formulae for calculating the average

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diameters are given. Special channel black is used in the manufacture of various types of ink. It is characterised by a high degree of dispersion, and a lesser degree of coarseness than normal channel black. Anthracene black resembles furnace black to a greater degree than channel black. This is confirmed by comparative tests on rubbers containing the two types of carbon black; rubbers containing anthracene black as fillers showed a higher rate of vulcanisation and higher moduli. There are 9 figures, 1 table and 17 references, of which 5 are English, 4 German and 8 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute for the Tyre Industry)

Card 3/3

ZUBANOV, V.A.; VOSTROKNUTOV, Ye.G. Prinimali uchastiye: RUDENKO, G.V.; SHMIGIROVSKAYA, K.S.

Development of efficient vulcanization conditions in the recapping of automobile tires. Kauch. i rez. 24 no.6:25-29 Je '65. (MIRA 18:7)

1. Nevinnomysskiy shinovosstanovitel'nyy zavod i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

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 ENCL: 00

SUB CODE: SS, OP NR REF SOV: 010 OTHER: 001

Card 2/2

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.

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.

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).

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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 ENCL: 00

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

Card 2/2

L 33259-66

ACC NR: AR6017243 SOURCE CODE: UR/0058/65/000/012/D039/D039

38
B

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

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

STOLYAROV, B.M., inzh.; SHMIGOL', I.N., inzh.

Redesigning of DSP-400 deaeration column. Elek. sta. 36 no.1: 32-36 Ja '65. (MIRA 18:3)

SHMIGOL', Nikolay Nikitovich [Shmyhol', M.]; TSALYUK, M., red.; LEVCHENKO, O., tekhn.red.

[Economic achievements of the building of socialism in People's China] Ekonomichni uspikhy sotsialistychnoho budivnytstva v narodnomu Kytai. Kyiv, Derzh.vyd-vo polit.lit-ry URSR, 1960. 147 p. (MIRA 13:2)
(China--Economic conditions)

BESSONOV, S.A.; VASIL'KOV, N.P., kand. ekon. nauk; VLASOV, V.A., kand. ekon. nauk; GLUKHAREV, L.I., kand. ekon. nauk; DANILEVICH, M.V., doktor ekon. nauk; ZHAMIN, V.A., doktor ekon. nauk, prof.; ZAKHMATOV, M.I., kand. ekon. nauk; KURAKIN, N.A., kand. ekon. nauk; PANOV, V.P.; SMIRNOV, G.V., kand. ekon. nauk, dots.; TRIFONOV, V.I., kand. ekon. nauk; TYAGAY, Ye.Ya.; FAMINSKIY, I.P.; KHODOV, L.G.; SHMIDT, G.A., kand. ekon. nauk, dots.; SHMIGOL', N.N., kand. ekon. nauk, dots.; MATSUK, R.V., red.; GARINA, T.D., tekhn. red.

[The economy of foreign countries; the capitalistic system of the world economy after the Second World War]Ekonomika zarubezhnykh stran; kapitalisticheskaia sistema mirovogo khoziaistva posle Vtoroi Mirovoi voiny. Pod red. V.A.Zhamina. Moskva, Vysshaia shkola, 1962. 632 p. (MIRA 16:1)
(Economic history)

SHMIGOVSKIY, K. A.

5674. SHMIGOVSKIY, K. A. Vrediteli Polya, Ogoroda, Sada i Lesa. Posobiye Dlya Uchiteley Sred. Shkoly. 3-E Ispr. i Dop. Izd. Kiev, <<Rad. Shkola>>, 1954. 288 s. s Ill.; 71. Ill 22 s. m. 8:000 Ekz. 7r V per.—Bibliogr: s 277.—Na Ukr. Yaz.—(55-186)632.6/7 + (016.3)

SO: Knizhnaya, Letopis, Vol. 1, 1955

YERMOLENKO, V.M.; SHMIGOVSKIY, K.A.

Ecology of some sawflies (Hymenoptera Tenthredinidae) injurious to the Kiev parks. Nauk. zap.Kiev.un. 13 no.12:101-108 '54. (MLRA 9:10)
(Kiev--Sawflies)

USSR/General and Specialized Zoology - Insects. P.

Abs Jour : Ref Zhur - Biol., No 9, 40137

Author : Shmigovs'kiy, K.A.

Inst : Kiyev University.

Title : The Lilac Moth Gracilaria syringella and Methods of Its Control.

Orig Pub : Nauk. zap. Kiivsk. un-t, 1956, 15, No 3, 153-158.

Abstract : All the phases in the development of the moth and its biology (especially the mine-laying and curling the leaves into tubes) were described. A list was given of the representatives of the specific tubular fauna and Telenoma chloropus found there (first noted only in Sweden and Hungary). The moth had 3 complete generations in the Kiev region. A phenogram was given of the moth's development by months in 1945 and 1946. The parasites of the moth were

Card 1/2

SIMIK, Lidiya Samuilovna

To Studies of the Dependence of Pharmacological Action from Quantities of Poisons (of Naturally Opposed Influences of Large and Small Concentrations of Salt on Heavy Metals in Blood Vessels)

Dissertation for candidate of a Medical Science degree. Stalingrad Medical Institute, 1950

34835

S/106/62/000/003/005/010
A055/A101

9,3240 (1040, 1139, 1154)

AUTHOR: Shmilevich, M.S.

TITLE: Relationship between the instability of the modulus and of the phase of the amplification factor of amplifiers with single-channel feedback

PERIODICAL: Elektrosvyaz', no. 3, 1962, 28 - 31

TEXT: In this article is examined the instability, not only of the modulus, but also of the phase of the amplification factor of amplifiers with single-channel feedback. The instability of the complex amplification factor of these amplifiers is determined by:

$$d(\ln \dot{K}_{feedb}) = d(\ln K_{feedb}) + id\varphi_{feedb} = \frac{dK_{feedb}}{K_{feedb}} + id\varphi_{feedb} \qquad (2)$$

where $\dot{K}_{feedb}$ is the complex amplification factor, K_{feedb} is its modulus, and φ_{feedb} is its phase shift. The real and the imaginary components of (2) represent, respectively, the modulus instability and the phase instability. Deducing the expressions for $\frac{dK_{feedb}}{K_{feedb}}$ and $d\varphi_{feedb}$, and substituting them in (2), the author

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Relationship between .....

obtains

$$d(\ln K_{feedb}) = \left(\frac{1}{S_{mod}} + i\frac{1}{S_{ph}}\right)\left(\frac{dK}{K} + id\varphi\right) = \left(\frac{1}{S_{mod}} + i\frac{1}{S_{ph}}\right)d(\ln K) \qquad (5)$$

where

$$S_{mod} = \frac{1 - 2\beta K\cos\varphi + \beta^2K^2}{1 - \beta K\cos\varphi}$$

is the modulus sensitivity of the amplifier with feedback, and

$$S_{ph} = \frac{1 - 2\beta K\cos\varphi + \beta^2K^2}{\beta K\sin\varphi}$$

is its phase sensitivity, β being the feedback factor, K the modulus of the amplification factor without feedback and $\varphi = \arg K$. Whereas S_{mod} characterizes the stabilization of the amplification factor modulus, S_{ph} characterizes the "de-stabilization" of the phase shift by the feedback. In the second part of the article, the author describes a graphical method permitting the determination of S_{mod} and S_{ph}. The conclusions of the author are: 1) The magnitudes βK, φ, S_{mod} and S_{ph} characterizing the amplifier with single-channel feedback being related, the knowledge of two of these magnitudes is sufficient for the determina-

Card 2/3

SHMILEVICH, M.S.

Relationship between the instability of the modulus and phase of the gain factor of an amplifier with single-channel feedback. Elektrosviaz' 16 no.3:28-31 Mr '62. (MIRA 15:4)
(Amplifiers (Electronics))

L 62274-65

ACCESSION NR: AR5004630 S/0274/64/000/011/B044/B044 6
621.375.13

SOURCE: Ref. zh. Radiotekhn. i elektrosvyaz'. Sv. t., Abs. 11B289 B

AUTHOR: Shmilevich, M. S.

TITLE: Stability of frequency characteristics of the amplifiers with two feedback channels

CITED SOURCE: Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR, vyp 19, 1964, 97-105

TOPIC TAGS: feedback amplifier, amplifier frequency characteristic

TRANSLATION: Formulas are developed for determining the additional stabilizing effect of a local feedback channel on the frequency characteristic of an amplifier. Two variants are considered: (1) negative local feedback and (2) positive local feedback. Consideration of the new formulas shows that: (1) the local feedback stabilizes the frequency characteristic if it is positive and does not encompass the part of the amplifier having more unstable gain; (2) the stabilizing effect is higher if the local-feedback-loop transfer ratio approaching 1 and is uniform within the frequency band; (3) the local negative feedback, as a rule, destabilizes the

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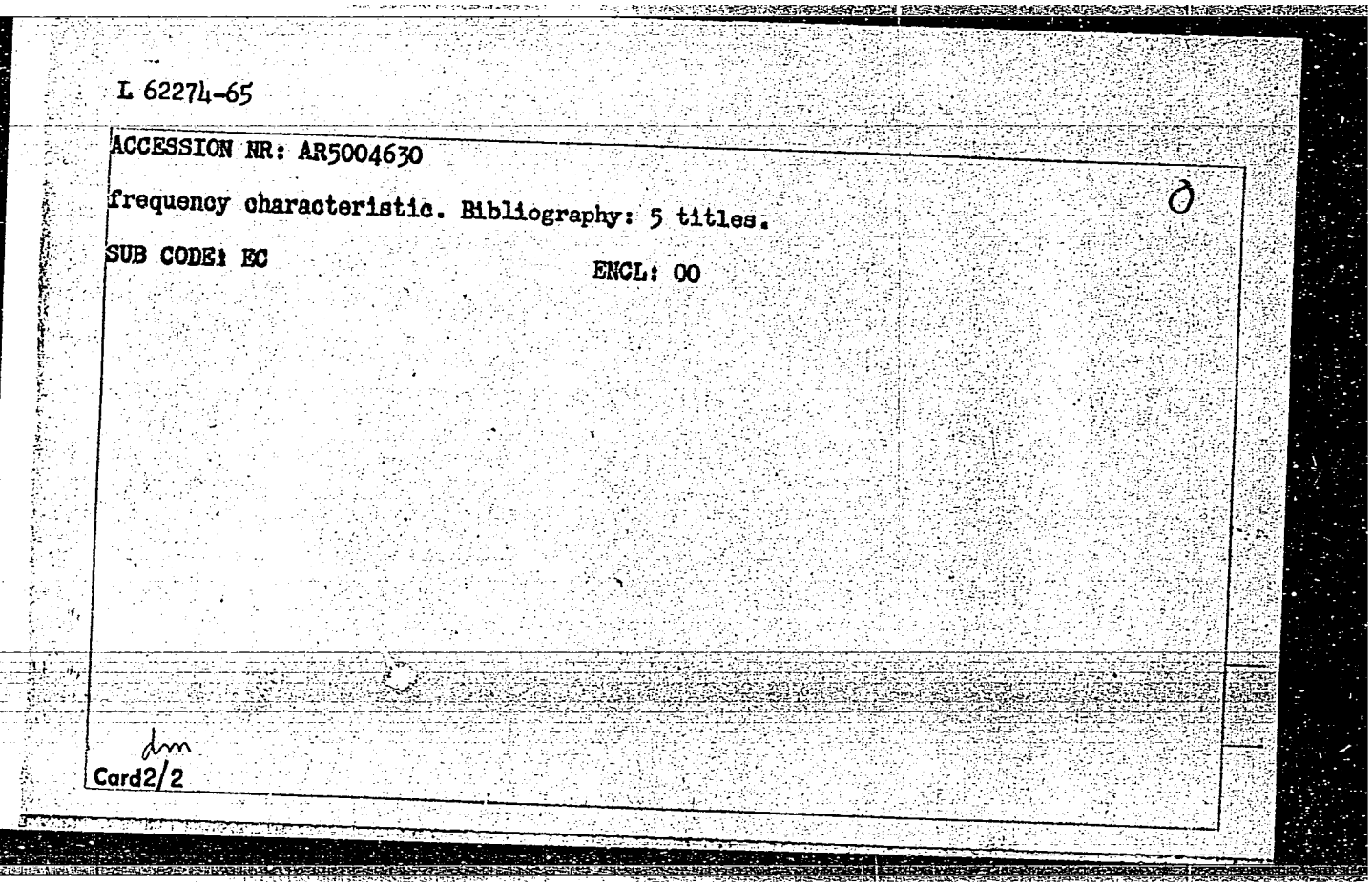

L 62274-65

ACCESSION NR: AR5004630

frequency characteristic. Bibliography: 5 titles.

SUB CODE: EC ENCL: 00

dm

Card 2/2

[illegible], Mano

Research Institute of Plant Improvement and Plant Growing, Sopronhorpacs-Period. Term tud kozl 8 no.6:283-284 Je'64.

DVOYEGLAZOV, B.; SHMILOVICH, E., gruppovyy mekhanik po remontu; KATS,A., gruppovyy mekhanik po remontu

Reply to Novorossiisk mechanizers. Mor.flot 22 no.12:45 D '62. (MIRA 15:12)

1. Zamestitel' nachal'nika rayona po mekhanizatsii Odesskogo porta (for Dvoyeglazov).

(Cargo handling--Equipment and supplies)

KATS, A.; SHMILOVICH, E.

Modernization of the 4000M automatic loader. Mor. flot 25 no.4: 15-16 Ap '65. (MIRA 18:6)

1. Rukovoditel' gruppy otdela portovoy mekhanizatsii TSentral'nogo proyektno-konstruktorskogo byuro-3 (for Kats). 2. Starshiy inzh. garazha avtopogruzchikov Odesskogo porta (for Shmilovich).

SIRELOVICH, L. A., SIVTSOVA, A. S.

Narcotics.

Combined therapy of schizophrenia. Zhur. nevr. i psikh. 52 no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

SHMILOVICH, L. A;SIVTSOVA, A. S.

Combined therapy of schizophrenia. Zh. nevropat. psikhiat., Moskva 52 no.3:59 Mar 1952. (CLML 22:2)

1. Of Kursk Psychoneurological Hospital (Head Physician -- A. V. Nikitina).

Sh... I.A.; ..., A.I.; NATAROVA, T.V.

Aminazine treatment of stuporous states (clinical and physiological analysis). Zhur. nevr. i psikh. 64 no.11:1722-172[illegible] '64.
(MIRA 18:6)

1. Respublikanskaya psikhonevrologicheskaya bol'nitsa No.1 (glavnyy vrach B.A. Morozov, nauchnyy rukovoditel' - prof. A.N. Molokhov) Ministerstva zdravookhraneniya Moldavskoy SSR, Kishinev.

TOPCHIYEV, A.V., akademik, glavnyy redaktor; SHUMILOVSKIY, N.N., doktor tekhnicheskikh nauk, otvetstvennyy redaktor; LOSSIYEVSKIY, V.L., redaktor; MEZIN, I.S., redaktor; NADZHAFOV, E.M., redaktor; PLISKIN, L.G., redaktor; STRAKHOVA, L.P., redaktor; YARMOL'CHUK, G.G., redaktor; PRUSAKOVA, T.A., tekhnicheskiy redaktor

[Session of the Academy of Sciences of the U.S.S.R. on scientific problems in automatization of production, October 15-20, 1956. Overall automatization of production processes] Sessiia Akademii nauk SSSR po nauchnym problemam avtomatizatsii proizvodstva, 15-20 oktiabria 1956 g; kompleksnaia avtomatizatsiia proizvodstvennykh protsessov. Moskva, 1957. 310 p. (MLRA 10:4)

1. Akademiya nauk SSSR.
(Automatic control) (Automation)

SHMIN, M.

Growth of deposits in Rostov Province savings banks. Fin. SSSR 16 no.1:65-67 Ja '55. (MLRA 7:12)
(Rostov Province--Savings banks)

SHMINKE, F.

Automatic production lines. IUn. tekh. 2 no.2:77-78 F '58.
(MIRA 11:2)

1. Zaveduyushchaya otdelom tekhniki Sverdlovskogo dvortsa pionerov.
(Automatic control--Models)

YAKOVLEV, I.I.;LISOVSKAYA, G.M.;SHMINKE, G.A.

Electrical activity of the cerebral cortex and of the uterus in labor as an objective index of the efficacy of painless labor. Akush. gin., Moskva no.5:37-45 Sept-Oct 1952. (CLML 23:2)

1. Professor for Yakovlev. 2. Of the Department of Obstetrics and Gynecology (Head -- Prof. I. I. Yakovlev (Sverdlovsk Medical Institute (Director -- Prof. A. F. Zverev) and of the Biophysical Laboratory, Sverdlovsk Scientific-Research Institute for the Care of Mother and Child (Director -- R. A. Malysheva).

SHMINKE G.A.

YAKOVLEV, I.I.; LISOVSKAYA, G.M.; SHMINKE, G.A.

Electrical activity of the cerebral cortex in the psychoprophylactic method of painless labor. Akush.i gin. no.1:3-8 Ja-F '54. (MLRA 7:6)

1. Iz akushersko-ginekologicheskoy kafedry Sverdlovskogo meditsinskogo instituta i Sverdlovskogo nauchno-issledovatel'skogo instituta okhrany materinstva i mladenchestva (Nauchnyy rukovoditel' i zaveduyushchiy kafedroy - professor I.I.Yakovlev).
(Electroencephalography) (Childbirth--Psychology)

SHMINKE, G.A.

Evaluation of the bioelectrical activity of the cerebral cortex in man in relation in inhibition and stimulation. Zhur.vys.nerv.deiat. 4 no.6:882-888 N-D '54. (MLRA 8:7)

1. Biofizicheskaya laboratoriya Sverdlovskogo nauchno-issledovatel'skogo instituta okhrany materinstva i mladenchestva.
(ELECTROENCEPHALOGRAPHY, eff. of stimulation & inhib.)
(CEREBRAL CORTEX, physiology, eff. of stimulation & inhib., EEG)

SHMINKE, G.A.

New method of evaluating the bioelectric activity of the brain by using electric integrator. Biul. eksp. biol. i med. 37 no.6:65-68 Je '54. (MLRA 7:8)

1. Iz biofizicheskoy laboratorii Sverdlovskogo instituta okhrany materinstva i mladenchestva (dir. R.A.Malysheva, nauchn. kurovod. prof. I.I.Yakovlev)
(BRAIN, physiology,
electrophysiol., determ., appar.)

SHMINKE, G.A.

Integration of bioelectric activities of the brain and obtaining condensed oscillograms in man. Biul. eksp. biol. i med. 38 no.11: 71-73 N '54. (MLRA 8:1)

1. Izbiofizicheskoy laboratorii Sverdlovskogo instituta okhrany materinstva i mladenchestva (dir. R.A.Malysheva)
(BRAIN, physiology,
electrophysiol., integration of bioelectric activities & condensed oscillograms in man)

SHMINKE, G.A.

[Electric measurements in physiology and medicine] Elektricheskie izmereniia v fiziologii i meditsine. Moskva, Medgiz, 1956. 205 p. (MIRA 10:3)
(ELECTRIC MEASUREMENTS)
(ELECTROPHYSIOLOGY)

Shminke, G. A.

USSR/Human and Animal Physiology - Nervous System. R-12

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 71116

Author : Shminke, G.A.
Title : The Evaluation of Bioelectrical Activity of the Cerabral Cortex in Man in Relation to the Processes of Excitation and Inhibition.

Orig Pub : V sb. Vopr teorii i praktiki elektroentsefalogr., L. LGU 1956, 245-258

Abstract : Determination of gross bioelectrical effect, usually for 1 min., was done by the aid of a linear detector and coulombometric integrator. Summary bioelectric effect of the occipital cortex was determined in the states of waking and sleep (during 45 minutes) and with open and closed eyes (5 minutes). The author suggests that β-activity does not appear to represent "EEG", which characterizes the actively excited state of the cortex. Only Alpha and Delta rhythms actually reflect the functional

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SHMINKE, G.A.

Bioelectric effect in occipital and frontal cortical lobes in man with covered eyes. Biul. eksp. biol. i med. 41 no.2:11-14 F '56 (MLRA 9:6)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta vosstanovitel-noy khirurgii, travmatologii i ortopedii (dir.-chlen korrespondent AMN SSSR prof. F.R. Bogdanov) Predstavlena deystvitel'nym chlenom AMN SSSR. V.N. Chernigovym.

(CEREBRAL CORTEX, physiology,
eff. of covering of eyes on bio-electric funct. of frontal & occipital regions (Rus))
(EYES, physiology,
eff. of covering on frontal & occipital cortical bio-electric funct. (Rus))

SHMINKE, G.A.

Integration of biopotentials of brain and muscles. Biul.eksp. biol. i med. 41 no.3:75-78 Mr '56. (MLRA 9:7)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta vosstanovitel'noy khirurgii, travmatologii i ortopedii (dir.-chlen-korrespondent AMN SSSR F.R.Bogdanov)

(ELECTROMYOGRAPHY
bio-electric potentials, integration with EEG)
(ELECTROENCEPHALOGRAPHY
bio-electric potentials, integration with electromyography)

AUTHOR: Shminke, G.A. (Sverdlovsk) 47-6-24/37

TITLE: An Electronic Signaling Device (Elektronnyy signalizator)

PERIODICAL: Fizika v Shkole, 1957, # 6, page 68 (USSR)

ABSTRACT: This electronic signaling device is intended to go off when the guarded object is touched. The article contains a diagram and gives the principle of operation which consists of conveying a positive potential to the grid of a triode. The device operates on 120 v a.c. and can be used as an aid for teaching physics in the 10th class. A detailed description of the device is given in the article.

There is one figure.

AVAILABLE: Library of Congress

Card 1/1

KROL', N.G.; SHMINKE, G.A.

Differential thermometry as a method of objective registration of the intensity of hyperkinesia [with summary in French]. Zhur.nevr. i psikh. 57 no.12:1467-1471 '57. (MIRA 11:2)

1. Iz laboratorii klinicheskoy fiziologii Sverdlovskogo nauchno-issledovatel'skogo instituta vosstanovitel'noy khirurgii, travmatologii i ortopedii (dir. - prof. F.R.Bogdanov)
(BODY TEMPERATURE, in various diseases, differential thermometry in determ. of intensity of hyperkinesia (Rus))
(MOVEMENT DISORDERS, physiology, same)

SHMINKE, G.A.

Quantitative recording of the frequency of muscle biological currents on a kymograph. Biul. eksp. i biol. med. 50 no. 8:122-124 Ag '60. (MIRA 13:10)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (dir. - kandidat meditsinskikh nauk Z.P. Lubegina). Predstavlena deystv. chlenom AMN SSSR V.V. Parinym.

(KYMOGRAPHY) (MUSCLE) (ELECTROPHYSIOLOGY)

SHMINKE, G.A.

Alpha and beta waves in the electrical activity of the cerebral cortex. Zhur. vys. nerv. deiat. 11 no.2:245-248 Mr-Ap '61.
(MIRA 14:6)

1. Research Institute of Mother and Child Protection, Sverdlovsk.
(ELECTROENCEPHALOGRAPHY)

SHMINKE, G.A.

Integration of the mechanical impulses of the heart. Biul.eksp. biol. i med. 51 no.1:107-109 Ja '61. (MIRA 14:5)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta obshchey materinstva i mladenchestva (dir. - kand.med.nauk R.A.Malysheva, nauchnyy rukovoditel' - doktor meditsinskikh nauk V.M.Lotis). Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.
(HEART)

28015
S/081/61/000/015/004/139
B101/B110

24.7700

AUTHOR: Shmirous, K.

TITLE: Semiconductor compounds with one excess component

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1961, 29, abstract 15B195 (Sb. "Vopr. metallurgii i fiz. poluprovodnikov", M., AN SSSR, 1959, 117-119)

TEXT: The effect of non-stoichiometricity on the electrical properties of several semiconductor compounds of group $A^{III}B^{V}$ (antimonides of Al, Ga and In), of group $A^{IV}B^{VI}$ (tellurides of Si and Ge) and of group $A^{V}B^{VI}$ (Bi telluride) was studied. The samples were purified by zone melting. The concentration of the active impurities was determined from the Hall constant. It was demonstrated that the antimonides of the metals of group III have hole-type conductivity at arbitrary non-stoichiometricity. In bismuth telluride Bi excess causes hole conductivity, Te excess, however, causes electron conductivity. In the

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Semiconductor compounds with one ...

Si and Ge tellurides a disturbance of the stoichiometric ratios changes the number of active defects in the crystal. [Abstracter's note: Complete translation.]

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L 21143-66 EWT(m)/EWP(j)/T/EWA(h)/EWA(l) PM
ACC NR: AP6003503 SOURCE CODE: UR/0364/66/002/001/0117/0122

AUTHOR: Silin', E. A.; Motorykina, V. P.; Shmit, I. K.; Geyderikh, M. A.; Davydov, B. E.; Krentsel', B. A.

ORG: Latvian State University (Latviyskiy gosudarstvennyy universitet); Institute of Petrochemical Synthesis, Academy of Sciences SSSR (Institut neftekhimicheskogo sinteza Akademii nauk SSSR)

TITLE: Structural changes in polyacrylonitrile during infrared irradiation

SOURCE: Elektrokhimiya, v. 2, no. 1, 1966, 117-122

TOPIC TAGS: polyacrylonitrile, IR absorption spectrum, electron spectrum

ABSTRACT: The purpose of this investigation was to study the effect of intense radiation on polyacrylonitrile. The selective interaction of radiation on the vibrational energy of individual groups of polyacrylonitrile molecules was assumed. The use of a concentrated IR beam was used to obtain a polyacrylonitrile film with treated sections of a given geometric configuration and degree of conversion. Polyacrylonitrile film was obtained by redox initiation with an average molecular

UDC: 621.315.592 : 547

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L 21143-66
ACC NR: AP6003503

weight of 23000-36000. The films were prepared from 3% polyacrylonitrile solution in dimethylformamide and kept in vacuum to a constant weight. The film thickness was 8-12 microns. The films were irradiated in 10^{-5}-10^{-6} mm pressure chamber through a quartz window about 100 mm from the light source. The spectra of irradiated samples were obtained in air at room temperature. Electronic absorption spectra were taken on an SF-4 spectrophotometer and vibrational spectra were taken on an IKS-14 spectrophotometer. It was found that infrared irradiation produces significant changes in the vibrational absorption spectra of polyacrylonitrile. The IR irradiation increases the mobility of hydrogen in tertiary carbon and facilitates its migration to the nitrile group, >C=NH, which, in turn, produces intermolecular cross-linking. The hydrogen band is formed between the >C=NH group and the neighboring nitrile group. This scheme is supported by the appearance of the diffuse absorption band, shifted toward the 3.45 cm^{-1} region, which is assigned to the valence vibrations of the >N-H...N≡C-group. Electronic spectra also indicate the formation of polyunsaturated bonds. The comparison of the vibration absorption spectra of polyacrylonitrile upon thermal treatment with those of the same material irradiated with IR show that both in their initial and subsequent stages, the conversion process during IR irradiation differs from the conversions which take place during thermal treatment. Conversion of polyacrylonitrile during IR irradiation

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L 21143-66
ACC NR: AP6003503

proceeds by the self-accelerating reaction scheme, the rate of which is significantly higher than during thermal treatment. A. E. Krumin participated in the experimental part of this work. Orig. art. has: 3 figures.

SUB CODE: 07/ SUBM DATE: 27Apr65/ ORIG REF: 008/ OTH REF: 012

Card 3/3 UCR

SHMIT O A

51-6-10/26

AUTHOR: Shmit, O. A.

TITLE: The Effect of Polarised Light on Colour Centres in Alkali Halide Crystals. (Vliyaniye polyarizovannogo sveta na tsentry okraski v shchelochno-galoidnykh kristallakh.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.II, Nr.6, pp. 755-758. (USSR)

ABSTRACT: This paper was presented at the Conference on Luminescence held in Tartu in June 1956. An additively coloured monocrystal of KCl, with F-band only (Fig.1, 1), illuminated with linearly polarised light of wavelength corresponding to the F-band absorption, exhibited the following effect: absorption decreased and the well-known F_2-,F_2^+- and M-bands appeared. All these absorption bands exhibited dichroism (Fig.1, curves 2 and 3). The absolute intensity of dichroism depended on the intensity and duration of illumination and on the angle between the electric vector of polarised light and the symmetry axes of the given crystallographic plane.

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The Effect of Polarised Light on Colour Centres in Alkali Halide Crystals.

On illumination with M-band linearly polarised light, whose electric vector lies along the direction [011], absorption in the direction [011] decreased (Fig.2, curve 1'). Dichroism also decreased, and if the crystal was illuminated for a sufficiently long time, dichroism disappeared and then reappeared with an opposite sign. Simultaneously the M-band absorption in the direction [011] increased (Fig.2, curve 2'). The F-band absorption changed also. It is suggested that the observed dichroism in the M-band is linked with the intrinsic structure of the M-centres: in the F-band dichroism is due to the polarising action of the M-centres on the F-centres. Illumination of an additively coloured crystal of KCl in the M-band may be used to reveal repeated trapping. There are 3 figures and 6 references, 2 of which are Slavic.

Card 2/3

Shmit, O A

48-4-38/48

SUBJECT: USSR/Luminescence

AUTHOR: Shmit O.A.

TITLE: Effect of Polarized Light on Color Centers in Alkali-Haloid Crystals (Vliyaniye polyarizovannogo sveta na tsentry okraski v shchelochno-galoidnykh kristallakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, p 588 (USSR)

ABSTRACT: Centers of color (capture centers) in alkali-haloid crystals were investigated. The method used consisted in the following: photochemical reactions are induced in a colored alkali-haloid crystal by means of linearly-polarized light; products of reactions are studied (for light absorption) by means of also linearly-polarized light. If these products are anisotropic formations, dichroism is observed in the light absorption. Measuring the amount of dichroism and its angular dependences, it is possible to judge on the structure of color centers. The dichroism in the absorption M-band of KCl crystals observed experimentally confirms the model of M-centers proposed

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20841

S/048/61/025/003/030/047
B104/B202

24.3500 (1138, 1153, 1395)

AUTHORS: Shmitz, O. A. and Zakis, Yu. R.

TITLE: Optical properties of alkali halide crystals with O-, S-, Se- and Te-impurities

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 385-386

TEXT: This paper was presented at the 9th conference on luminescence (crystal phosphors), Kiyev, June 20 to 25, 1960. The studies are described which were made in continuation of those of 1959 of alkali halide crystals with O-, S-, Se-, and Te-impurities. The KCl KBr and KJ crystals were obtained by breeding by the method of Stockbarger or by diffusing impurity vapor into colored crystals. The study of the absorption spectra of the crystals containing oxygen impurities showed results which were in agreement with those obtained by western scientists in earlier papers. Fig. 1 shows the absorption spectrum (curve 1), the excitation spectrum (curve 2), and the spectrum of photoluminescence (curve 3) in the case of excitation with λ = 313 mμ of a KBr-Se crystal. A KBr-Te crystal has a similar

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Optical properties of alkali...

spectrum. The KCl crystals with the above impurities show a monotonic increase of absorption into the direction of shorter waves without distinct maxima. All crystals have weak photoluminescence in the visible range which has hitherto not been studied more accurately. Absorption in KJ crystals with the same impurities increases into the same direction, however, maxima can be observed. They also exhibit photoluminescence in the visible range of the spectrum. Hence, it is obvious that the absorption and luminescence spectra of KCl, KBr, and KJ crystals with O-, S-, Se-, and Te-impurities are characteristic of this type of impurities. This becomes especially manifest by the fact that these spectra of the mentioned crystals are completely different when containing Cu or Pb. Furthermore, it was clearly observed that the maxima of these spectra decrease with decreasing concentration of the impurities. It is assumed that the mentioned impurities, are bivalent anions in the crystal lattice. In the following discussion Ch. B. Lushchik states that the major part of the papers deals with the study of cation impurity luminescence centers and that more attention should be paid to the anion luminescence centers. There are 1 figure and 4 non-Soviet-bloc references.

Card 2/3

Optical properties of alkali...

ASSOCIATION: Latviyskiy gos. universitet im. P. Stuchki (Latvian State University imeni P. Stuchki)

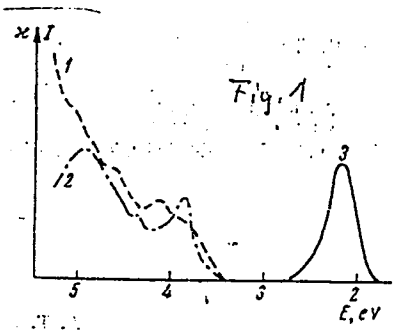

Fig. 1

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ACCESSION NR: AT4016303 S/0000/62/000/000/0160/0163

AUTHOR: Alekseyeva, L. A.; Zakis, Yu. R.; Shmit, O. A.

TITLE: Optical properties of alkali halide crystals with admixtures of elements of the sixth group

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy*. Fiz. shchelochnogaloidn, kristallov (Physics of alkali halide crystals). Riga, 1962, 160-163

TOPIC TAGS: alkali halide, alkali halide crystal, optical property, luminescence, absorption spectrum, crystal impurity, spectrophotometry, sulfur admixture, selenium admixture, tellurium admixture

ABSTRACT: Crystals of alkali halides such as NaCl, KCl, KBr and KI, containing small amounts of S, Se, Te, Na_2S or ZnS as impurities, were subjected to spectroscopic studies. Comparison of the absorption, excitation and luminescence spectra of such activated crystals revealed a series of weak maxima in the near-ultraviolet and visible absorption spectra, while the excitation spectra showed 1-4 clear maxima in the near-ultraviolet, only some of which, however, coincided with the maxima in the absorption

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ACCESSION NR: AT4016303

spectra. In the case of KBr crystals containing S or Se, the excitation spectra were affected by the method of crystallization. The luminescence spectra showed 1-2 maxima in the visible spectrum, sometimes accompanied by maxima in the near-infrared; these spectra were affected by the temperature and the wavelength of the excitatory light. The luminescence of most of these crystals were only weakly polarized. The results of these studies and studies of the quenching temperature indicate that S and Se probably enter into the crystal lattice as anions; among the systems investigated, only NaCl-Te, KCl-Te and KI-S were non-isomorphous, resulting in only slight luminescence. It is apparent that the luminescence centers are not merely ion activators, and that there are least two types of addition centers in these crystals. "Thanks are expressed to N. Ye. Lushehik for supplying pure S and Se, and to P. P. Feofilov (Doctor in the Physico-Mathematical Sciences) for making available an instrument for measuring the polarization of the luminescence." Orig. art. has: 3 figures.

ASSOCIATION: Latviyskiy Gosudarstvenny*y universitet im. P. Stuchki (Latvian State University)

SUBMITTED: 00 DATE ACQ: 06Mar64 ENCL: 00

SUB CODE: IC OP NO REF SOV: 003 OTHER: 001

Card 2/2

VASIL'YEV, V.G.; IVANOV, A.P.; VOSTRYAKOV, O.I.; SHMITEL'SKIY, V.N.; GAFANOVICH, M.D.; DIDENKO, K.I.; ABUGOV, Yu.O.; SHRAMKO, K.N.; ZAGARIY, G.I.; DUDCHENKO-DUDKO, V.M.; NIKULIN, Yu.Ya.; YEFIMOV, Yu.N.; BYKOV, V.L.

Inventions. Avt. i prib. no.4:73-74 O-D '64 (MIRA 18:2)

KATS, B.A., kand.tekhn.nauk; SHMITKINA, V.M.; Prinimali uchastiye: UBAYDULLAYEV, Kh.; VORONINA, L.D.; SHCHEBEL'NIKOVA, G.I.

Dependence of the quality of cottonseed oil on the depth of its extraction by benzene from the prepressed cottonseed cake. Masl.-zhir. prom. 27 no.6:10-12 Je '61. (MIRA 14:6)

1. Sredneaziatskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta zhirov.
(Cottonseed oil)

ALEKSEYEV, Ye.; BUSLAYEV, P.; SHMIT'KO, A., model'shchik.

No attention was payed to delegates' voices. Sov. profsoiuzy 4 no.9:71-73 S '56. (MLRA 9:10)

1. Predsedatel' zavkoma profsoyuza trudoprokatnog zavoda imeni Lenina (for Alekseyev) 2. Predsedatel' zavkoma profsoyuza Chelyabmetzavoda (for Buslayev).
(Clubhouses)

BUROVINA, I.V.; GLAZUNOV, V.V.; LEONT'YEV, V.G.; NESTEROV, V.P.; SKUL'SKIY, I.A.; FLEYSHMAN, D.G.; SHMITKO, M.N.

Content of lithium, sodium, potassium, rubidium and caesium in the muscles of marine animals of the Barents and Black Seas. Dokl. AN SSSR 149 no.2:413-415 Mr '63. (MIRA 16:3)

1. Institut evolyutsionnoy fiziologii AN SSSR. Predstavleno akademikom A.P.Vinogradovym.
(MARINE FAUNA) (MINERALS IN THE BODY) (MUSCLE)

SHMITKO, N.

Construction workers are giving out guarantees. Na stroi. Ros. no.9:5-6 S '61. (MIRA 14:10)

1. Glavnyy inzh. tresta Lenotdelstroy-1 Glavnogo Leningradskogo upravleniya po zhilishchnomu i grazhdanskomu stroitel'stvu.
(Construction industry)

SHMITKOVA, A.

Scientific and Practical Conference of Physicians of the Health Resorts and Sanatoriums of the Urals, Siberia and the Far East. Vop.kur.,fizioter. i lech. fiz. kul't. 27 no.5:469-472 S-O'62. (MIRA 16:9)

1. Zamestitel' nachal'nika Novosibirskogo territorial'nogo kurortnogo upravleniya professional'nykh soyuzov.
(URAL MOUNTAIN REGION--HEALTH RESORTS, WATERING PLACES, ETC--CONGRESSES)
(SIBERIA--HEALTH RESORTS, WATERING PLACES, ETC.--CONGRESSES)
(SOVIET FAR EAST--HEALTH RESORTS, WATERING PLACES,ETC.--CONGRESSES)

SHMIT'KOVA, A.S.; SHPAKOVSKAYA, L.I., red.; GOSTISHCHEVA, Ye.M., tekhn. red.

[Health resorts, sanatoriums, and rest homes of Siberia] Kurorty, sanatorii i doma otdykha Sibir. Novosibirsk, Novosibirskoe knizhnoe izd-vo, 1961. 148 p. (MIRA 15:1)

1. Glavnyy vrach Novosibirskogo kurortnogo Upravleniya (for Shmitkova).
(SIBERIA--HEALTH RESORTS, WATERING PLACES, ETC.)

SPERANSKIY, A.P. (Moskva); SHMITKOVA, A.S. (Novosibirsk)

Conference on research and practice of the Novosibirsk Territorial Health Resort Administration. Vop.kur.,fizioter.i lech.fiz.kul't. 25 no.1:89-92 '60. (MIRA 13:5)
(THERAPEUTICS, PHYSIOLOGICAL--CONGRESSES)

SMITS, Arvid Petrovich Cand Chem Sci (diss) "Oxidation of colloidal metals." Riga, 1957 18 pp with graphs 20 cm. (Latvian State Univ. Chem Faculty), ~~Chair of Chem~~) 150 copies

(KL, 12-57, 103)

SHMITS, Rudol'f [Smits, R.]

National holiday of the Czechslovakian people. Nauka i zhyttia 12 no.5:54 My '62. (MIRA 15:7)

1. General'nyy konsul Chekhoslovatskoy Sotsialisticheskoy Respubliki v Kiyeve.
(Czechoslovakia--Communism)

L 48561-65 EWG(j)/EWG(r)/EWT(l)/FS(v)-3/EWG(v)/EWG(a)-2/EWG(c) Pe-5 DD

ACCESSION NR: AR5011093 UR/0299/65/000/007/R034/R034

SOURCE: Ref. zh. Biologiya. Sv. t., Abs. 4R245

26
B

AUTHOR: Shmitt, F. V.

TITLE: Psychophysics at the molecular and submolecular levels

CITED SOURCE: Sb. Gorizonty Biokhimii. M., Mir, 1964, 338-353

TOPIC TAGS: bioelectric activity, molecular biology, neuron

TRANSLATION: The author says that psychophysics is concerned with the "scientific study of the relationship between thought processes and physics." He believes that the reverberating chains of neurons are a major factor in awareness, knowledge, and operative memory. This theory, however, requires support from data on the molecular mechanisms of recording, storing, and reproducing a long-lasting memory which produce no electrical reaction when electrophysiological methods of investigation are used. These views suggest that investigations at the molecular level are promising. The author cites the results of research on neuroglia and Schwann cell functions. It is interesting to note that the level of energy exchange in

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ACCESSION NR: AR5011093

nerve cells is very high, a phenomenon that cannot be explained by the need for potential generation. The author emphasizes that the rapid synthesis of neuroplasm and suppression of mitosis may have some evolutionary and physiological significance. He also discusses the role of neurofibrils consisting of protein neurofilaments and the nature of the rhythmic electrical activity of the brain. The author examines the transformation of sensory input signals into a stable macromolecular form (fixation of experience), which can take place either by the instructive (like the genetic "memory") or selective (like the immunological "memory") method. RNA seems to play a definite part in the storage of engrams, which are probably capable of self-reproduction accompanied by delocalization. The process of considering information apparently results in slight activation of the engrams. In future investigations of rapid reactions, an attempt should be made to increase the time resolution. This can be done by using the methods of solid state physics, physical and quantum chemistry. S. Zimont

SUB CODE: LS ENCL: 00

Card 2/2

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 6 (USSR) SOV/137-59-1-44

AUTHORS: Shmitt-Fogelevich, S. P., Sadkov, V. I.

TITLE: Ionization X-ray Apparatus for Investigating Refractories (Ionizatsionnaya rentgenovskaya ustanovka dlya issledovaniya ogneuporov)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. in-t nauchno-issled. i proyektn. rabot ogneuporn. prom-sti, 1958, Nr 5, pp 103-118

ABSTRACT: Description, general view, and layout of an ionization X-ray apparatus (IXA) constructed for X-ray investigation of refractories. The IXA was used for the identification of the following structurally similar crystalline phases: Kaolin and clay, mullite and sillimanite, and zirconium dioxide of cubic and monoclinic varieties. With X-ray diffraction patterns (X) identical for the minerals compared, significant differences in the intensity of the lines and the values for the interplane distances were found. The phase composition of corundum-mullite mixtures was determined quantitatively with the aid of IXA. Compared to the conventional Debye diagrams the precision of the results obtained on the X's photographed with the IXA is the same, while the time needed for the determinations (exposure and

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Ionization X-ray Apparatus for Investigating Refractories

development of X) is appreciably reduced, thus rendering the ionization method less labor-consuming than the Debye method. Besides, the presence of a Pt furnace within the IXA permits the photographing of X's at temperatures up to 1500°C.

Ya. G.

5(4) SOV/76-33-4-22/32

AUTHORS: Materova, Ye. A., Moiseyev, V. V., Shmitt-Fogelevich, S. P.

TITLE: Comparative Study of the Electrodic and Exchange Properties of Glass Electrodes by the Use of Radioactive Indicators (Sravnitel'noye issledovaniye elektrodnykh i obmennykh svoystv steklyannogo elektroda s primeneniyem radioaktivnykh indikatorov). I. Behavior of Sodium Glass Electrode in Solutions of Silver Nitrate (I. Povedeniye natriyevogo steklyannogo elektroda v rastvorakh azotnokislogo serebra)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 893-902 (USSR)

ABSTRACT: With reference to various data found in publications concerning the behavior of glass electrodes (Refs 1-12) it may be assumed that owing to the similarity of the ion radii of sodium and silver, the sodium glass electrode (GE) may be easily converted to the function of a silver electrode. In the work under review, the authors measured on the one hand the quantity of silver ions absorbed by the sodium glass as a function of time, and on the other hand they investigated the process of the passage of (GE) to the function of a silver electrode. Three different galvanic cells were applied. The glass electrode

Comparative Study of the Electrodic and Exchange Properties of Glass Electrodes by the Use of Radioactive Indicators. I. Behavior of Sodium Glass Electrode in Solutions of Silver Nitrate

(GE) was prepared from glass having the following composition: SiO_2 - 71mol%, B_2O_3 - 11 mol%, Al_2O_3 - 3 mol%, N_2O - 15 mol% (glass Nr 2 (Ref 3)), whereas the metallic silver- and silver chloride electrodes were prepared in the usual way (Ref 20). The cation absorption through glass was determined radiometrically by the aid of isotopes Ag^{110} and Na^{24} (Ref 23) with an aluminum β-counter (AS-2) on the instrument of the B type. The spherical shaped (GE) were left 1 month in a 10% silver nitrate solution, and the electromotive force (emf) was measured with two galvanic cells in 0.1 to 0.001 m $AgNO_3$-solution (Table 1). The (GE) were found to behave like silver electrodes as early as after 18 hours in $AgNO_3$-solution. Experiments were carried out with the (GE) in solution mixtures of $AgNO_3$ + $NaNO_3$ and it was observed that with a concentration ratio Na^+ : Ag^+ = 1 : 1, the Na-glass electrode acts like a silver electrode (an approximate constant (emf) was observed also by A. N. Mosevich on Na-glass electrodes in Na^+-Ag^+ solution mixtures).

SOV/76-33-4-22/32

Comparative Study of the Electrodic and Exchange Properties of Glass Electrodes by the Use of Radioactive Indicators. I. Behavior of Sodium Glass Electrode in Solutions of Silver Nitrate

Radiation data showed that the absorption rate of Ag-ions on (GE) surpasses considerably that of Na-ions. The constant of the exchange reaction $Na^+_{glass} + Ag^+_{sol} = Na^+_{sol} + Ag^+_{glass}$ was computed according to an equation by B. P. Nikol'skiy (Refs 1,24) (Table 2), and is in the order of magnitude of 10^2, which fact points to the considerably higher solidity of the bond Ag^+ glass, as compared to Na^+ glass. On the reaction of glass with aqueous salt solutions, the ion diffusion in the glass plays a major role (Ref 25), which also applies to the present case (Fig 5). In this connection, an initially rapid absorption of the Ag-ions takes place at the glass surface and this "silver layer" diffuses into the glass (Figure 6 diagram of the Ag distribution in the glass). In conclusion, gratitude is expressed to Professor B. P. Nikol'skiy. There are 9 figures, 2 tables, and 26 references, 12 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: October 1, 1957

Card 3/3

S/020/61/140/003/019/020
B103/B101

AUTHORS: Goncharov, V. V., Prokof'yeva, Ye. A., and Shmitt-Fegelevich, S. P.

TITLE: The R_2O_3 phase in roasted chromium spinellides

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 3, 1961, 648-651

TEXT: The authors endeavored to clear up the following problems: a) Is the R_2O_3 phase in the grains of chromium spinellides roasted at 1200 and 1450°C, or should it be considered a solid solution $Fe_2O_3-Cr_2O_3$; b) What is the composition of the R_2O_3 phase, and what are the kinetics of its formation? 1) Saranovskiy and 2) Kempirsayskiy chromium spinellides were tested by roasting between 700 and 1600°C, and differed noticeably in their content of FeO, Cr_2O_3, Al_2O_3, and Fe_2O_3. M. Ye. Borodacheva assisted in analyses. X-ray patterns were taken with a УРС-50И (URS-50I) diffractometer with CuKα radiation. The results are given in Table 1. The R_2O_3 phase was found in the x-ray patterns for the chromium spinellide 1) between 800 and

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The R_2O_3 phase in roasted ...

1500°C, and for 2) between 800 and 1600°C. Below 800°C it is assumed to be x-ray amorphous. The calculated values of $a_{R_2O_3}$ are always considerably lower than those found experimentally. Thus, the method of calculation according to the equation

$$a_{R_2O_3} = \frac{d \cdot \cos\frac{\alpha}{2}}{\sqrt{\sin\frac{\alpha}{2} \cdot \sin\frac{3\alpha}{2}}} \sqrt{(h^2 + k^2 + l^2) - \left(1 - \operatorname{tg}^2\frac{\alpha}{2}\right)(hk - lh - lk)}$$

has proved a failure. Because of these differences and the dimensions of the ionic radii, it is assumed that the Fe_2O_3 content of the R_2O_3 phase is higher than the calculated value. Most likely, the iron oxide formed by oxidation of the FeO in the initial chromium spinellide is part of the residual chromium spinellide up to a ratio of RO : R_2O_3 = 1. It is assumed that RO : Fe_2O_3 in the residual chromium spinellide remains constant at all temperatures. The R_2O_3 (Fe_2O_3, Cr_2O_3, and Al_2O_3) excess over RO (Δm) forms the R_2O_3 phase. Two equations were derived for calculating the

The R_2O_3 phase in roasted ...

content of Cr_2O_3 and Al_2O_3 in the R_2O_3 phase:
$m_{Fe_2O_3} + m_{Cr_2O_3} + m_{Al_2O_3} = \Delta m$; $5.42m_{Fe_2O_3} + 5.35m_{Cr_2O_3} + 5.12m_{Al_2O_3} = a_{R_2O_3}\Delta m$
where $m_{Fe_2O_3}$, $m_{Cr_2O_3}$, $m_{Al_2O_3}$ are the molecular parts of Fe_2O_3, Cr_2O_3, and Al_2O_3 in the R_2O_3 phase. If this system of equations is solved for $m_{Cr_2O_3}$ and $m_{Al_2O_3}$, where $m_{Fe_2O_3} = b$, the composition and quantity of the R_2O_3 phase are obtained. It results from these calculations that the content of Fe_2O_3 in the R_2O_3 phase of the chromium spinellide 1) increases by 2.97% with increasing temperature (800-1500°C). For 2) this increase amounts to 1.32% (800-1600°C). This interrelationship is more strongly pronounced in the case of Al_2O_3: Its content increases by 15.37 and 8.22%, respectively. Cr_2O_3 shows an inverse dependence, since its content decreases with increasing temperature. The yield in R_2O_3 phase between 800 and 1400°C is much larger in 1) than in 2). Composition and quantity of

the R_2O_3 phase in the temperature range, where they can be identified by x-rays, depend on the chemical composition, particularly on the FeO content. There are 3 tables, 6 Soviet and 2 non-Soviet-bloc references. The two references to English-language publications read as follows: G. R. Rigby et al., The Iron and Steel Institute, special Report, no. 32, 43 (1946); J. R. Rait, Ibid., no. 32, 175 (1946).

ASSOCIATION: Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractory Materials)

PRESENTED: April 25, 1961, by V. N. Belov, Academician

SUBMITTED: April 24, 1961

Table 1. Experimental determination of the oxidation of FeO, of the R_2O_3/FeO ratio, and of $a_{R_2O_3}$ of chromium spinellides at 400-1700°C.

Legend: (1) saranovskiy chromium spinellide; (2) kempirsayskiy chromium spinellide; (a) temperature; (b) quantity of oxidized FeO, %; (c) molar ra-

GONCHAROV, V.V., doktor geol. min. nauk [deceased]; SHMITT-FOGELEVICH, S.P., starshiy nauchnyy sotrudnik

Mullite formation in caked clay and commercial alumina. Trudy Inst. ogneup. no.35:73-104 '63. (MIRA 17:12)

VANICHEVA, L.L.; SHMITT-FOGELEVICH, S.P.

Rapid determination of the insoluble residue in clay-alumina cake.
Ogneupory 29 no.10:475-477 '64. (MIRA 18:7)

1. Vsesoyuznyy institut ogneuporov.

GONCHAROV, V.V. [deceased]; SHNITA-FOGELEVICH, S.P.; BORODACHEVA, M. Ye.

Combined method for the determination of the phase composition of high-alumina refractories. Zav. lab. 30 no.6:729-730 '64 (MIRA 17:8)

SHMITTS, Ye., prof.

Cyclodiazomethane. Solution of the classical problem in theoretical chemistry. Zhur. VKHO 7 no.3:343-347 '62. (MIRA 15:6)
(Methane) (Chemical structure)

YATSKEVICH, N.; SHMKOV, V., inzh.-fizik

Work practices in the shipyard laboratory of physical metallurgy.
Mor. flot 24 no.12:33-34 D '64. (MIRA 18:8)

1. Nachal'nik tsentral'ncy laboratorii sudoremontnogo zavoda v Sovetskoy Gavani (for Yatskevich). 2. TSentral'naya laboratoriya sudoremontnogo zavoda v Sovetskoy Gavani (for Shmykov).

1. [illegible]I', I. M.

2. USSR (600)

4. Differential Equations Partial

7. Bounded solutions for a partial differential equation of the second order. Dokl. AN SSSR 89 No. 3, 1953.

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

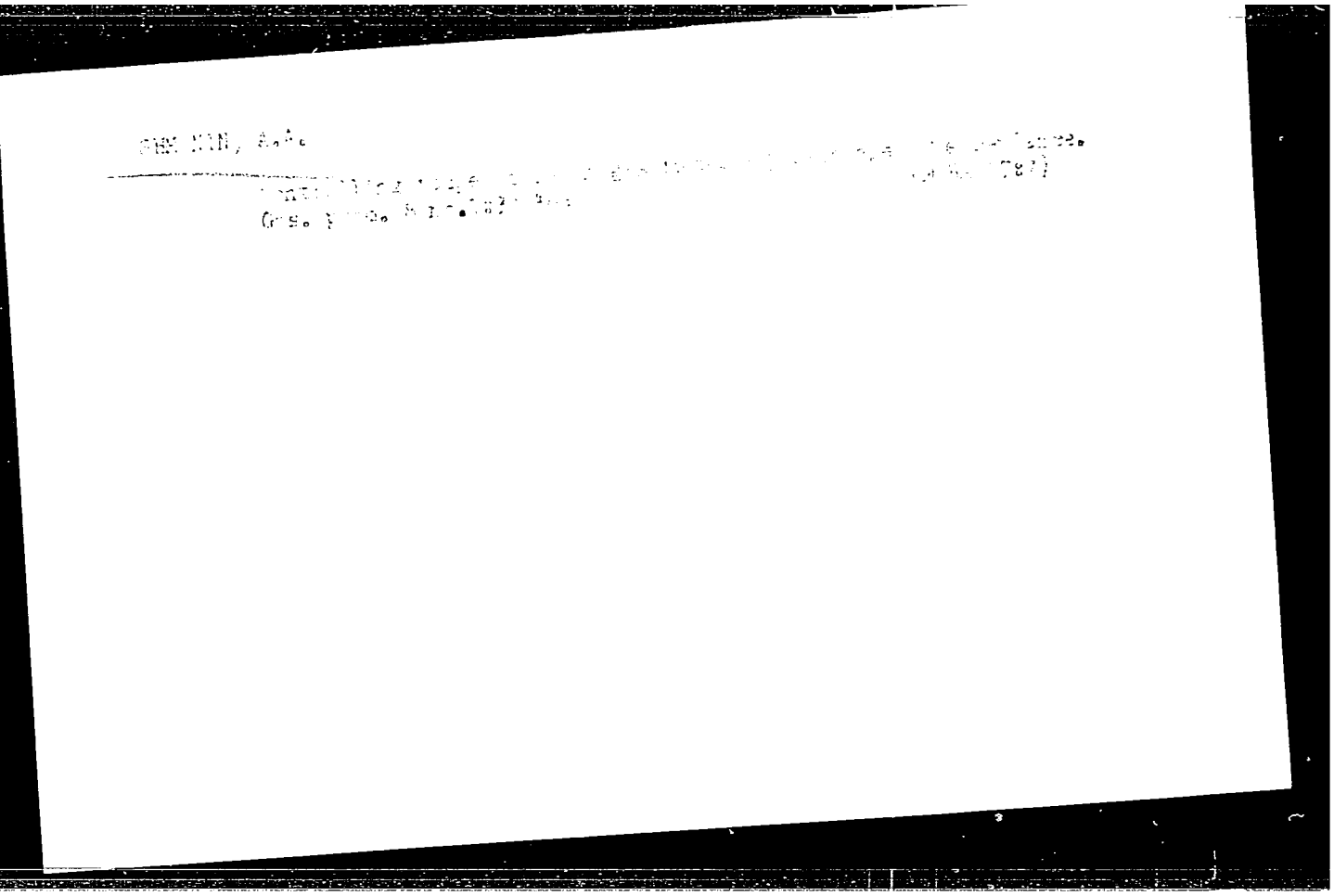
SHMOLIN, I.S.; KARANTBAYVEL', B.I.

Striving for technological progress. Bum.prom. 35 no.12:27-28 D '60. (MIRA 13:12)

(Leningrad Province--Papermaking machinery)

SHMONIN, A.A.

Measuring and regulating temperature in heat-treating furnaces. (MIRA 15:2)
Izm.tekh. no.2:27-28 F '62.
(Heat treating furnaces) (Thermostat)



SIMONIN, B. A.

"Computation of Coal Losses and Methods of Preventing Them in the Outdoor Rebuilding Operations of theSverdlovskugol' Combine." Cand Tech Sci, Sverdlovsk Mining Inst imeni V. V. Vakhrusheyv, Min Higher Education USSR, Sverdlovsk, 1955. (kl, No 17, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions. (16).

KOKUSHKIN, D.P.; FREYDENZON, Ye.Z.; KOMPANIYETS, I.A.; SHMONIN, G.M.; LEBEDEV, A.A.; ZATULOVSKAYA, Ye.Z.; Prinimali uchastiye: DUBROV, N.F.; PASTUKHOV, A.I.; ISAYEV, N.I.; STAROSELETSKIY, M.I.; AKSEL'ROD, L.M.

Improving the quality of a faceted ingot by changing the shape of its side surfaces. Stal' 25 no.7:610-612 Jl '65. (MIRA 18:7)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Nizhne-Tagil'skiy metallurgicheskiy kombinat.

SHMONIN, I.A.

4E2c

Investigations at the Novo-Tagil' Works. V. Smirnov and I. Shmonin. (*Stal'*, 1956, (7), 658–661). [In Russian]. Research work carried out during 1956 at the Novo-Tagil' works is described. The blast-furnace, steel-melting and rolling processes were investigated and the adoption of new techniques facilitated. Metallographic and heat-treatment studies were included.—S. K.

SHMONIN, I.A., inzhener; KLYUCHEROV, A.F., inzhener.

Use of oxygen on an industrial scale in 370 ton open-hearth furnaces. (MLRA 10:9)
Stal' 16 no.12:1076-1079 D '56.

1. Novo-Tagil'skiy metallurgicheskiy zavod.
(Open-hearth furnaces) (Oxygen--Industrial applications)

KLYUCHEROV, A.P.; KONDRAT'YEV, S.N.; Prinimali uchastiye: GUSAROV, F.V.; UDOVENKO, V.G.; PETROV, G.A.; BURKSER, V.Ye.; SHMONIN, I.A.; KUDRIN, Ye.A.; GALAKHMATOV, S.N.; ZIMINA, L.P.; SHISHARIN, B.N.; KONDYURINA, R.V.; BURMISTROV, K.A.; SHIRNIN, I.A.; SIMONENKO, F.N.; GORSHILOV, Yu.V.; KOLPAKOV, B.V.; GUSAROV, A.K.; BOLOTOV, P.G.

Heat insulation of open-hearth furnace crowns. Metallurg 5 no.11: 14-17 N '60. (MIRA 13:10)

1. Nizhe-Tagil'skiy metallurgicheskiy kombinat.
(Open-hearth furnaces--Design and construction)
(Insulation (Heat))

28543 S/133/61/000/007/004/017
A054/A129

18.7530

AUTHORS: Kompaniyets, G. M., Shmonin, I. A., Engineers

TITLE: News in brief

PERIODICAL: Stal', no. 7, 1961, 610

TEXT: 1) In the Nizhne-Tagil'skiy metallurgicheskiy kombinat (Nizhne-Tagil' Metallurgical Plant) tests were carried out to replace ferrochrome by chrome ore in melting rimming steel for roofing sheets. In order to reduce the sticking-together of thin sheets rolled in packs, ferrochrome in an amount to ensure 0.20 - 0.25% Cr in the finished product is added to the bath of Ст2кп (St.2kp) steel. Ferrochrome could suitably be replaced by chrome-containing iron ore from the Saranovo deposit, which is added for 30 - 40 minutes until the end of rimming. Recovery of 20 - 30% Cr from the ore saves 3 rubles per ton; however, melting with ore takes 10 - 13 minutes longer than the conventional process. 2) 09Г2 (09G2) steel was usually deoxidized in the ladle with 18 kg/t electro-manganese and 4 kg/t 75% ferrosilicon. The consumption of rare electro-manganese could be reduced to 8 kg/t by adding a corresponding amount of silico-manganese and 1 kg/t 75% ferrosilicon. When a smaller amount of electro-manganese is added, the manganese may

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News in brief

not be properly distributed over the entire volume of the ladle. 3) The effect of processing iron with nitrogen on the properties of iron was studied. Blowing of nitrogen gas through the iron in the ladle does not noticeably change the mechanical properties of the metal. When the melt is treated with atomic nitrogen, however (blowing ammonia through the bath), the mechanical properties of the metal improve by 40 - 50% and its hardness will increase from 140 to 270 H_B. Instead of dark and coarse-grained, the fracture is bright and compact in its entire cross-section. The amount of graphite inclusions decreases. They become finely crushed and have a turbulent shape.

S/133/61/000/007/016/017
A054/A129

AUTHORS: Kompaniyets, G. M., Shmonin, I. A., Engineers

TITLE: News in brief

PERIODICAL: Stal', no. 7, 1961, 648

TEXT: 1) In the Nizhne-Tagil'skiy metallurgicheskiy kombinat (Nizhne-Tagil' Metallurgical Plant) the mechanical properties and rolling characteristics of three experimental batches of rails were studied. One batch (A) was modified with vanadium, another contained chrome-vanadium (B) and the third batch (C) consisted of Orsk-Khalilovo iron and contained chrome-nickel. The test-rails had the following composition:

	C	Mn	Si	P	S	Cr	Ni	V
				≤	≤			
A	0.55-0.65	0.7-1.0	0.17-0.28	0.035	0.04	-	-	0.15-0.3
B	0.35-0.45	0.7-1.0	0.17-0.28	0.035	0.04	2.5-3.2	-	0.1 -0.2
C	0.65-0.75	0.8-1.1	0.20-0.37	0.040	0.04	0.5-0.6	0.5-0.7	-

The properties of rails "A" correspond with ГОСТ (GOST) 0706-59T (I), but the per-

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News in brief

centage of first-grade product dropped by 2 - 3 compared with the conventional carbon steel rails. With regard to yield point and plasticity "A"-rails were better than the M75 (M75) type. The production of "B"-type rails involved considerable waste; their mechanical properties are similar to those of refined (hardened and annealed) carbon-steel rails, whereas the rails made of steel "C" were not satisfactory; they could not be heated uniformly, had many flaws and their macrostructure was inferior. 2) Industrial-scale tests were carried out in the Nizhne-Tagil' Plant to examine the volumetric hardening of rails. The test equipment consisted of a compartment furnace for rapid heating, fuelled by coke-gas and a mechanized hardening device. The metal was heated to 910° - 960°C, hardening took place at 840° - 880°C in spindle oil with a maximum temperature of 110°C for 4 - 6 minutes; annealing lasted for 6 - 8 hours after hardening with a 2-hour holding time. After this treatment the metal displayed the following properties:

σ_B σ_s δ a_k d_B

115 - 130 kg/mm^2; 75 - 95 kg/mm^2; 7 - 10%; 3 - 5 kgm/cm^2; 3.1 - 3.5 mm

3) A method for producing colored metals was established in the Nizhne-Tagil' Plant. The method of producing components of different colors is based on the oxidation of the metal by the atmospheric oxygen upon heating to 280° - 600°C. During this

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S/133/61/000/007/016/017
A054/A129

News in brief

oxidation period colored films are forming on the polished metal surface. The temperature at which these films appear on the various structural constituents are dependent on the chemical composition of the elements, their physical properties, the orientation of the crystals, etc. The conditions for colored pickling of carbon and alloyed steels have been established.

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KOMPANIYETS, G.M., inzh; SHMONIN, I.A., inzh.

Research at the Nizhniy Tagil Metallurgical Plant. Stal' 22 no.10:891,910,937-938,953 O'62. (MIRA 15:10)
(Nizhniy Tagil--Metallurgical research)

VISHNYOV, G.I., inzh.; RABINOVICH, D.M., inzh.; ORLOVA, N.I., inzh.; SHMONIN, I.A., inzh.; KOMPANIYETS, G.M., inzh.; KONDRAT'YEV, S.N., inzh.; DOSHKINA, N.A., inzh.

Nonmetallic inclusions in rails in various methods of deoxidizing steel. Stal' 25 no.6:557-559 Je '65. (MIRA 18:6)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.