POLISSKIY, N.Ya., inzhener; MALOZHILENKO, V.M., inzhener.

Repairing damaged conical guides of a vertical lathe. Vest.mash. 33 no. 5:77-79 My '53. (MLRA 6:5)
(Lathes)

POLISSKIY, N.Ya., inzhener.

Increasing the life of the TV-type electrical hoists. Vest.mash. 35 no.10:15-17 O '55. (MLRA 9:1)
(Kharkov--Hoisting machinery)

POLISSKIY, N.Ya., inzhener; GONTOVENKO, N.P., inzhener; TAMARIN, L.I., inzhener; CHIRKOV, Ye.V., inzhener; AVRAMENKO, P.S., inzhener.

Mechanization and automation of the varnish insulation section in the line for continuous manufacturing of armatures for direct current machines. Vest.elektroprom. 27 no.11:5-14 N '56. (MLRA 9:12)

1. Kharkovskiy Elektromekhanicheskiy zavod.
(Armatures) (Electric insulators and insulation)
(Automatic control)

AUTHORS: Polisskiy, N.Ya., Gontovenko, N.P. and Tamarin, L.I., (Engineers). 110-7-22/30

TITLE: Modernisation of the control of hydraulic presses for plastics. (Modernizatsiya upravleniya gidropressami dlya plastmass).

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry), Vol.28, No.7, 1957, pp.66-69 (USSR).

ABSTRACT: One method of increasing the output of hydraulic presses is to replace manual by semi-automatic control. The hydraulic circuit of a 100 ton press provided with semi-automatic control is illustrated in Fig.1 which also gives a table of valve positions at different times in the operating cycle. Fig.2 illustrates the construction of a valve the operation of which is based on that of the so-called floating valve. The principles of operation of the valve are described. The operation of the automatic circuit is also described. A special procedure is adopted to slow down the press just before it closes on the tool. The electrical circuit of the equipment is given in Fig.3. With semi-automatic control of the press only two push-buttons are required. All the remaining switching is carried out automatically. The circuit provides reliable

Card 1/2

L 12046-65 EWT(d) IJP(c)

ACCESSION NR: AP5010957 UR/0286/65/000/007/0135/0135

AUTHORS: Polisskiy, Yu. D.; Tsingauz, V. Kh.; Zlobinskiy, V. Ye.; Urin, Yu. L. 14

TITLE: Method for determining the greatest difference of several numbers. Class 42, No. 169890

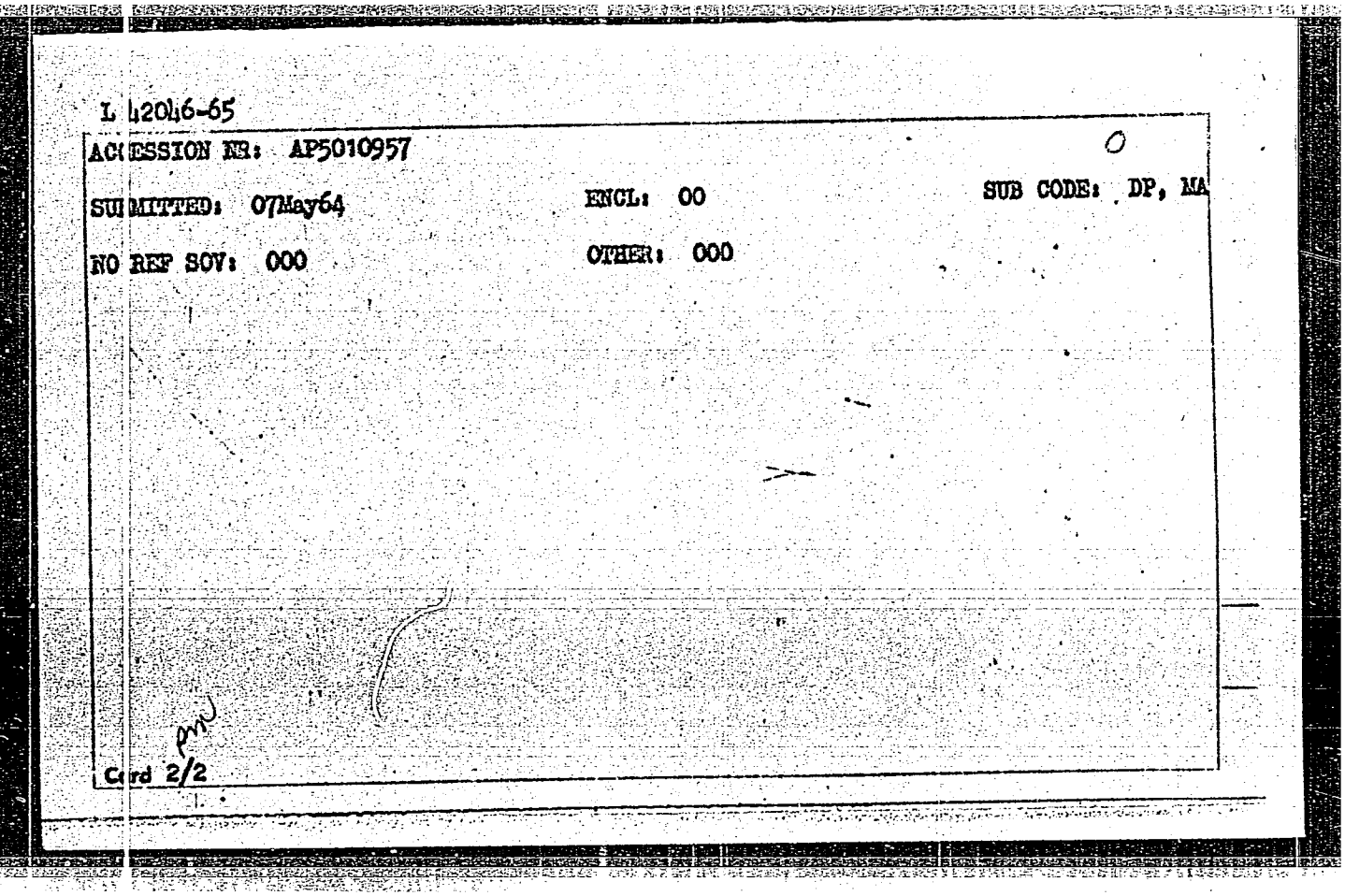
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 135

TOPIC TAGS: numerical analysis

ABSTRACT: This Author Certificate presents a method for determining the greatest difference of several numbers. It uses sequential comparison of the digits in the digital orders beginning with the leading order. To simplify and to speed the derivation of the difference, removal of numbers in the compared orders is produced in the case of their equality. At the first inequality further order comparison ceases, and ones are subtracted from the remaining orders of all the compared numbers until zero is obtained in one of them. Then the number of ones, which were subtracted from the remaining numbers until their equality to zero, is counted.

ASSOCIATION: Dnepropetrovskiy filial instituta avtomatiki Pridneprovskogo sovnarkhoza (Dnepropetrovsk Branch of the Automation Institute of the Pridneprovsk National Economy Council)

Card 1/2



L 42046-65

ACCESSION NR: AP5010957

SUBMITTED: 07May64 ENCL: 00 SUB CODE: DP, MA

NO REF SOV: 000 OTHER: 000

Card 2/2

POLISSKIY, N.Ya

PHASE I BOOK EXPLOITATION SOV/5452

Donskoy, Ya. Ye., G.I. Kardash, and I.P. Lyalyuk, eds.

Mekhanizatsiya i avtomatizatsiya; sbornik stateyob opyte peredovykh mekhanizatsii i avtomatizatsii na Khar'kovskikh mashinostroitel'nykh zavodakh (Mechanization and Automation; Collection of Articles on the Introduction of Mechanization and Automation in Khar'kov Machinery-Manufacturing Plants) [Khar'kov] Khar'kovskoye knizhnoye izd-vo, 1960. 373 p. 3,500 copies printed.

Editorial Board: S.A. Vorob'yev, Candidate of Technical Sciences; Chairman of the Editorial Board: P.I. Zenge, Engineer; A.A. Katlev, Engineer, V.I. Kuznetsov, Engineer; A. Ye. Lesnoy, Docent; A.I. Tupitsyn, Candidate of Technical Sciences, and S.M. Khmara, Candidate of Technical Sciences; Eds.: Ya. Ye. Donskoy, G.I. Kardash, and I.P. Lyalyuk; Tech. Ed.: M.I. Limanova.

PURPOSE: This collection of articles is intended for technical and scientific personnel, outstanding workers, and shock workers of communist labor.

COVERAGE: The multifaceted experience of Khar'kov enterprises in the mechanization, automation, and improvement of manufacturing processes is generalized. The development of new machines, instruments, and promotion methods is considered and attention is given to newly established enterprises, and to the introduction of telemechanics in the Khar'kov gas-system management. By including concrete examples and facts, the authors of the various articles attempt to demonstrate the achievements of the Khar'kov industrial complex in fulfilling the resolutions of the June (1959) and July (1960) Plenums of the Central Committee of the Communist Party of the Soviet Union. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Card 1/8

107-57-4-41/54

AUTHOR: Roytman, V., Engineer, and Polisskiy, V., Engineer (Kiyev)

TITLE: Service Reliability of TV Sets (Ob ekspluatatsionnoy nadezhnosti televizorov)

PERIODICAL: Radio, 1957, Nr 4, p 49 (USSR)

ABSTRACT: New models of TV sets are coming on the market; however, their service reliability receives very little attention. When checked while still in the store, the TV sets showed various defects, the elimination of which would require a laboratory check and alignment. The defects are: sweep non-linearity, twitching of the picture, absence of smooth control of the contrast, presence of white strips dragging behind the dark spots in the picture, multiple outlines, disturbance of the interlaced scanning, diversification of tuning, and ac hum in the sound system. Many TV sets have microphonic effect and sound-signal penetration into the video channel. All such defects should have been eliminated at the factory. Manufacturing plants give a six-months' guarantee on TV sets. This guarantee does not mean faultless operation for six months but, rather, a free repair service for that period. The TV repair shops are inadequate and do not have enough parts in stock. Repairmen rendering home servicing of TV

Card 1/3

L 28822-66 EEC(k)-2/EWA(h)/EWT(1)

ACC NR: AP6007161 SOURCE CODE: UR/0115/65/000/012/0013/0016

AUTHOR: Antonov, V. V.; Polisskiy, Yu. D.; Tsingauz, V. Kh; Grigor'yev, Ye. G.; Belkova, M. M.

ORG: none

TITLE: Some methods for eliminating the error due to sweep nonlinearity in photopulse devices

SOURCE: Izmeritel'naya tekhnika, no. 12, 1965, 13-16

TOPIC TAGS: photoelectric cell, industrial automation, error minimization

ABSTRACT: A photoelectric system of automatic control of rolling-mill-product dimensions is considered; specifically, the error due to nonlinearity of the mechanical sweep of the Π-shaped pulse is analyzed, and these two methods for the error elimination are suggested: (1) Generation of a nonuniform sequence of filling scale pulses by an LC-oscillator; (2) Same, by an RC-oscillator. In the first method, the scale-pulse frequency is calculated by a variable capacitor whose plates are shaped to compensate for the nonlinearity of the sweep. In the second case, the same results are achieved by calculating a luminous flux falling on a photoresistor or by calculating the intensity of a light source. Only the theory of the methods is presented. Orig. art. has: 5 figures and 22 formulas.

SUB CODE: 09,14/ SUBM DATE: none / ORIG REF: 001

Card 1/1 UDC: 621.373.431.2.088:531.71

L 09069-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AT6022715 SOURCE CODE: UR/2848/66/000/041/0311/0315

AUTHORS: Polistanskiy, Yu. G.; Zhemchuzhina, Ye. A.; Baturlin, A. I. 12

ORG: Moscow Institute for Steel and Alloys, Department for Manufacture of Pure Metals and Semiconductor Materials (Moskovskiy institut stali i splavov, Kafedra proizvodstva chistykh metallov i poluprovodnikovykh materialov)

TITLE: Synthesis and alloying of lead telluride

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 311-315

TOPIC TAGS: lead containing alloy, tellurium containing alloy, sodium containing alloy, semiconductivity

ABSTRACT: The synthesis of lead telluride was carried out by four different methods: a) heating a stoichiometric mixture of Pb and Te in quartz ampules at 900C for 30 min; b) heating a mixture of Pb and Te at 950C for 20 min (15% excess of Te over the stoichiometric composition) in the presence of B_2O_3 flux; c) heating a mixture of Pb and Te at 950C for 20 min (5.5% excess Te) in the presence of NaCl flux, and d) heating a mixture of Pb and Te at 950C for 20 min (5.5% excess Te) in the presence of NaCl - Na_2CO_3 eutectic mixture as flux. The thermal emf and electrical conductivity of each product obtained by the different synthetic methods are tabulated. In addition, the properties of the "P" type conductor obtained by introducing Na into

Card 1/2

ACC NR: AT6022715

PbTe were studied. The Na was introduced into the PbTe either directly, in the elemental state, or in form of lead-sodium amalgam. The experimental results are presented in graphs and tables (see Fig. 1). The experimental results confirm

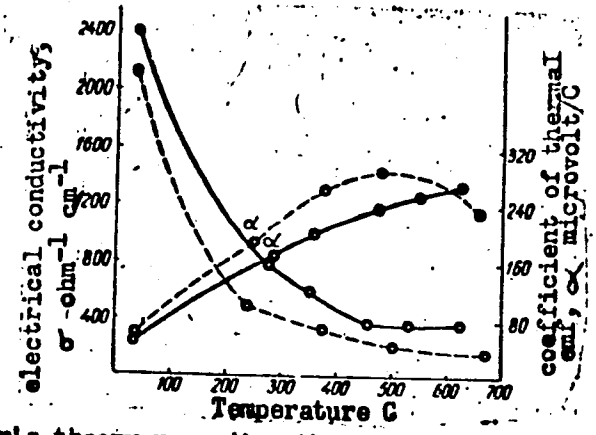


Fig. 1. Temperature dependence of the thermal emf coefficient and specific conductivity of lead telluride "p" type conductor (sodium content in the lead telluride equals 0.1 wt %).

Wagner's theory regarding the mechanism for the sodium addition to PbTe (Sb. Termoelektricheskiye materialy i preobrazovateli, Izd-vo Mir, 1964). Orig. art. has: 1 table, 1 graph, and 2 equations.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 001

Card 2/2 nst

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

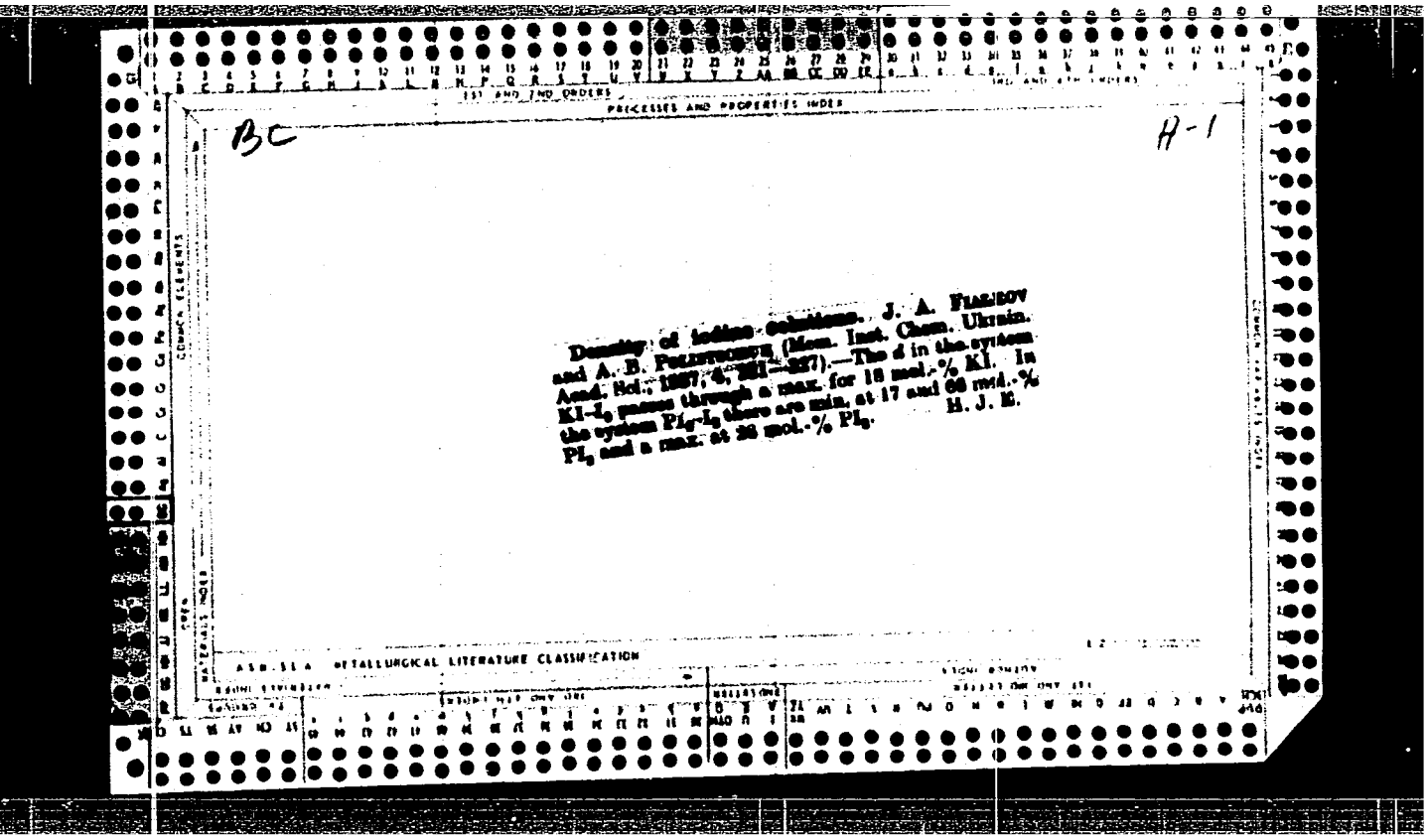
L 16447-65
ACCESSION NR: AP4042038

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



POLISYUK, E.P., inzhener.

Drying foundry moulds with infrared rays. Lit. proizv. no.2:1 F '57. (MLRA 10:4)
(Molding (Founding)) (Infrared rays—Industrial applications)

POLISYUK, M.

Brigade of public designers. NTO no.11:42 N '59.
(MIRA 13:4)

1. Zaveduyushchiy otdelom redaktsii gazety "Ural'skiy rabochiy, "Sverdlovsk."
(Sverdlovsk—Technological innovations)

POLISYUK, M. (g.Sverdlovsk)

Initiative of Ural engineers. NTO 3 no.3:45-46 Mr '61.
(MIRA 14:3)
(Sverdlvosk--Machinery industry--Technological innovations)

WOJTOWICZ, W. [Wojtowicz, W.]; POLITAŃSKA, U. [Politańska, U.]; POBAWSKI, P. [Porawski, E.]; [illegible]

Ferromagnetic phases in the products of nickel ferricyanide thermal decomposition. Zhur.neorg.khim. 10 no.12:2693-2697 D '65. (MIRA 19:1)

1. Universitet imeni I.Mitskevicha, Laboratoriya magnitokhimii, Poznan', Pol'sha.

VOL'SKI, V. [Wolski, W.]; POLITAN'SKA, U. [Politanska, U.]

Ferromagnetic properties of a product obtained by boiling nickel hydroxide gels and iron. Zhur.prikl.khim. 38 no.3:667-668 Mr '65. (MIRA 18:11)

1. Laboratoriya magnitokhimii universiteta imeni Adama Mitskevicha, Poznan'. Submitted June 29, 1964.

L 6382-66 EPA/EWT(1)/EWT(m)/FA/ETC/EWP(f)/FA(b)/EWT(m)/T-2 JD

ACC NR: AP5026824 SOURCE CODE: UR/0286/65/000/017/0102/0102

INVENTOR: Segal', L. M.; Politanskiy, G. M.

TITLE: Hydraulic decelerator for fuel feed control system in a turbojet engine. Class 46, No. 174471 [Announced by the Organization of the State Committee on Aviation Technology, SSSR (Organizatsiya gosudarstvennogo komiteta po aviatsionnoy tekhnike SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 102

TOPIC TAGS: turbojet engine, hydraulic decelerator, aircraft fuel system

ABSTRACT: An Author Certificate has been issued for a hydraulic decelerator (see Fig. 1) of a turbojet-engine fuel-feed control system, which receives signals from the control stick and the fuel-feed limiter. The decelerator contains a piston servo-drive with a spring-loaded rod. The displacement of the control stick moves this rod within

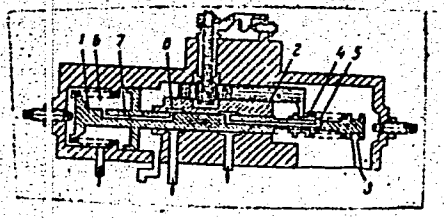


Fig. 1. Hydraulic decelerator

1 - Spring-loaded rod; 2 - guide sleeve; 3 - transmitting mechanism; 4 - damper; 5 - exit opening of piston-rod duct; 6 - working cavity of the cylinder; 7 - auxiliary duct; 8 - annular groove.

Card 1/2 UDC: 621.438-541.4

Card 2/2

POLITKIN, F.N.

AUTHOR: Politkin, F.N., Candidate of Historical Sciences 5-10-6/30

TITLE: Connect Each Seminar With Educational Problems (Kazhdyy seminar svyazat' s zadachami vospitaniya)

PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 10, pp 27-32 (USSR)

ABSTRACT: The author states that the study of the Party history in seminars and discussions must be conducted in such a manner that the students will not only be able to understand historical events but also to evaluate actual facts. The teacher must encourage the students to ask questions on the causes, the social importance and the trends of certain events. He then gives examples of methods of treating such events as the Kronstadt Revolt in 1921, or the events in Hungary in 1956, such policies as peaceful co-existence, workers' council growth (as in Yugoslavia, Hungary, Poland), the recent Malenkov, Kaganovich, Molotov apostasy, etc.

He concludes that it is difficult for the students to select the actual facts on the subject; that this is the task of the teacher. He then suggests establishing a list of complementary literature.

There are 11 Russian references.

Card 1/2

POLIT'KO, G. G.

"The Problem of the Nature of Pavlov's Inhibition Process." Cand Biol Sci, Kishinev State U, Kishinev, 1953. (RZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

POLIT'KO, O.G. [Polit'ko, O.H.]

Effect of the subdural administration of insulin and adrenaline on the functional state of the cerebral cortex. Dop.AN URSR no.7:960-964 '60. (MIRA 13:8)

1. Gomel'skiy pedagogicheskiy institut. Predstavleno akademikom AN USSR Ye.B.Babskim [Ye.B.Babs'kym].
(INSULIN) (ADRENALINE) (CEREBRAL CORTEX)

POLIT'KO, O.G. [Polit'ko, O.H.]

Effect on the functional state of the brain of the subdural administration of agents which eliminate respiratory phosphorylation and glycosis. Dop.AN URSR no.8:1115-1119 '60. (MIRA 13:9)

1. Gomel'skiy pedagogicheskiy institut. Predstavleno akademikom AN USSR Ye.B..Babskim.
(BRAIN) (PHENOL) (ACETIC ACID)

POLIT'KO, O.G. [Polit'ko, O. H.]

Effect of 2,4-dinitrophenol and monoiocoacetic acid on the functional state of the spinal cord. Dop.AN URSR no.4:526-530 '61. (MIRA 14:6)

1. Gomel'skiy pedagogicheskiy institut. Predstavleno akademikom AN USSR Ye. B. Babskim.
(ACETIC ACID—PHYSIOLOGICAL EFFECT)
(SPINAL CORD)
(2,4-D)

POLIT'KO, O.G. [Polit'ko, O.H.]

Effect of adrenalin on the functional state of the spinal cord. Dop. AN URSR no.9:1235-1239 '61. (MIRA 14:11)

1. Gomel'skiy pedagogicheskiy institut. Predstavleno akademikom AN USSR Ye.B.Babskim [Babs'kyi, IE.B.].
(SPINAL CORD)
(ADRENALIN)

BRIL', A. (g.Gornyak, USSR); POLITKO, V. (g.Temur-Tau, Kazakhskaya SSR)

Repaired by amateurs. Radio no.12:30 D '61. (MIRA 14:12)
(Television--Repairing)

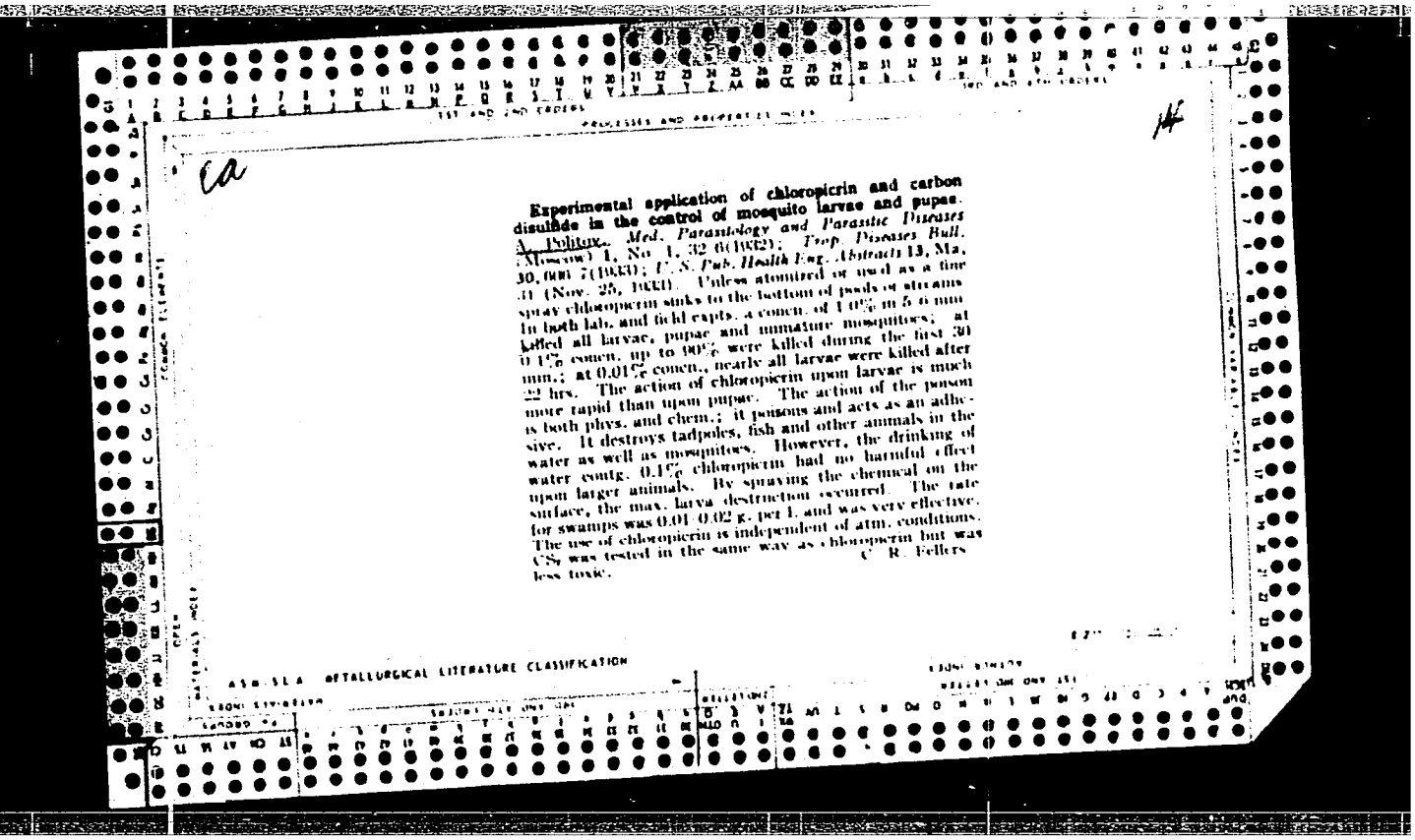
GENKIN, B.S.; POLITIKOV, M.I.; UDMADTURIDZE, V.A.

Practice of using radiogeodetic measurements in large-scale airborne geophysical surveys. Razved. i prom. geofiz. no.47: 72-78 '63. (MIRA 16:8)
(Radio in surveying) (Aeronautics in surveying)

POLITKOVSKAYA, N.V., kand.tekhn.nauk

Investigating properties of sludge while using the electrolytic method in sewage purification; its processing and use. Trudy GISI no.25: 191-209 '56. (MIRA 11:5)

(Sewage--Purification)
(Water--Electrolysis)



Experimental application of chloropicrin and carbon disulfide in the control of mosquito larvae and pupae. A. Politov. *Med. Parasitology and Parasitic Diseases* (Moscow) 1, No. 1, 32-6(1932); *Trop. Diseases Bull.* 30, 1007(1933); *U.S. Pub. Health Eng. Abstracts* 13, No. 11 (Nov. 25, 1933). Unless atomized or used as a fine spray chloropicrin sinks to the bottom of pools or streams. In both lab. and field expts. a concn. of 1.0% in 5 to 10 min. killed all larvae, pupae and immature mosquitoes; at 0.1% concn. up to 90% were killed during the first 30 min.; at 0.01% concn., nearly all larvae were killed after 22 hrs. The action of chloropicrin upon larvae is much more rapid than upon pupae. The action of the poison is both phys. and chem.; it poisons and acts as an adhesive. It destroys tadpoles, fish and other animals in the water as well as mosquitoes. However, the drinking of water contg. 0.1% chloropicrin had no harmful effect upon larger animals. By spraying the chemical on the surface, the max. larva destruction occurred. The rate for swamps was 0.01-0.02 g. per l. and was very effective. The use of chloropicrin is independent of atm. conditions. CS_2 was tested in the same way as chloropicrin but was less toxic.

C. R. Fellers

POLITOV, A.A., kand. tekhn. nauk, dots.; SOLOV'YEVA, N.P., red.; NIKOL'SKAYA, K.G., tekhn. red.

[Diesel locomotive engines] Teplovoznye dvigateli; uchebnoe posobie dlia studentov V kursa spetsial'nosti "Teplovozy i teplovoznoe khoziaistvo." Moskva, Vses. zaochnyi in-t inzhenerov zhel-dor. transporta, 1962. 242 p. (MIRA 16:5)
(Diesel locomotives) (Gas and oil engines)

POLITOV, A. A. PA 4T44

USSR/Fuels, Diesel Apr 1947
Gas, producer

"Operation of Diesel Engine Compressors on Producer Gas without Liquid Fuel," A. A. Politov, 5 pp

"Za Ekonomiyu Topliva" Vol IV, No 4

Full operation with schematic diagrams, followed by detailed directions on how to operate the engine by subject method

4T44

POLITOV, A.A., kandidat tekhnicheskikh nauk.

Increasing the work efficiency of the gas generator diesel locomotive engine. Zhel.dor.transp. 38 no.10:78-80 O '56. (MLRA 9:11)
(Diesel locomotives)

EL'YASHEVA, M.A.; POLITOV, A.I.

Automatic device on hydraulic machines for cyclic-static load tests.
Zav. lab. 23 no.6:741-742 Je '57. (MLRA 10:8)
(Testing machines) (Automatic control)

POLITOV, A.K.

Synanthropic flies in the city of Groznyy. Med. paraz. i paraz. bol. 34 no.2:210-215 Mr-Ap '65. (MIRA 18:11)

1. Groznenskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya.

POLITOV, A.K.

Case of the prolonged starvation of ticks. Priroda 52 no.7:117 Jl '63. (MIRA 16:8)

1. Groznenskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya.
(Ticks)

POLITOV, A.K.

Entomological exhibition in Groznyy. Zool.zhur. 39 no.3:479-480 '60. (MIRA 13:6)

1. Groznenskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya.
(Groznyy--Entomology--Exhibitions)

POLITOV, A.K.

Types of insect pests in food stocks. Vop. pit. 21 no.2:88 Mr-Ap '62. (MIRA 15:3)

1. Iz Groznenskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

(INSECTS IN FOOD)

POLITOV, A.K.

Materials for the study of leptospirosis incidence in Groznyy in Chechen-Ingush A.S.S.R. Zhur. mikrobiol., epid. i immun. 40 no.11:145 N '63. (MIRA 17:12)

KERVALIDZE, A.D.; POLITOV, A.K.

Readers' letters. Zashch. rast. ot vred. i bol. 6 no.9:14 S '61. (MIRA 16:5)

1. Starshiy agronom Rostovskogo otryada po bor've s vreditelyami i boleznyami rasteniy (for Kervalidze). 2. Gorodskaya sanitarno-epidemiologicheskaya stantsiya, Groznyy (for Politov).
(Plants, Protection of)

POLITOV, A. K., entomolog

The millet beetle Pardileus calceatus Duft. Zashch. rast. ot vred. i bol. 6 no.6:44-45 Je '61. (MIRA 16:4)

1. Groznenskaya sanitarno-epidemiologicheskaya stantsiya.

(Chechen-Ingush A.S.S.R.—Ground beetles—Extermination)
(Chechen-Ingush A.S.S.R.—Grain—Diseases and pests)

BERISHVILI, I.M., kand.sel'skokhoz.nauk; AKHVLEDIANI, Ye.N., aspirantka; PODARYASHCHIY, A.S., agronom; POLITOV, A.K., entomolog (Groznyy); SELIN, I.V., starshiy nauchnyy sotrudnik; BUGROVA, T.I.; POPOVA, K.N.; KOVALEV, N.V., kand.sel'skokhoz.nauk; NASIROV, A.

Brief information. Zashch. rast. ot vred. i bol. 8 no.11:56-58 N '63. (MIRA 17:3)

1. Gruzinskiy institut zashchity rasteniy (for Berishvili, Akhvlediani). 2. Opytnoye khozyaystvo "Boyevik", g. Novozybkov, Bryanskoy obl. (for Podaryashchiy). 3. Smolenskaya oblastnaya sel'skokhozyaystvennaya opytnaya stantsiya (for Selin). 4. Punkt sluzhby ucheta i prognozov, g.Kurgan-Tyube, Tadzhikskoy SSR (for Bugrova, Popova). 5. Maykopskaya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta rasteniyevodstva (for Kovalev). 6. Uzbekskiy institut zashchity rasteniy, Tashkent (for Nasirov).

POLITOV, A. K., entomolog; YERINA, K. M., entomolog

Ground beetles as grain crop pests in the Chechen-Ingush A.S.S.R. Zashch. rast. ot vred. i bol. 5 no.6:29 Je '60. (MIRA 16:1)

(Chechen-Ingush A.S.S.R.—Grain—Diseases and pests)
(Chechen-Ingush A.S.S.R.—Ground beetles)

POLITOV, A.K., entomolog

Concerning N.A. Skavinskii's article, "Granary pests of foodstuffs in Baranovichi and the species present." Gig. i san. 26 no.7:109 Jl '61. (MIRA 15:6)

1. Groznenskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya.

(GRAIN--DISEASES AND PESTS)
(SKAVINSKII, N.A.)

FOLITOV, A.K.

Nidus of scorpions in a city. Priroda 51 no.11:119 N '62.
(MIRA 15:11)

1. Groznenskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya.

(Groznyy--Scorpions)

POLITOV, A.K.

Fly control in the campaign for municipal cleanness. Gig. i san. 26 no.4:64-65 Ap '61. (MIRA 15:5)

1. Iz Grozenskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(FLIES--EXTERMINATION)

POLITOV, A.K., entomolog

Use of herbicides for malaria control purposes. Gig. i san. 26 no.6:79-80 Je '61. (MIRA 15:5)

1. Iz Groznenskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(GROZNYY--MALARIA--PREVENTION) (HERBICIDES)

POLITOV, A.P.

This is only the start. Izobr. i rats. no.9:7-8 S '58.
(MIRA 11:10)

1. Predsedatel' Tul'skogo oblastnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov.
(Tula Province--Efficiency, Industrial)

POLITOV, D. A.

"The Effectiveness of Applying Crushed Lime to Field-Meadow Rotation Crops During Cultivation of Lucerne and Timothy Grass Mixtures." Cand Agr Sci, All-Union Sci-Res Inst of Fertilizers, Agricultural Engineering, and Soil Science, Moscow, 1954. (RZhKhim, No 22, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

KOMYAGIN, Aleksandr Mikhaylovich; KOLITOV, Gennadiy Aleksandrovich; LEVITSKIY, A.L., inzh., red.

[Safety measures in the operation of diesel locomotives] Tekhnika bezopasnosti pri obsluzhivanii teplovozov. Moskva, Transport, 1964. 49 p. (MIRA 18:3)

POLITOV, G.I., dotsent

Variations of the arteries of the arm and forearm. Khirurgiia 40 no.11:92-98 N '65. (MIRA 18:7)

1. Nauchno-issledovatel'skaya laboratoriya (dir. - dotsent B.N. Uskov) Ministerstva zdravookhraneniya SSSR i otdel anatomii (Zav. - doktor med. nauk Yu.M.Lopukhin), Moskva.

POLITOV, G.I.

Projection anatomy of the surface of the volar arch. Arkh. anat., Moskva 30 no.2:67-77 Mar-Apr 1953. (CIML 24:3)

1. Of the Department of Normal Anatomy (Head -- Honored Worker in Science Prof. M. F. Ivanitskiy), Moscow Medical Institute of the Ministry of Public Health RSFSR, now Ryazan' Medical Institute imeni I.P. Pavlov.

POLITOV, Igor' Vladimirovich; KUZNETSOV, Nikolay Antonovich; KUR'YANOVA, O.V., red.; GLAZOV, G.A., prof., rec.

[Vibratory machining of parts for machines and instruments] Vibratsionnaia obrabotka detalei mashin i priborov. Leningrad, Lenizdat, 1965. 124 p. (MIRA 18:10)

POLITOV, I.V.; SHAPIRO, L.M.

Removing fins on die castings by vibration treatment. Lit. proizv. no.12:10-11 D '64. (MIRA 18:3)

POLITOV, L. N. (Engineer)

L. N. Politov of the NITI (expansion?) wrote an article entitled "Automatization of Universal Machine Tools", pages 184-196 of the book entitled AUTOMATIZATION OF TECHNOLOGICAL PROCESSES (Avtomatizatsiya tekhnologicheskikh protsessov) by ALL-UNION MECHANICAL ENGINEERS SCIENTIFIC AND TECHNICAL SOCIETY MOSCOW SECTION (Vsesoyuznoe nauchnoe inzhenerno-tekhnicheskoe obschestvo mashinostroiteley. Moskovskoe Otdelenie.)

SO: A.I.D., Library of Congress (Call No.: TA165.V8)

(1) POLITOV, N G

Secondary currents in colored potassium chloride crystals. N. P. Kalaitukliov and N. G. Politov (Akad. Nauk Gruz. S.S.R., Tiflis). *Doklady Akad. Nauk S.S.S.R.* **70**, 805–8(1950).—The intensity i of the dark current flowing 1 sec. after turning off the simultaneous 10-sec. illumination and application of an external elec. field to a colored KCl crystal, and short circuiting the crystal, increases regularly with the temp. from 50° to about 100°, where the curve has a short horizontal step, then increases further to a max. at about 120°, decreases to a min. at about 135°, passes through a 2nd max. at 150° and then decreases. A curve of exactly the same shape, but with somewhat lower i, is obtained with colored crystals exposed only to the elec. field, not illuminated. With a transparent colorless crystal, i appears only above 120°, and from then on simply increases with rising temp. This current is evidently ionic, whereas the dark current appearing below 120° can be only electronic. The elec. trons are supplied by dissocn. of neg. K_2^- mols. formed in the coloring process, according to $K_2^- \rightarrow K + K + e^-$. Along the ascending branch of the i curve, the elec. cond. can be expressed by $\sigma = \sigma_0 e^{-B/T}$. The straight line log i $(1/T)$ has a break at about 100°; below 100°, B = 3600 cal. = 0.48 e.v., and above 100°, B = 2700 cal. = 0.35 e.v. These 2 activation energies correspond to the 2 consecutive steps $K_2^- \rightarrow K + K^-$ and $K^- \rightarrow K + e^-$, with the resp. dissocn. energies of 0.48 and 0.35 e.v. The fall of i beyond the max. at 120° is due to increased dissipation of the space charge, which is presumed to be due to de Boer-type F centers located at the surface. The max. at 155° corresponds to dissocn. of at. color centers. The fact that, above 155°, i is lower for colored crystals than for colorless crystals, is the result of counteraction of the field of the ionic space charge by that of the electronic space charge.

N. Thon

1. POLITOV, N. G.

2. USSR 600

4. Potassium Chloride

7. Movement of elections in the stained crystals of KCl, Soob. AN Gruz. SSSR, 12, No. 7, 1951.

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

POLITOV, N. G.

"Color Centers in Crystals KCl and KCl-Ag and the Effect of Co^{60} Gamma-Rays on the Processes of Their Formation," by N. G. Politov, Institute of Physics, Academy of Sciences Georgian SSR, Soobshch. AN GruzSSR, 1955, 16, No 7, pp 517-523 (from Referativnyy Zhurnal -- Fizika, No 1, Jan 57, Abstract 2320)

The absorption spectrum (at 293°K) of noncolored single crystals KCl-Ag (0.02 mol%) reveals bands at 220, 230, and 245 mμ. Irradiation by Co^{60} gamma-rays creates weak bands at 290 and 440 mμ and an intensive F-band at 565 mμ. An additive coloring in K vapors at a temperature not over 500°C creates intensive bands at 290 mμ. The crystal gets yellow, and under further irradiation, violet. Bands at 440 and 465 mμ the author identifies as K-band of KCl. The relative intensity of F- and K- bands depends on the method of coloring, and therefore, the K-band cannot occur by electron transit to F-centers in higher excited states. The author attributes it to alkali metal particles in the lattice of KCl. The crystals KCl-Ag reveal some distortions of the lattice. The position of the K-band does not depend on temperature. (U)

Sum in 1451

POLITOV, N. G.

Name: POLITOV, N. G.

Dissertation: Centers of coloring and semiconductor properties of potassium chloride crystals

Degree: Cand Phys-Math Sci

Defended at: ~~Affiliation:~~ Tiflis State U imeni I. V. Stalin

Publication ~~Defense Date~~, Place: 1956, Tiflis

Source: Knizhnaya Letopis', No 2, 1957

POLITOV, N.G.

PA - 2589

AUTHOR POLITOV, N.G.

TITLE The Centres of Colouring in Crystals KCl and KCl with Admixture Ag. (Tsentry okrashivaniya y kristallakh KCl i KCl s primes'yu Ag. Russian)

PERIODICAL Radiotekhnika i Elektronika, 1957, Vol 2, Nr 3, pp 291-295 (U.S.S.R.)
Received 5/1957 Reviewed 6/1957

ABSTRACT

Lecture delivered at the All Union Conference for Semiconductors in November 1955 at Leningrad. The most intense stripes of additional absorption have their maxima at wavelengths of 450 and 290 m. The first absorption stripe has its maximum at wavelengths of 440 or 465 m. This is connected with superposition by absorption curves of the new stripes and the F-stripe. The stripe of additonal absorption has its maximum at a wavelength of 465 m. If the F-stripe is lacking the maximum is at 440m. Between the F-stripe and the short-wave side an absorption with a maximum at 465 nm was observed if an F-stripe existed and at 440nm if the F-stripe was lacking. The author identifies the absorption stripe in the case of a wavelength of 440 nm with that of K in colored KCl crystals. If yellow crystals are irradiated with X-rays a strong F-stripe appears, and with it the stripe grows considerably with the maximum at a wavelength of 440 nm. On this occasion the crystal turns violet. It was found as a result o f these experiments that on the shortwave side a considerable stripe is obtained with respect to the F-stripe (K-stripe) also in KCl crystals without an admixture of Ag. This is the case if the KCl crystals are electrolytically colored at 500° C and if, at the same time, they are illuminated with visible light. The K-stripe then has its maximum at the wavelength of 465 nm.

Card 1/2

GACHECHILADZE, A.I.; POLITOV, N.G.

Color centers in alkali halide crystals. Trudy Inst.fiz.AN Gruz. SSR 6:43-52 '58. (MIRA 15:4)
(Alkali metal halide crystals) (Color centers)

S/749/60/007/0[illegible]

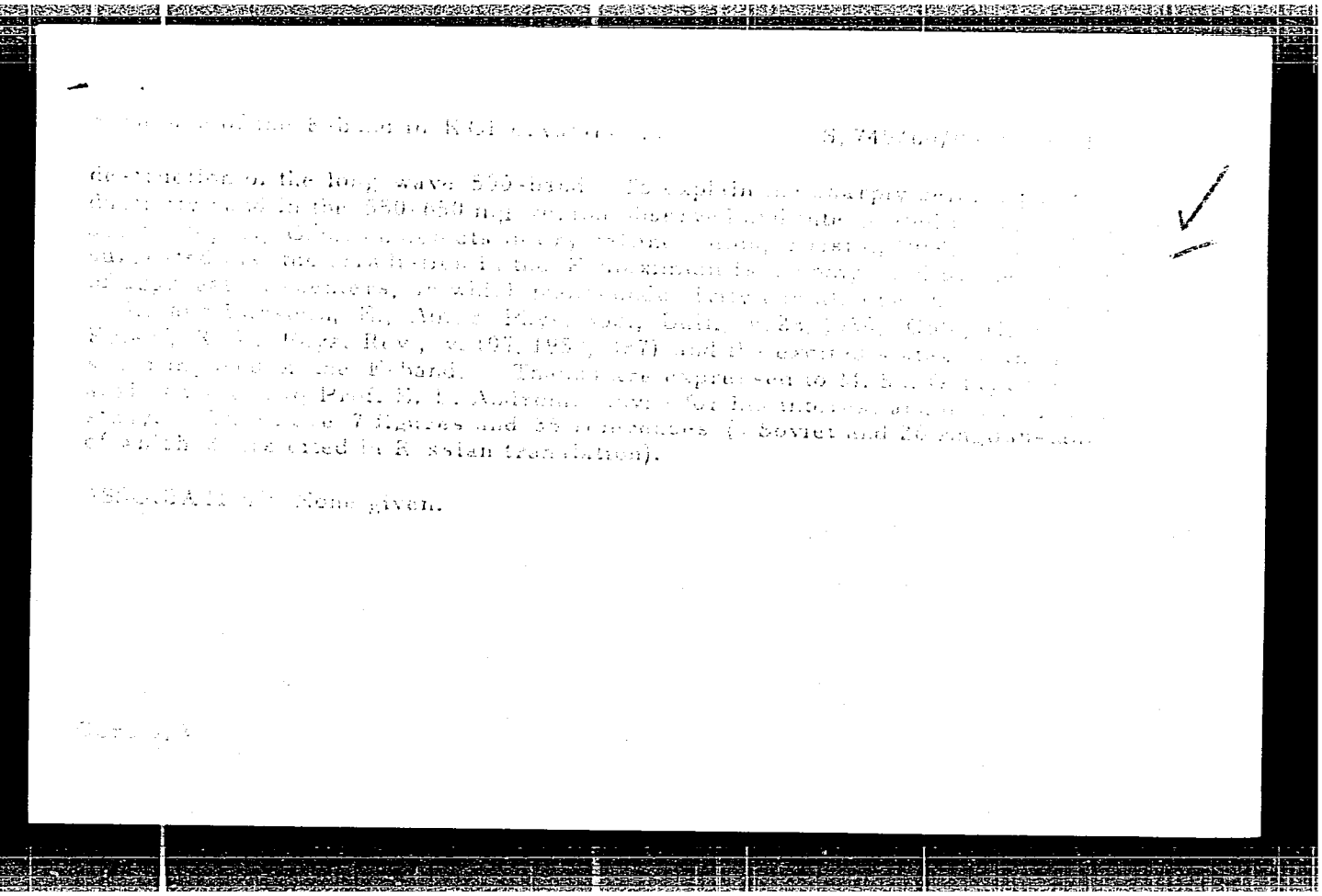
AUTHOR: Politov, N. G.

TITLE: Structure of the F-band in KCl crystals.

SOURCE: Akademiya nauk Gruzinskoy SSR. Institut fiziki. Trudy, v. 7, 1960, 221-230 (In Russian).

TEXT: An experimental and theoretical investigation of the optical absorption spectra and the phosphorescence spectra of colored KCl crystals was carried out to determine whether the F-absorption-band is elementary (as per Seitz, F., Rev. Mod. Phys., v. 26, 1954, 7). It was found that the F-band, actually, is the result of a superposition of several bands. A bri[illegible] summary of the state of the art [illegible] the view of the F-band as an elementary band, which has recently been modified [illegible] findings of an A- and B-band superimposed thereon and the limitation of a [illegible] F-band in KCl to temperatures below 190°K. The hypothesis of the new bands as not emanating from the F-centers, but as caused by transitions in M- and R-[illegible] (Van Doorn, C. Z., Phil. Res. Rep., v. 12, 1957, 309), the hypothesis of the new bands as caused by new centers or by an F-center in the vicinity of which there is one of the hole-type V-centers or a cation vacancy (Bohun, A., Acta Phys. Hung., v. 8, 1957, 65), and several other views are examined to illustrate the complexity [illegible]

Card 1/3



ACCESSION NR: AT4016309 S/0000/62/000/000/0284/0286

AUTHOR: Andronikashvili, E.L.; Politov, N.G.; Getiya, M. Sh.

TITLE: Radiation generation of dislocations in alkali halide crystals

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy*. Fiz. shchelochnogaloidn. kristallov (Physics of alkali halide crystals). Riga, 1962, 284-286, plus 3 pages of illustrations following p. 286

TOPIC TAGS: alkali halide crystal, radiation defect, neutron irradiation, radiation, crystallography, crystal physical property

ABSTRACT: Glacial acetic acid saturated with zinc ions and water, respectively, were used for etching KCl and LiF monocrystals in a study of the effect of radiation on the dislocation density in the crystals. A RUP-200-20-4 emitter was used for the x-raying. The neutron-irradiation was effected at a thermal power of 1000 kw with a $1.03 \cdot 10^{12}$ neutron/cm^2.sec thermal neutron flow on the IRT-200 nuglear reactor of the Institut fiziki AN Gruzinskoy SSR (Physics Institute of the Georgian Academy of Sciences). Ten-hour x-ray tests were found to produce no effect on the dislocation density in the crystals, and only after 2 1/4 hrs. of neutron irradiation could the appearance of new con-

Card 1/2

ACCESSION NR: AT4016310 S/0000/62/000/000/0287/0303

AUTHOR: Andronikashvili, E.L.; Politov, N.G.; Mumladze, V.V.; Vorozheykina, L.F

TITLE: Plasticity and thermal conductivity of defective alkali halide crystals

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy* Fiz. shchelochnogaloidn. kristallov (Physics of alkali halide crystals). Riga, 1962, 287-303

TOPIC TAGS: alkali halide crystal, plasticity, thermal conductivity, F-center, reactor radiation, crystallography, radiation defect, crystal physical property, hardness

ABSTRACT: In an extension of the authors' previous work, the influence of F-centers on plasticity and the influence of reactor radiation on plasticity and thermal conductivity were examined in Kcl crystals. The influence of reactor radiation on plasticity was also examined in LiF crystals. F-centers were produced by x-raying in a RUP-200-20-4 unit and an IRT-200 reactor was used for neutron and gamma radiations. Hardness was measured by the scratching and the pendulum swing damping methods. Optical absorption spectra were measur-

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ACCESSION NR: AT4016310

ed with an SF-4 spectrophotometer and an assembly, based on the principles of A.V. Ioffe and A.F. Ioffe and constructed in the authors' laboratory, was used for the determination of thermal conductivity. This method was applicable at close-to-room temperatures and, in a 5 minute procedure, produced results with an accuracy of 3-5 per cent. At least one hundred samples were examined. Curves for the dependence of hardness on the duration of x-raying and the concentration of F-centers showed a steady growth of plasticity of KCl crystals for the duration of x-raying, accompanied by the accumulation of F-centers. Under the influence of reactor radiation KCl crystals showed an initial growth of microhardness, which ceases when a dose of $\sim 10^{16}$ neutron/cm^2 is reached. In contrast, the resistance to plastic deformation and mechanical strength continued to grow in LiF crystals. The thermal conductivity of KCl crystals under reactor radiation followed a complex pattern, showing an initial decrease, followed by an increase as radiation continued. Orig. art. has: 11 figures.

ASSOCIATION: Institut fiziki AN Gruzinskoy SSR (Institute of Physics, Academy of Sciences of the Georgian SSR)

Card 2/3

ACCESSION NR: AT4016310

SUBMITTED: 00 DATE ACQ: 06Mar64 ENCL: 00

SUB CODE: GP NO REF SOV: 010 OTHER: 013

Card 3/3

POLITOV, N.G.

Complex nature of the F-band in KCl crystals. Opt. i spektr. 10 no.2:173-176 F '61. (MIRA 14:2)
(Potassium chloride crystals—Spectra)

POLITOV, N. G.

90

PHASE I BOOK EXPLOITATION

SOV/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences USSR, Resp. Ed.

Deystviye yadernykh izlucheniy na materialy (The Effect of Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR, 1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A. Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov, B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk, Yu. I. Pokrovskiy, and N. F. Pravdyuk; Ed. of Publishing House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and I. N. Dorokhina.

Card 1/14

9C

The Effect of Nuclear Radiation (Cont.) SOV/6176

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research orginization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ-radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

Card 2/14

POLITOV, N.G.; SHTAYERMAN, A.Yu.

Use of an SF-4 apparatus in the study of spectral-luminescent properties. Trudy Inst.fiz.AN Gruz.SSR 8:263-266 '62.
(MIRA 16:2)

(Spectrophotometry)

L 2814-65 EEC(b)-2/EWT(1)/EWT(m)/EWP(b)/T/EWP(t) IJP(c) JD/JG
ACCESSION NR: AP5004526 S/0048/65/029/001/0075/0077

AUTHOR: Vorozheykina,L.F.; Igitkhanishvili,D.D.; Politov,N.G.; Kvachadze,V.G. 35 31 B1

TITLE: Electric and thermal conductivities and optical absorption of irradiated alkali halide crystals /Report, 12th Conf. on Luminescence held in L'vov 30 Jan-5 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29,no.1, 1965, 75-77

TOPIC TAGS: electric conductivity, heat conductivity, optical absorption, thermal neutron, alkali halide, single crystal.

ABSTRACT: The electric conductivity at temperatures from 75 to 250°C and the maximum absorption coefficient in the F band of KCl crystals were measured before and after slow neutron irradiation with doses up to 2.4×10^{16} nvt. The conductivity was measured in vacuum with an electrometer capable of measuring currents as low as 2×10^{-13} A. The conductivity at 135°C first decreased with increasing dose, then increased to a maximum at 12×10^{15} nvt, and subsequently decreased. The absorption coefficient showed inverse behavior: a maximum at a moderately small dose and a minimum at 13×10^{15} nvt. The crystals investigated were of two kinds, distinguished

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L 32814-65

ACCESSION NR: AP5004526

by activation energies for conduction before irradiation of 1.0 and 1.18 eV respectively. The activation energy was not changed by irradiation except when the dose was near the critical value producing a large change in conductivity. Crystals subjected to the critical dose showed two activation energies, both smaller than that of the virgin material. The smaller of these activation energies was effective at temperatures below 135°C, and the larger at temperatures higher than this. The higher conductivities of crystals given the critical dose are ascribed to the appearance of new current carriers, and it is suggested that these are "decay products" of dislocations. The thermal conductivity, optical absorptinn coefficient at 300 mμ and relative dislocation density of LiF were measured as functions of neutron dose. A close correlation was found between the heat conductivity and the number of defects produced by the irradiation. It is concluded that the role of defects in heat conduction is not to be ignored. Orig.art.has: 3 figures.

ASSOCIATION: Institut fiziki Akademii nauk GruzSSR (Institute of Physics, Academy of Sciences, Georgian SSR)

SUBMITTED: 00/--Jan65 ENCL: 00 SUB CODE: SS

NR REF SOV: 003 OTHER: 002

Card 2/2

L 39102-65 EEC(b)-2/EPF(c)/EPF(n)-2/EPR/EWT(l)/EWT(m)/EWP(b)/T/EWP(t) Pi-4/Ps-4/Pr-4/Pu-4 IJP(c)

ACCESSION NR: AP5009505 S/0048/65/029/003/0366/0370

AUTHOR: Andronikashvili, E.L.; Politov, N.G.; Gatiya, M.Sh.; Vorozheykina, L.F.

TITLE: Radiation damage in ionic crystals /Report, Twelfth Conference on Luminescence held in L'vov 30 Jan-5 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no.3, 1965, 366-370

TOPIC TAGS: alkali halide, lithium compound, fluoride, potassium compound, chloride, thermal neutron, irradiation, dislocation, color center, radiation damage

ABSTRACT: The formation of dislocations and color centers in LiF and KCl crystals by thermal neutron irradiation was investigated. The specimens were irradiated in a reactor; they were subsequently etched and the dislocations were counted by microscopic examination. In each case two specimens were cut from the same crystal; one was irradiated, the other not. Both were then etched and examined. The relative color center concentrations were found by measuring the absorption coefficients at wavelengths near (but not at the centers of) the F and M bands for LiF and the F and U bands for KCl. Neither the dislocation nor color center concentrations increased monotonically with dose. The dislocation density curve

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L 39702-65

ACCESSION NOR: AP5009505

2

for each substance had two maxima at approximately the same doses, namely, 0.4 x 10.16 nvt. In LiF the second maximum was the higher one; in KCl, the first. The absorption curves for LiF also had two maxima, one at the dose corresponding to the first maximum of the dislocation density curve, and one at the dose corresponding to the second minimum of this curve. The absorption curves for KCl showed only one maximum at 0.4×10^{16} nvt. The healing of the LiF dislocations by annealing was investigated. It was found that the dislocations corresponding to the first maximum were much more slowly healed by annealing than those formed by further irradiation. It was suggested that the dislocations responsible for the first maximum are due to interstitial atoms while those that are formed by further irradiation are due to vacancies. "In conclusion, we thank T. G. Dzhaniyeri and M.V. Galustanshivili for their assistance in the work." Orig. art. has: 5 figures.

[02]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: SS, NP

NO REF SOV: 006 OTHER: 001 ATD PRESS: 3230

Card 2/2

L 12980-66 EWT(1)/T IJP(c) GG

ACC NR: AT6003161 SOURCE CODE: UR/3182/64/001/000/0031/0041

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Getiya, M. Sh.

ORG: none

TITLE: Radiative changes of dislocation densities in ionic crystals

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessy v tverdykh telakh, v. 1, 1964, 31-41

TOPIC TAGS: irradiation, neutron irradiation, irradiation effect, crystal [illegible] radiation dislocation

ABSTRACT: An investigation was made of the influence of neutron irradiation in a reactor on the density of the dislocations in potassium-chloride and lithium-fluoride crystals. The dislocations were developed by chemical etching. Two halves of the same crystal, one-half irradiated and the other half kept as a control, were investigated. Both halves were etched simultaneously and both surfaces were compared. At small irradiation doses, no changes in microstructure were found. At doses above 3×10^{15} nvt, the microphotos of both the irradiated and nonirradiated halves began to differ appreciably. On the surface of the irradiated crystal a radiative strengthening took place. The etched figures on the irradiated surface were considerably smaller than those on the nonirradiated surface. By increasing the etching time of an irradiated crystal it was possible to bring the dimensions of the etched figures up to the "normal" size, i.e., up to

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L 12979-66 EWT(l)/EWT(m)/EPF(n)-2/T IJP(c) GG

ACC NR: AT6003162 SOURCE CODE: UR/3182/64/001/000/0042/0054

AUTHOR: Davitashvili, T. Sh.; Politov, N. G.

ORG: none

TITLE: Local centers in irradiated ionic crystals

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessy v tverdykh telakh, v. 1, 1964, 42-54

TOPIC TAGS: ionic crystal, crystal deformation, crystal lattice distortion, color center, neutron irradiation, irradiation damage

ABSTRACT: An investigation was made of the relationship between the change in microstructure and the optical properties of coloration centers in potassium-chloride crystals irradiated in a reactor. Such investigations are important since F-center-type point defects exert a strong effect on fundamental properties such as stability, thermal conductivity, etc. Coloration centers are also used in studying the interaction of electron, hole, ion, and dislocation processes due to neutron irradiation in solid bodies such as alkali halide crystals. An attempt was thus made to show that changes in microstructure determine the generation and interaction of local electron and hole centers in irradiated alkali halide crystals. Specimens 13 x 10 x 1—1.5 mm, unannealed and unpolished, were simultaneously irradiated in an atomic reactor with neutron fluxes from 1.8×10^{15} to 3.6×10^{17} n/cm^2 under identical

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L 12979-66
ACC NR: AT6003162

conditions. New "270 mμ" and "310 mμ" bands, previously unknown for crystals irradiated with x-rays, were observed in the absorption spectra. Absorption bands associated with aggregate coloration centers (R_1, R_2, M, and N) possessed higher thermal stability in comparison with crystals irradiated with x-rays. This was attributed to the appearance of inner emitters, upon which the effect of self-coloration depends. The halfwidth of the separated F-band in all crystals irradiated in the reactor, independently of irradiation dose, exceeded the halfwidth of the F-band in crystals irradiated with x-rays. A self-coloration F-band appeared in crystals irradiated in the reactor and then discolored either optically or thermally. The halfwidth of this band coincided with the halfwidth of the F-band before discoloration. A dependence of the halfwidth of the F-band on the integrated neutron flux and a correlation between the change of the halfwidth and the change of dislocation density and stability characteristics was observed. The widening effect of the F-band and the dose dependence of the halfwidth were attributed to radiative damage of the crystal lattice. Orig. art. has: 9 figures. [JA]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 009/ ATD PRESS: 4182

Card 2/2

L 12774-66 EWT(1)/EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/JG/GG

ACC NR: AT6003160 SOURCE CODE: UR/3182/64/001/000/0013/0030

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Vorozheykina, L. F.; Abramishvili, M. G.

ORG: none

TITLE: Influence of defects of the structure on the mechanical properties of crystals

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessy v tverdykh telakh, v. 1, 1964, 13-30

TOPIC TAGS: crystal defect, ionic crystal, x ray irradiation, gamma irradiation, neutron irradiation

ABSTRACT: An investigation was made of the effect of x- and gamma-ray irradiation and neutron flux irradiation in a reactor on the hardness of potassium chloride and lithium fluoride crystals at room and liquid nitrogen temperatures. Microhardness H_m, hardness to scratching H_s, and hardness according to the attenuation of pendulum oscillations H_p were established by measurements on the surfaces of specimens cut from a single crystal ingot. The optical absorption spectra were also measured. The formation of point defects such as electron F-centers due to x-ray irradiation reduced the H_m, H_s, and H_p of KCl crystals. Prolonged irradiation may result in increased H_p. Discoloration of crystals restored H_p. In LiF crystals irradiated with x- and gamma-rays H_p and H_s increased, despite the formation of F-centers, while H_m changed only

Card 1/2

L 12774-66

ACC NR: AT6003160

insignificantly. LiF crystals irradiated by neutron flux were colored more strongly than KCl crystals. Both LiF and KCl crystals were strengthened, although strengthening of the LiF crystals was greater than that of the KCl crystals. The strengthening effects were apparently not associated directly with the coloration of the crystals. The effects of neutron flux irradiation of KCl crystals varied according to the type of hardness. At small irradiation doses H_s and H_p decreased sharply. At doses up to 9×10^{15} n/cm^2, H_s was 30% lower than in nonirradiated specimens and H_p 20% lower. After reaching a minimum, H_s and H_p began to increase and at $\sim 16 \times 10^{15}$ n/cm^2 they reached their initial values. In the beginning H_m increased and then reached saturation. The removal of thermal neutrons from the flux by means of cadmium filters had virtually no effect on the dose dependence of the types of KCl crystal hardness studied. Changes in the irradiation temperature changed the behavior of the hardness. For instance, H_s of KCl crystals decreased when irradiated with doses up to 9×10^{15} n/cm^2, while at low temperature irradiation increased. H_p behaved similarly. Orig. art. has: 22 figures.

[JA]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 4184

Card 2/2 HW

L 18887-66 EWT(l)/EWT(m)/EPF(n)-2/T IJP(c) GG
ACC NR: AP6006997 SOURCE CODE: UR/0051/66/020/002/0272/0275

AUTHOR: Davitashvili, T. Sh.; Politov, N. G.

ORG: none

TITLE: Optical properties of F-centers in potassium chloride crystals irradiated in a reactor

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 272-275

TOPIC TAGS: neutron irradiation, potassium chloride, color center, crystal radiation effect

ABSTRACT: Previous studies of the form and temperature variation of optical absorption parameters in the F-band have shown that the theory developed for F-centers in an ideal surrounding is applicable also to F-centers in a distorted surrounding, although the theoretical parameters require considerable alteration. The authors compare the changes required in this case with those which follow from the configuration curve and analyze the optical properties of F-centers with distorted surroundings on the basis of this curve. The configuration curve is given by the four constants K_g, K_e, X_0, and U_0. The constants K_g and K_e are the elastic forces

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UDC: 548.0 : 620.192+535.37

L 18887-66
ACC NR: AP6006997

which displace the ions from their equilibrium position in the ground and excited states. The constants X_0 and U_0 are the abscissa and ordinate for the shift in the minimum energy of the excited state with respect to the unexcited state. It is found that the same conclusions may be drawn from analysis of the variations in parameters of the theory and those of the configuration curve with respect to the optical properties of F-centers. An increase in the integrated neutron flux during irradiation of the crystal reduces the Huang and Rhys parameter—S. This means that in the excited state the F-center takes up less volume than an F-center with an ideal surrounding (X_0 decreases), and there is also a reduction in the number of phonons corresponding to the absorption band maximum. The energy transmitted to the lattice by light absorption is constant (the Stokes shift is invariant); therefore there should be an increase in the energy of phonons generated by the absorption of light. Similar conclusions may be drawn from an analysis of variations in the parameters of the configuration curve (an increase in K_g and K_e and a reduction in X_0).

A comparison of experimental and theoretical data indicates that the luminescence intensity of F-centers in crystals irradiated in a reactor should not be affected by variations in the integral neutron flux and that there should be an increase in the half-width of the emission band. Orig. art. has: 1 figure, 1 table, and 5 formulas.

SUB CODE: 20/ SUBM DATE: 07Dec64/ ORIG REF: 004/ OTH REF: 015 [14]
ATD PRESS: 4217
Card 2/2 mc

L 22777-66 EWT(m)/EPF(n)-2/EWP(t)/EWA(h) IJP(c) JD/JG

ACC NR: AP6009716 SOURCE CODE: UR/0386/66/003/004/0173/0177

AUTHOR: Andronikashvili, E. L.; Bedbenova, D. S.; Politov, N. G.; Tsakadze, D. S.

ORG: Institute of Physics, Academy of Sciences, Georgian SSR (Institut fiziki Akademii nauk Gruzinskoy SSR)

TITLE: Scattering of cold neutrons in irradiated KBr and NaCl crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 4, 1966, 173-177

TOPIC TAGS: neutron scattering, sodium chloride, potassium bromide, single crystal, Gamma irradiation, crystal defect

ABSTRACT: In view of the current interest in the scattering of neutrons in irradiated alkali-halide single crystals, the authors irradiated KBr and NaCl single crystals with gamma rays from the In-Ga radiation loop in the reactor of the Georgian Academy Physics Institute. The dose rate was 0.8×10^6 r/hr. Before irradiation the crystal was cooled and placed in the path of a monochromated beam of neutrons. The resolution was 25% in terms of the wavelength, which ranged from 1 to 12 Å. The maximum background was 0.08 neut/cm^2. The sample thicknesses (6.3 mm for KBr and 2.2 mm for NaCl) were optimal from the point of view of the procedure for measuring neutron transparency;

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the transmission was 0.6—0.9 in the indicated wavelength interval. To suppress the inelastic scattering of neutrons by thermal lattice vibrations, the experiment was carried out at liquid-air temperature. The intensity of the neutron beam passing through the irradiated crystal was compared with the intensity through the same crystal prior to irradiation. Neutron scattering maximum was observed at wavelengths between 5 and 8 Å. The height of the maximum increased in proportion to the irradiation time. A similar curve was obtained also for 20 hours' exposure, but the measurement error was quite large. The scattering of neutrons by defects in irradiated crystals is even more strongly pronounced in NaCl crystals. The preliminary experiments have shown that at wavelengths corresponding to the maximum on the curve, the intensity of the neutrons scattered at an angle increases somewhat. To check whether the observed effect is connected with the occurrence of color centers in the irradiated single crystals of the alkali-halide salts, the concentration of F and M centers was measured in the wavelength interval 220—1000 nm. It was found that the maximum concentration of F-centers is 7×10^{17} cm^{-3}, and the number of M centers is much lower. Such small concentrations cannot explain the observed change in neutron transmission. The authors thank Professor Yu. M. Kagan for interest in the work and valuable discussions. Orig. art. has: 3 figures. [02]

SUB CODE: 20/ SUBM DATE: 03Jan66/ ORIG REF: 002/ ATD PRESS: 4229

Card 2/2 BK

L 23784-66 EWT(1)/EWT(m)/EPF(n)-2/T IJP(c) GG

ACC NR: AR6005227 SOURCE CODE: UR/0058/65/000/009/E110/E110

AUTHORS: Davitashvili, T. Sh.; Politov, N. G.

TITLE: Local centers in irradiated ionic crystals 2/ 43 B

SOURCE: Ref. zh. Fizika, Abs. 9E910

REF. SOURCE: Sb. Elektron. i ionnyye protsessy v tverd. telask. No. 1. Tbilisi, Metsniyereba, 1964, 42-54

TOPIC TAGS: ionic crystal, neutron irradiation, color center, absorption spectrum, x ray irradiation, potassium chloride

TRANSLATION: The connection was investigated between the change in the microstructure and the properties of local electronic and hole centers in single crystals of KCl irradiated in a reactor (integral neutron fluxes from 1.8×10^{15} to 3.6×10^{17} cm^{-2}). The absorption spectrum showed F and K bands and a band at 310 nm, which becomes more intense as a result of the discoloring of the crystal by F-light at liquid-nitrogen temperatures, with a maximum occurring at 270 nm.

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irradiation),

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L 23784-66

ACC NR: AR6005227

The half width of the F band depends on the irradiation dose and exceeds the half width in the spectrum of the x-irradiated crystal. A correlation is noted between the dose dependence of the half width of the band with variation of the density of the dislocations and with variation of the strength characteristics. In KCl with admixture of LiCl (0.7 mol.%) and NaCl (2 mol.%) irradiated with a dose of 1.2×10^{16} cm^{-2}, bands were observed at 620 and 600 nm respectively, connected with formation of electronic A centers (the F center, in the first coordination sphere of which one of the ions of potassium is replaced by an Lr or Na ion). In the spectrum of crystals irradiated at room temperature and at 90K, there was registered a hole V_2 band (230 nm), which is stable at room temperature, thus indicating the special conditions for the existence of hole centers in crystals irradiated with neutrons. The recovery of F bands (self coloring) and of optically or thermally discolored irradiated crystals, which is connected with the existence in the crystals of internal sources of radiation (impurities activated upon irradiation), is investigated. Yu. Tyutrin

SUB CODE: 20

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L 24185-66 EWT(1)/T IJP(c) GG
ACC NR: AR6005229 SOURCE CODE: UR/0058/65/000/009/E111/E111

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Getiya, M. Sh.

TITLE: Radiative changes in the density of dislocations in ionic crystals

SOURCE: Ref. zh. Fizika, Abs. 9E917

REF SOURCE: Sb. Elektron. i ionnyye protesessy v tverd. telakh. No. 1. Tbilisi, Metsniyereba, 1964, 31-41

TOPIC TAGS: crystal dislocation, potassium chloride, lithium fluoride, neutron bombardment, annealing, crystal surface, ionic crystal, single crystal

TRANSLATION: The authors present results of an investigation of the density of dislocations (D) in single crystals of KCl and LiF bombarded by neutrons in a reactor. The method of chemical etching was used to display the D. The dependence of the dislocation density on the radiation dose has several maxima and minima, thus evidencing that during the course of the irradiation competing processes which lead to an increase and decrease in the number of dislocations occur in the crystals. Effects of hardening of the crystals and of "rejuvenation" of old dislocations under the influence of irradiation are observed. It is indicated that isochronous annealing for three hours at 300C leads to an appreciable change in the dislocation picture, and at 700C no dislocations remain in the crystal and its surface becomes covered by a large number of pores. The dislocations can be extracted by annealing from the irradiated crystals more easily than from non-irradiated ones. Yu. Tyutrin.

SUB CODE: 20

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L 08315-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG/GG
ACC NR: AR6033778 SOURCE CODE: UR/0058/66/000/007/D071/D071

AUTHOR: Dzhordzhishvili, L. I.; Kalaberishvili, T. L.; Politov, N. G.; Sobolevskaya, S. V.

TITLE: Electronic paramagnetic resonance and the absorption of lithium fluoride in crystals irradiated by neutrons

SOURCE: Ref. zh. Fizika, Abs. 7D566

REF SOURCE: Sb. Elektron. i ion. protsessy v tverd. telakh. No 2. Tbilisi, Metsniyereba, 1965, 19-26

TOPIC TAGS: resonance, paramagnetic resonance, electronic paramagnetic resonance, lithium fluoride crystal, lithium fluoride, optical absorption, absorption coefficient, crystal, monocrystal, absorption line, magnetic field, dislocation, vacancy

ABSTRACT: An investigation was made of the electron paramagnetic resonance (EPR) and optical absorption of natural lithium fluoride (LiF) monocrystals irradiated by a neutron flux of $1.9 \cdot 10^{15}$—$2.9 \cdot 10^{16}$ neutron/cm^2 at 300 and 77K. This involved a determination of the EPR absorption line width ΔH as a function of the angle between the magnetic field and the axis [111], and of the annealing time and temperature. Complex curves of the dosage dependence of ΔH and the coefficient of

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ACC NR: AR6033778

optical absorption were found to agree in slope with the maximum occurring at $15 \cdot 10^{15}$ neutron/cm^2. The maximum is due to the dissolution of dislocations accompanied by an injection of vacancies into the crystal and the capture of electrons by injected anion vacancies. The observed EPR spectrum consists of two superimposed lines: a wide line determined by F-centers distributed evenly within the crystal, and a narrow one with the concentration of F-centers near the dislocations. Thus, the width of the total EPR spectrum depends on the concentration of F-centers and on the density of dislocations. In irradiating samples with doses of $5 \cdot 10^{18}$—$7.5 \cdot 10^{18}$ neutron/cm^2, the spectrum of F-centers disappears and a signal appears from the conductivity electrons ($\Delta H \sim 5$ erg) of metallic lithium, which is explained by the coagulation of a colloidal metal formed in the lattice. [Translation of abstract]

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ACC NR: AP6026699

band in the long-wave direction when pressure is applied. If the impurity center has no vacancies, and the electron transitions take place only in the field of the impurity ion, the optical transitions in such a center can be compared to those in a hydrogen atom immersed in a dielectric medium. This is substantiated by experiment. Orig. art. has: 4 formulas, 1 table.

SUB CODE: 20/ SUBM DATE: 24Jun65/ ORIG REF: 005/ OTH REF: 012

Card 2/2

ACC NR: AT7000177 SOURCE CODE: UR/3192/65/002/[illegible]/0013

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Getiya, M. Sh. Galustash[illegible]li, M. V.

ORG: none

TITLE: Radiative variation of dislocation density in alkali halide crystals irradiated in a reactor at normal and low temperatures

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessyy i tverdykh tel, v. 2, 1965, 3-13

TOPIC TAGS: lithium fluoride, alkali halide, neutron irradiation, gamma irradiation, crystal dislocation phenomenon

ABSTRACT: Samples were irradiated in the Institute of Reactor Technology at 155 and 110K at the Institute of Physics, AN GruzSSR. The dependence of dislocation density on irradiation time and temperature was studied. Dislocation density was determined in two ways: 1) the number of dislocations were counted in random portions of a series of irradiated samples with the aid of a standard, and 2) the relative variation in dislocation density on irradiated surfaces was determined by comparison with a control surface of one sample (mirror crystal method). The latter method is more accurate. Curves are plotted for the number of dislocations in LiF crystals as dependent on irradiation time in the vertical experimental reactor channel ($nv = 1.1 \cdot 10^{12}$ neutrons/cm^2 sec, 85 mm thick lead target attenuating the gamma radiation), in the verti-

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ACC NR: AT7000177

cal low temperature loop ($n\upsilon$ = $5.5 \cdot 10^{11}$ neutrons/cm^2 sec), and in the horizontal low temperature loop ($n\upsilon$ = $1.8 \cdot 10^{12}$ neutrons/cm^2 sec). More radiation-generated dislocations and fewer vacancies occurred in samples exposed to the attenuated gamma radiation. The dislocations in these crystals apparently form from the condensation of point defects. The ratio D/D_0 was measured after sample irradiation in a beam of $1.8 \cdot 10^{12}$ neutrons/cm^2 sec at 100K in a range of energies from $3 \cdot 10^{14}$ to 10^{15} nvt. The ratio increases with increase in irradiation time, and the dislocation density at 110K is about 20% less than at 300K. Results at 155K coincide with those at 300K. The effect of annealing on dislocation density is described. The dependence of dislocation density in LiF crystals on the temperature during irradiation confirms the condensation theory of dislocation generation. Selective etching of the test samples revealed the nature and distribution of point defects. Microphotographs of crystals etched after irradiation show extensive pitting, which increases with higher dosages. Effects of irradiation and subsequent annealing on the density and nature of pitting and the mechanical properties of the crystals are described. From the experimental data it is concluded that irradiation causes point defects to merge. These defects have greater dynamic resistance to the motion of dislocations than do individual vacancies, interstitial atoms, and individual impurity atoms. Annealing causes the point defects to unite into plane cavities. The annealing time and temperature and the rate of cooling all affect the mechanical properties of the irradiated crystals. The authors thank L. F. Vorozheykina for making the microhardness measurements, M.F. Zhvaniy for monitoring the neutron beams, and G. N. Garevanishvili and G. I. Ayvazov for irradiating the samples. Orig. art. has: 7 figures, 4 tables. [WA-95]

SUB CODE: 20,11/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 003

Card 2/2

ACC NR: AT7000179

SOURCE CODE: UR/3182/65/002/000/0019/0026

AUTHOR: Dzhordzhishvili, L. I.; Kalabegishvili, T. L.; Politov, N. G.; Sobolevskaya, S. V.

ORG: none

TITLE: EPR and optical absorption in neutron-irradiated lithium fluoride crystals

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessy v tverdykh telakh, v. 2, 1965, 19-26

TOPIC TAGS: lithium fluoride, EPR spectrum, halide optic material, alkali halide, neutron irradiation, crystal dislocation phenomenon

ABSTRACT: Test samples of LiF were cut from monocrystalline melts of natural material and irradiated in the atomic reactor of the Physics Institute, AN GruzSSR. The radiation energy of $1.9 \cdot 10^{15}$ to $2.9 \cdot 10^{16}$ was selected because alkali halide crystals are known to change their optical and mechanical characteristics significantly at these energies. EPR spectra were studied with standard radiospectrometers and with a doubly modulated magnetic field. The field was calibrated from the proton resonance signal and measurements were made at 77 and 290K. The EPR spectrum approximates a Gaussian curve, and the width of the EPR absorption line depends on crystal orientation to the magnetic field as well as on the radiation dosage. The coloration curve of the

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ACC NR: AR7000879 SOURCE CODE: UR/0058/66/000/C09/E092/E092

AUTHOR: Andronikashvili, E. L.; Vorozheykina, L. F.; Igitkhanishvili, D. D.; Politov, N. G.

TITLE: Radiation-induced changes in the conductivity of potassium chloride and lithium chloride crystals

SOURCE: Ref. zh. Fizika, Abs. 9E736

REF SOURCE: Sb. Elektron. i ion. protsessy v tverd. telakh. No. 2. Tbilisi, Metsniyereba, 1965, 27-34

TOPIC TAGS: potassium chloride crystal, lithium chloride crystal, radiation, ion conductivity, activation energy, carrier activation energy, thermal neutron, radiation defect

ABSTRACT: A study was made of changes in the ion conductivity and the activation energy of carriers in KCl and LiF crystals irradiated with thermal neutrons at a flux density of $2.07 \cdot 10^{12}$ $cm^{-2}sec^{-1}$ using a reactor of the Institute of Physics of the Academy of Sciences USSR. The activation energy was determined from

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measurements of conductivity as a function of temperature within the 50—400C range. At relatively small radiation dosages conductivity was found to decrease with an increase in the activation energy; at the "critical" radiation dosage, of the order of $1.2 \cdot 10^{16}$ cm^{-2}, the activation energy reaches a minimum and conductivity a maximum, corresponding to a change by two orders of magnitude. The defects induced by radiation in KCl are thermally more stable than in LiF. [Translation of abstract]

SUB CODE: 20/ [SP]

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ACC NR: AT7000183

centrations become observable. Higher energy electrons have no effect on such films, but after extended exposure dark points appear and gradually grow into large squares. When a sample is suddenly subjected to a high energy beam of electrons, an "explosion" occurs, and filamentary projections appear which grow shorter and broader as the atoms regroup. A moire pattern was observed on the platinum-carbon sample, and three kinds of crystals were seen on the lacquer samples: 1) a thin film, 2) small squarish crystals inside hexagons, which honeycombed the entire surface of the lacquer, and 3) hexagons without squares. The patterns seen in the microscope are described in detail, and the reasons therefore are given. The distribution of dislocation loops is described. The authors thank E. L. Andronikashvili for stimulating interest in the work. Orig. art. has: 8 figures. [WA-95]

SUB CODE: 20,11/ SUBM DATE: none/ OTH REF: 005

Card 2/2

ACC NR: AT7000181 SOURCE CODE: UR/3182/65/002/0[illegible]/0035/0039

AUTHOR: Politov, N. G.; Driyayev, D. G.

ORG: none

TITLE: Low frequency internal friction in lithium fluoride crystals

SOURCE: AN GruzSSR. Institut fiziki. Elektronyye i ionnyye protesessy v tverdykh telakh, v. 2, 1965, 35-39

TOPIC TAGS: lithium fluoride, crystal deformation, crystal dislocation phenomenon, x ray effect

ABSTRACT: Results are given of a study of the effect of x-ray irradiation and mechanical deformation on the internal friction in LiF crystals at infralow frequencies. Measurements were made with a torsion pendulum relaxation instrument designed by Yu. V. Pigunov at a frequency of 1 cycle. This required LiF samples 2 × 2 × 60 mm. The temperature dependence of the internal friction coefficient, Q^{-1} was measured over the range from the temperature of liquid nitrogen to room temperature. Samples were annealed at 700C for 5 hr, were cooled to liquid nitrogen temperature, and then were warmed at the rate of 0.5 deg/min to room temperature, Q^{-1} being measured at intervals of 3K. Curves were plotted for a sample before and after x-ray exposure at 30 kv, 10 ma, for 1 hr at room temperature. Before irradiation the Q^{-1} curve shows several more-or-less low peaks between 100 and 300K, notably at 160K (peak 1) and 210K (peak 2).

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ACC NR: AT7000181

After irradiation, peak 1 vanished, whereas peak 2 grew sharply. The tests were repeated after 3 days, during which the crystals were maintained at room temperature. Peak 1 reappeared and peak 2 decreased somewhat. Upon reexposure to x-rays, peak 1 decreased, but not as much as the first time. The crystals were subjected to 1% deformation, which was found to have an effect opposite to that of x-irradiation: peak 1 grew, whereas peak 2 fell. After 3 days at room temperature, the peaks returned to their initial state. The rise and fall of the peaks is explained as due to the Schulman-Compton mechanism, in which vacancies are generated by the irradiation, coupled with Varley's multiple ionization and Seitz's dislocation mechanisms. The excitons formed by the x-rays decay and the halogen ion localized at the line of dislocation ionizes. The resulting atom departs, leaving a vacancy. The decay of another neighboring exciton causes one of the halogen ions of the normal lattice to fill the vacancy, leaving a free halogen vacancy. This mechanism results in a drift of the dislocations. The effect of deformation on the behavior of the peaks is explained. Peak 1 is associated with "dislocation" type internal friction; peak 2 with "vacancy" type internal friction. However, the latter conclusion is not clear-cut. Orig. art. has: 6 figures. [WA-95]

SUB CODE: 20,11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 004

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