S/020/62/147/006/030/034
B144/B186

AUTHORS: Nikol'skiy, V. G., Buben, N. Ya.

TITLE: Plastification of polyethylene in low-temperature radiolysis

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 6, 1962, 1406-1408

TEXT: The temperature effect on the structural changes in irradiated polyethylene was evaluated from the luminescence curve recorded with a photomultiplier. High-pressure polyethylene was irradiated at 77°K with fast electrons (1 - 70 Mrad) and then heated at a rate of 20°C/min to 300°K. It was found that increasing the irradiation dose shifted the maximum of luminescence toward lower temperatures. T_{max}, designating also the vitrification point of polyethylene, was reduced by ~40°C when the dose was raised from 1 to 70 Mrad. When irradiation with 20 Mrad was repeated using the same dose under otherwise equal conditions, T_{max} shifted slightly toward higher temperatures owing to crosslinking induced by the first irradiation (Vysokomolek. soyed., 4, no. 6 (1962)). T_{max} shifted toward lower temperatures if the second dose was higher than the first.

Card 1/2

These phenomena are due to plastification of the polymer by molecular hydrogen and light hydrocarbons which are produced in the radiolysis, but cannot diffuse at 77°K. The interdependence of diffusion rate and heating rate was proved by heating 60μ thick polyethylene samples, irradiated with 0.5 and 4 Mrad, at different rates. Whereas, at a heating rate of 40 - 50°C/min, the devitrification temperature of the samples irradiated with 4 Mrad was 4 - 6°C lower than that of the 0.5 Mrad samples, no difference was observed with a heating rate of 5°C/min. Thus with slow heating the plastifying radiolytic products were diffused before the vitrification point was reached. Thus crosslinking leads to a higher vitrification point, while plastification increases the molecular mobility and reduces the vitrification temperature. There are 2 figures.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: July 19, 1962, by V. N. Kondrat'yev, Academician

SUBMITTED: July 16, 1962

Card 2/2

ACCESSION NR: AP3000135 S/0062/63/000/005/0954/0954

AUTHOR: Nikol'skiy, V. G.; Chkheidze, I. I.; Buben, N. Ya.

TITLE: Reaction of alkyl radicals with oxygen in solid phase

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 954

TOPIC TAGS: EPR-spectra, polyethylene, natural rubber, dicyclohexyl-4-decane

ABSTRACT: The authors studied the EPR spectra of samples of polyethylene, natural rubber, dicyclohexyl-4-decane, and some other amorphous organic compounds which were irradiated by fast electrons at 77K. When the temperature of the irradiated sample was raised, a formation of peroxide-type radicals was observed, which was due to the reaction of the alkyl radicals with the oxygen which was dissolved in the substance. In particular, in the case of the samples which were vitrified in air prior to irradiation, the stabilized alkyl radicals were oxidized completely if their concentration did not exceed 2 x 10 sup 17 to 1 x 10 sup 18 g sup -1. It was noted for all the compounds studied that the oxidation rate of the radicals sharply increases in the temperature interval from 80 to 50 degrees below the vitrification point. In the case of dicyclohexyl-4-decane (vitrification point

Card 1/2

ACCESSION NR: AP3000135

-195K), the oxidation rate of the radicals rises almost 1000 times when the temperature is changed from 120 to 140K. During oxidation, the summary concentration of the radicals in the samples undergoes no essential change. Rapid oxidation of the alkyl radicals during the heating of irradiated samples of polyethylene begins at Gamma-transition temperature, 150 to 155 K (releasing the mobility of the segments - CH sub 2 -). During the heating of hydrocarbons which had been irradiated in the crystalline state, an analogous oxidation of the radicals did not occur down to melting temperature. This is apparently associated with the fact that the equilibrium concentration of oxygen in the crystalline phase is much lower than in the amorphous state.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 22Jan63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH;PH NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AT4020701 S/0000/63/000/000/0100/0106

AUTHOR: Bel'govskiy, I. M.; Kravchuk, I. P.; Nikol'skiy, V. G.; Yenikolopyan, N. S.

TITLE: Low-temperature radiation-induced polymerization of isobutylene

SOURCE: Karbotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Carbon-chain macromolecular compounds); sbornik statey. Moscow, Izd-vo AN SSSR, 1963, 100-106

TOPIC TAGS: polymerization, radiation polymerization, isobutylene, low-temperature polymerization

ABSTRACT: In order to clarify the degree to which the reaction proceeds via an ionic mechanism, the kinetics of the radiation polymerization of isobutylene over a temperature range of -40 to -196C were investigated. With respect to low-temperature radiation polymerization, the following conclusions could be drawn: The independence of the polymerization yield of the intensity of the dose indicates a linear relationship between the polymerization rate and the radiation intensity. The polymerization of isobutylene in the liquid phase is accelerated by a decrease in temperature down to the freezing point of the monomer. The reaction rate has an activation energy of 2.5 kcal/mol. In the solid phase, the reaction rate has a normal temperature dependence with an apparent activation energy of

Card 1/2

ACCESSION NR: AT4020701

+1.88 kcal/mol. The maximum rate of polymerization is obtained in the initial stage of irradiation and the process shows a tendency to become saturated as the dose of radiation is increased. The molecular weight of the product has a maximum value during the initial stage of irradiation, after which it drops rapidly to a value of 15,000-20,000; thereafter it is essentially independent of the dose. Orig. art. has: 5 formulas and 5 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 26Apr62 DATE ACQ: 20Mar64 ENCL: 00

SUB CODE: OC NO REF SOV: 005 OTHER: 005

Card 2/2

ACCESSION NR: AP3000136 S/0062/63/000/005/0955/0955

AUTHOR: Nikol'skiy, V. G.; Alfimov, M. V.; Buben, N. Ya.

TITLE: The nature of radio-thermoluminescence of organic compounds

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 955

TOPIC TAGS: radiolysis, radio-thermoluminescence, hexane, nonane, benzine, polyethylene, alkyl radicals, aromatic free radicals

ABSTRACT: When organic substances are heated, a glow is very often observed after radiolysis. This glow—radio-thermoluminescence—is associated with the recombination of ions which were stabilized in the substance during radiolysis (Pannell, J. H., Manning, B.; Journ. Chem. Phys. 23, 1368, 1955), or with the recombination of stabilized radicals (Kustanovich, I. M., Polak, L. S., Rytova, N. M.; Proceedings of 2nd All-Union Conference on Radio Chemistry. Moscow. Izd. AN, SSSR, 1962, p. 322).

Samples of saturated and aromatic hydrocarbons (hexane, nonane, benzine, and others) which were irradiated by fast electrons at 77K were studied. It was found that all of these substances luminesce if they are excited by visible light at 77K after radiolysis. During a prolonged exposure, the intensity of the

Card 1/2

ACCESSION NR: AP3000136

photoluminescence gradually drops and can be reduced by approximately 100 times. The test samples then whiten and the color acquired during radiolysis disappears. During subsequent thawing, the whitened test samples have a gleam which is many times weaker than that of samples which were not subjected to light. It was shown that the concentration of radicals in the sample (according to EPR data) during exposure does not substantially change. Test samples of polyethylene, subjected to mechanical decomposition at 100K and consequently containing approximately 10 sup 19 radicals per gram, were also studied. The findings indicate that radio-thermoluminescence of organic compounds is not associated with the evolution of energy during recombination of alkyl or aromatic free radicals. The coloring of organic samples during radiolysis, which is characteristic for them from photo- and thermoluminescence, are primarily determined by the processes of stabilization and recombination of charges.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR).

SUBMITTED: 16Feb63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH,PH NO REF SOV: 001 OTHER: 001

Card 2/2

L 19165-63 EWP(j)/EPF(c)/EWT(l)/EWT(m)/BDS AFFTC/ASD/IJP(C)/SSD
Pc-4/Pr-4 RM/WW/MAY
ACCESSION NR: AP3005334 S/0181/63/005/008/2248/2256

74
19 72

AUTHORS: Nikol'skiy, V. G.; Tochin, V. A.; Buben, N. Ya.

TITLE: Stabilization of electrons during low-temperature radiolysis of organic substances

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2248-2256

TOPIC TAGS: electron, stabilization, low temperature, radiolysis, organic substance, trap, photoluminescence, spectrum, excitation, saturated hydrocarbon, alkyl radical, polyethylene, absorption spectrum, conduction band, thermoluminescence

ABSTRACT: The authors have investigated the spectrum of photoluminescence excitation for several saturated hydrocarbons exposed to fast electrons at a temperature of 77K. In irradiated samples of polyethylene they also studied absorption spectra at low temperatures and plotted the dependence of the absorption coefficient on the dose of radiation. The results obtained indicate that (in samples of saturated hydrocarbons) centers of localization are formed during

Card 1/2

L 19165-63
ACCESSION NR: AP3005334

2

low-temperature radiolysis, with energy levels at 2-3 ev below the conduction band. It is concluded that deep electron traps are formed in saturated hydrocarbons during low-temperature radiolysis, the traps apparently being stabilized alkyl radicals. The dominant stabilization of electrons in alkyl radicals takes place during incipient radiolysis, at doses of 10^5 - 10^6 rads. Thermoluminescence of organic compounds cannot be explained by the assumption of thermal ejection of electrons from traps. Orig. art. has: 7 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR, Moscow (Institute of Chemical Physics, Academy of Sciences, SSSR)

SUBMITTED: 25Mar63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 007 OTHER: 006

Card 2/2

L 18542-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Ps-4/Pr-4/Pc-4 RM/MAY
ACCESSION NR: AP3006763 S/0190/63/005/009/1388/1392

97
74

AUTHORS: Alfimov, M. V.; Nikol'skiy, V. O.

TITLE: Radio-thermoluminescent investigation of structural transformations in butadiene rubbers in the 130-273K temperature range

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 9, 1963, 1388-1392

TOPIC TAGS: structural transformation, radio-thermoluminescence, butadiene rubber, reorientation, glassy state, elastic state, vitrification

ABSTRACT: The investigation was undertaken of refined samples of industrial synthetic rubbers SKB, SKBM, and SKD, which contained a 66%-, 40%- and 8-2% respective concentration of 1,2-CH_2- CH-CH-CH_2- groups. A few drops of a benzene solution of these were placed in a metallic cuvette, the solvent evaporated, and a 20-40 micron rubber film obtained. This was subjected to irradiation with fast electrons of a 1.6 Mev energy, at 77K. The irradiation dose amounted to 2 Mradian, the films being defrosted at a rate of 2 to 6OC per minute. The luminescence was recorded by a FEU-19 photoelectronic amplifier, and the temperature of the films during irradiation was measured by a thermocouple. The obtained curves showed two maximums, the first located within the

Card 1/2

L 18542-63
ACCESSION NR: AP3006763

3

130-160K temperature region, the second within 160-273K. The authors attribute the first maximum to the defrosting of methylene groups and the second maximum to a transition of the rubber from the glassy to the high-elasticity state. This is supported by the fact that the temperatures of the maxima peaks practically coincide with the temperature of vitrification of the respective rubber. It was also found that the second maximums showed shifts as to temperature on the thermoluminescence curve. These seem to bear a relationship to the concentration of the 1,2 - groups, the highest (nearly 50C) belonging to SKB rubber, with SKBM coming next. The values for the activation energies of vitrification were determined. N. Ya. Buben is thanked for interest and consultation and D. N. Sapozhnikov for assistance. Orig. art. has: 1 formula and 4 charts.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR)

SUBMITTED: 05Mar62 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: CH NO REF SOV: 008 OTHER: 008

Card 2/2

NIKOL'SKIY, V.G.; ALFIMOV, M.V.; BUBEN, N.Ya.

Change in electron paramagnetic resonance spectra in the optical bleaching of irradiated organic substances. Zhur. fiz. khim. 37 no.12:2797-2798 D '63. (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR.

ALFIMOV, M.V.; NIKOL'SKIY, V.G.; BUBEN, N.Ya.

Thermoluminescence and ESR spectra of organic compounds irradiated with fast electrons. Kin. i kat. 5 no.2:268-276 Mr-Ap '64. (MIRA 17:8)

1. Institut khimicheskoy fiziki AN SSSR.

L 339-65 EWT(m)/EPF(c)/EWP ... 0020/64/158/003/0692/0693
ACCESSION NR: AP4046383

AUTHOR: Shuykin, N. I.

Bel'skiy, V. G

TITLE: Vinylation of ...

SOURCE: AN SSSR. Doklady ... 1964, 692-693

TOPIC TAGS: ... vinylation, radical mechanism, vinylcyclo... vinyldioxane ...

ABSTRACT: The ... bond of ... were run with ... in the presence of ... autoclave at ... dioxane ... as initiator ... for 3 hours under 15 ... of the vinylation pro... liquid chromatography ... tetrahydrofuran vi... established the formation ... mechanism was indi... dioxane and vinyltetrah...

2

ACCESSION NR: AP4046483

ASSOCIATION: Institut ...

... k SSSR (Institute of Orga...

SUBMITTED: 28May64

SUB CODE: GC

1/2

SHUYKIN, N.I.; PEREDEV, P.I., NIKOL'SKIY, V.A.

Vinylation of cyclanes and cyclic ethers. Izv. AN SSSR Otd. khim. nauk no.3:692-693 S '64. (MIRA 17:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. 2. Chlen-korrespondent AN SSSR (for Shuykin).

SHUYKIN, N.I.; LEBEDEV, B.L.; NIKOL'SKIY, V.G.; GAYVORONSKAYA, G.K.

Vinylation of tetralin in the presence of peroxide. Izv. AN SSSR Ser. khim. no.2:351-353 '65. (MIRA 18:2)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

SHUYKIN, N.I.; LEBEDEV, B.L.; NIKOL'SKIY, V.G.

Vinylation of cyclic ketones. Izv. AN SSSR Ser. khim. no.2:396 '65. (MIRA 18:2)

L 19365-66 EWT(m)/EWP(j)/EWA(h)/EWA(l) WW/RM

ACCESSION NR: AP5013758 UR/0020/65/162/002/0370/0372

AUTHOR: Buben, N. Ya.; Gol'danskiy, V. I. (Corresponding member AN SSSR); Zlatkovich, L. Yu.; Nikol'skiy, V. S.; Rayevskiy, V. G. 18 15 16

TITLE: Study of a polymer mixture by radiothermoluminescence

SOURCE: AN SSSR. Doklady, v. 162, no. 2, 1965, 370-372

TOPIC TAGS: polymer, thermoluminescence, radiothermoluminescence, butadiene elastomer

ABSTRACT: Radiothermoluminescence was used in this work to evaluate the extent of homogeneity of polymer mixtures. Butadiene elastomers SKB and SKD, identical in composition but differing with regard to content of vicinal bonds, were mixed on rollers in various proportions. After degassing, the mixture samples were irradiated with fast electrons at 77K (dose: 1 rad) and allowed to warm up at the rate of 10—12° per min. Previous work had shown that each of the two elastomers had a well-resolved luminescence maximum corresponding to the vitrification temperature of the elastomer. It was found in the present work that when the two elastomers are mixed insufficiently the mixture exhibits two luminescence maxima. On the other hand, when the mixture is sufficiently homogeneous, only one maximum is observed,

Card 1/2

L 19365-66

ACCESSION NR: AP5013758

somewhere between the two maxima of the individual elastomers. It is planned to apply this method to quantitative observations of processes in mixed systems. Orig. art. has: 4 figures. [VS]

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR); Moskovskiy tekhnologicheskoy institut myasnoy i molochnoy promyshlennosti (Moscow Technological Institute of the Meat and Dairy Industry)

SUBMITTED: 09Jan65 ENCL: 00 SUB CODE: OC, MT

NO REF SOV: 007 OTHER: 000 ATD PRESS: 4015

Card 2/2

L 10838-66 EWT(1)/EWT(m)/EWP(j)/EWA(h)/EWA(m)-2/EWA(1) IJP(c)/RPL AT/RM/GS

ACC NR: AT5023442 SOURCE CODE: UR/0000/65/000/000/0163/0167

AUTHOR: Nikol'skiy, V. G.; Tochin, V. A.; Buben, N. Ya.

ORG: none

TITLE: Investigation of electrons stabilized in certain saturated hydrocarbons by means of optical methods

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 163-167

TOPIC TAGS: alkane, mass spectrum, photoluminescence, free radical, electron trapping, electron bombardment, spectrophotometer

ABSTRACT: Photoluminescence and color of hexane, nonane, 2,4-dimethyldecane, tetradecane, cyclohexane, dicylohexyl-4-decane, 1,2-dicylohexyldodecane, and high density polyethylene were studied during irradiation with fast electrons at 77°K. The irradiation dose varied from $5 \cdot 10^4$ to $2 \cdot 10^8$ rads. The spectra were taken with CF-2M spectrophotometer. The objective was to learn more about the nature of the electron traps which fix electrons during radiolysis of saturated hydrocarbons at low temperatures. After radiolysis saturated hydrocarbons exhibit photoluminescence (4000-6000 Å). The photoluminescence and color are due to stabilized ions present in the

Card 1/2

L 10838-66

ACC NR: AT5023442

saturated hydrocarbons. The number and depth of electron traps increase with the irradiation dosage. By nature, the electron traps occurring in saturated hydrocarbons during irradiation are stabilized radicals. These radicals are capable of recombination under heating.

SUB CODE: 07/ SUBM DATE: 23Feb65/ ORIG REF: 002/ OTH REF: 002

20/

Card 2/2

L 06516-67 EWT(m)/EWP(j) RM

ACC NR: AP7000492 SOURCE CODE: UR/0020/66/168/002/0360/0363

TOCHIN, V. A., KUKOL'SKIY, V. G., BUBEN, N. Ya., Institute of Chemical Physics, Academy of Sciences USSR (Institut khimicheskoy fiziki AN SSSR)

"Determination of the Yield of Stabilized Charges in Low-Temperature Radiolysis of Organic Systems"

Moscow, Doklady Akademii Nauk SSSR, Vol 168, No 2, 1966, pp 360-363

Abstract: The electron paramagnetic resonance method was used to obtain quantitative data on the yields and limiting concentrations of ion radicals stabilized in the low-temperature radiolysis of organic substances. The accumulation of paramagnetic particles during irradiation within the dose interval 0.2-30 Mrad and the change in the electron paramagnetic resonance spectra under the action of visible light were investigated on a broad range of organic substances, including saturated hydrocarbons (hexane, n-decane, 2,7-dimethyloctane, cyclohexane, dicyclohexyl-4-decane, polyethylene), aromatic hydrocarbons (benzene, toluene, ethylbenzene, styrene, cumene, diphenylmethane, polystyrene), alcohols (ethyl, isopropyl, polyvinyl), ketones (acetone, methyl ethyl ketone, acetophenone), heterocyclic compounds (tetrahydrofuran, 2-methyltetrahydrofuran, dioxane), and certain ethers and organosilicon compounds. The influence of visible light and the addition of electron acceptor additives (CCl_4, CS_2,

Card 1/2

UDC: 541.15

0923 1208

L 06516-67
ACC NR: AP7000497

naphthalene, and diphenyl) on the electron paramagnetic resonance signal were studied. This paper was presented by Academician V. V. Voyevodskiy on 4 September 1965. The authors thank D. N. Sapozhnikov for assistance in carrying out the measurements. Orig. art. has: 3 figures and 1 table. [JPRS: 37,023]

TOPIC TAGS: EPR, radiation chemistry, ketone, heterocyclic base compound, organosilicon compound, hydrocarbon

SUB CODE: 07 / SUBM DATE: 20 Aug 65 / ORIF REF: 010 / OTH REF: 005

Card 2/2 LS

NIKOL'SKIY, V. I.

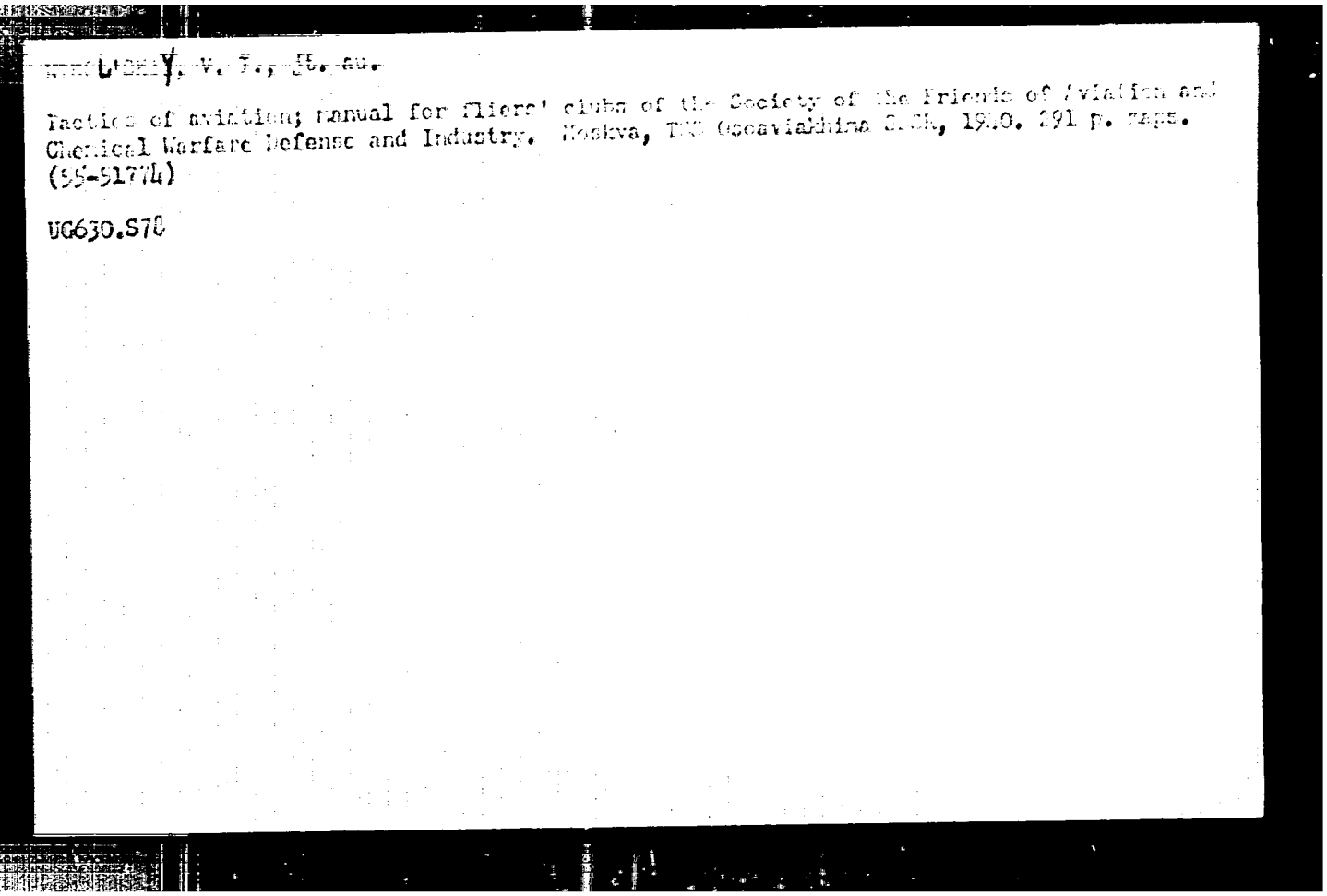
GARF, B. A., and V. I. NIKOL'SKIY.

Proektirovanie metallicheskikh konstruktsii dirizhablei. Dopushcheno v kachestve ucheb. posobiia dlia slushatelei VVK im. K. E. TSiolkovskogo. Moskva, Glav. red. aviats. lit-ry, 1939. 362 p., illus.

Title tr.: Metal airship design. Approved as a textbook for Airship Design and Construction Schools.

TL660.G3

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.



[illegible], V. I., ed.

Tactics of aviation; manual for fliers' clubs of the Society of the Friends of Aviation and Chemical Warfare Defense and Industry. Moskva, TSK (Osoaviakhima S.S.S.R., 1940. 191 p. maps. (55-51774)

UG630.S7

MOTELKIN, I.V.; POPOV, V.Ye.; NIKOL'SKIY, V.I.; MOTELKIN, V.V.; MUKASHEYEV, A.A.

Ultrasonic vibration as a means of mechanical machining of various materials. Stan. i instr. 27 no.2:16-19 F '56. (MLRA 9:7)
(Ultrasonic waves--Industrial applications)

KSENZ, Stanislav Petrovich; KANURNIKOV, Yuriy Fedorovich; MALAKSIANOV, Mikhail Nikolayevich; NIKOL'SKIY, Vsevolod Ivanovich; KHACHATUROV, Ye.A., tekhn. red.

[Avoiding breakdown in ship radar systems; repairing ship radar devices at sea] Ustranenie neispravnostei sudovykh radiolokatorov; remont morskikh navigatsionnykh RLS v more. Moskva, Izd-vo "Morskoi transport," 1962. 228 p. (MIRA 15:8)
(Radar in navigation)

48-4-32-48

SUBJECT: USSR/Luminescence

AUTHORS: Kats M.L. and Nikol'skiy V. K.

TITLE: On the Mechanism of Selective Absorption of Activator in KCl-Ag Phosphors (O mekhanizme selektivnogo pogloshcheniya aktivatora v fosforakh KCl-Ag)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, pp 553-554 (USSR)

ABSTRACT: The spectrum of selective absorption of the activator in the KCl-Ag phosphor consists of 2 intensive bands with sharp maxima at 216 and 228 mμ and one very weak band with the maximum at 245 mμ.
After irradiating the KCl-Ag phosphor with X-rays a series of new strong absorption bands arise in the long wavelength region, and 2 strong bands with maxima at 222 and 235 mμ and one weak band at 260 mμ arise in the short wavelength region. These bands can be ascribed to certain electron transitions.

From a comparison of spectra from phosphors subjected to the X-ray action and not subjected a conclusion can be drawn, that absorption bands of some part of silver ions are displaced

Card 1/2

1

TITLE: On the Mechanism of Selective Absorption of Activator in KCl-Ag Phosphors (O mekhanizme selektivnogo pogloshcheniya aktivatora v fosforakh KCl-Ag) 48-4-32/48

toward longer wavelengths under the action of X-rays. This displacement can be caused by some lattice defects (anion and cation vacancies, positive holes) some part of which are localized near the activator ions.

The report was followed by a short discussion.

No references are cited.

INSTITUTION: Saratov State University im Chernyshevskiy

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

51-4-3-11/30

AUTHORS: Kats, M.L. and Nikol'skiy, V.K.

TITLE: Absorption and Luminescence Spectra of the KBr-In Phosphor and Their Change Under the Action of X-Rays. (Spektry pogloshcheniya i lyuminestsentsii kristallofosfora KBr-In i ikh izmeneniye pri deystviyem rentgenovykh luchey.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.3, pp.354-357 (USSR)

ABSTRACT: Since In^{+} and Sn^{++} ions have iso-electron shells with identical electron configurations, therefore comparison of properties of alkali-halide phosphors containing these ions as activators is of great interest. The absorption and luminescence spectra of alkali-halide phosphors, activated with tin were reported in Refs.1-4. The present paper reports results of measurements of the absorption, excitation and luminescence spectra of KBr-In and the effect of irradiation of X-rays on the absorption spectra of this phosphor. The absorption spectra were measured by means of a quartz photoelectric spectrophotometer SF-4 and the fluorescence spectra were photographed on an ISP-51 spectrograph. The

Card 1/3

Absorption and Luminescence Spectra of the KBr-In Phosphor and Their Change Under the Action of X-Rays.

excitation spectra were studied using a monochromator from the SF-4 spectrophotometer together with a FEU-19 photomultiplier. The samples were presented by I.M. Shmurskiy and Yu.N. Zhvanko. The results are given in Figs.1-4. Fig.1 shows the absorption spectra of KBr-In (curve a) and KBr-Sn (curve b). Fig.2 shows the absorption spectra of KBr-In before (curve a) and after (curve b) irradiation with X-rays. Curve v in Fig.2 shows the effect of illumination with F-band light after X-irradiation; curves g and d show the additional absorption bands produced by X-rays. The fluorescence spectrum of KBr-In is shown in Fig.3, while Fig.4 shows the excitation spectrum of the same phosphor. From the results obtained and those given in Refs.1-4 it was found that KBr monocrystals activated with In^{+} and Sn^{++} exhibit many similarities in the absorption, excitation and luminescence spectra as well as in other properties. These similarities suggest that in the phosphors studied absorption processes are related to transitions of electrons between levels of activator ions. These activator levels are displaced by the

51-4-3-11/30

Absorption and Luminescence Spectra of the KBr-In Phosphor and Their Change Under the Action of X-Rays.

action of the internal crystalline field. Changes in the absorption spectra under the action of X-rays are due to the formation of atomic centres on capture of free electrons by activator ions. There are 4 figures and 7 references, of which 4 are Soviet, 1 German, 1 English and 1 translation of a Western work into Russian.

ASSOCIATION: Saratov State University (Saratovskiy gosudarstvennyy universitet.)

SUBMITTED: May 21, 1957.

1. Alkali-halide phosphors—Absorption—Spectrographic analysis
2. Alkali-halide phosphors—Luminescence—Spectrographic analysis
3. Indium ions—Chemical effects 4. X-rays—Applications

Card 3/3

S/058/62/000/008/044/134
A061/A101

AUTHORS: Kats, M. L., Nikol'skiy, V. K.

TITLE: On the nature of atomic centers in silver-activated alkali halide phosphors

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 42, abstract 8V295 ("Nauchn. yeznegodnik. Saratovsk. un-t. Fiz. fak. i n.-i. in-t mekhan. i fiz.", 1955, Saratov, 1960, 71 - 76)

TEXT: Various assumptions regarding the nature of centers being responsible for the atomic A band (288 mμ) that appears in KCl-Ag phosphors as a result of X-irradiation are confronted. According to one viewpoint (Kats, Ettsel', and Shul'man), the A center consists of an F center with an Ag^+ ion as one of the cations in its environment, the electron coupling being stronger with Ag^+ than with K^+. According to another concept (Shamovskiy and co-workers), thin metallic silver films forming on the surface of the substructure blocks are responsible for the A band. A number of facts is presented in support of the former hypothesis, such as the absence of color in KCl-Ag crystals X-rayed

Card 1/2

On the nature of atomic centers in...

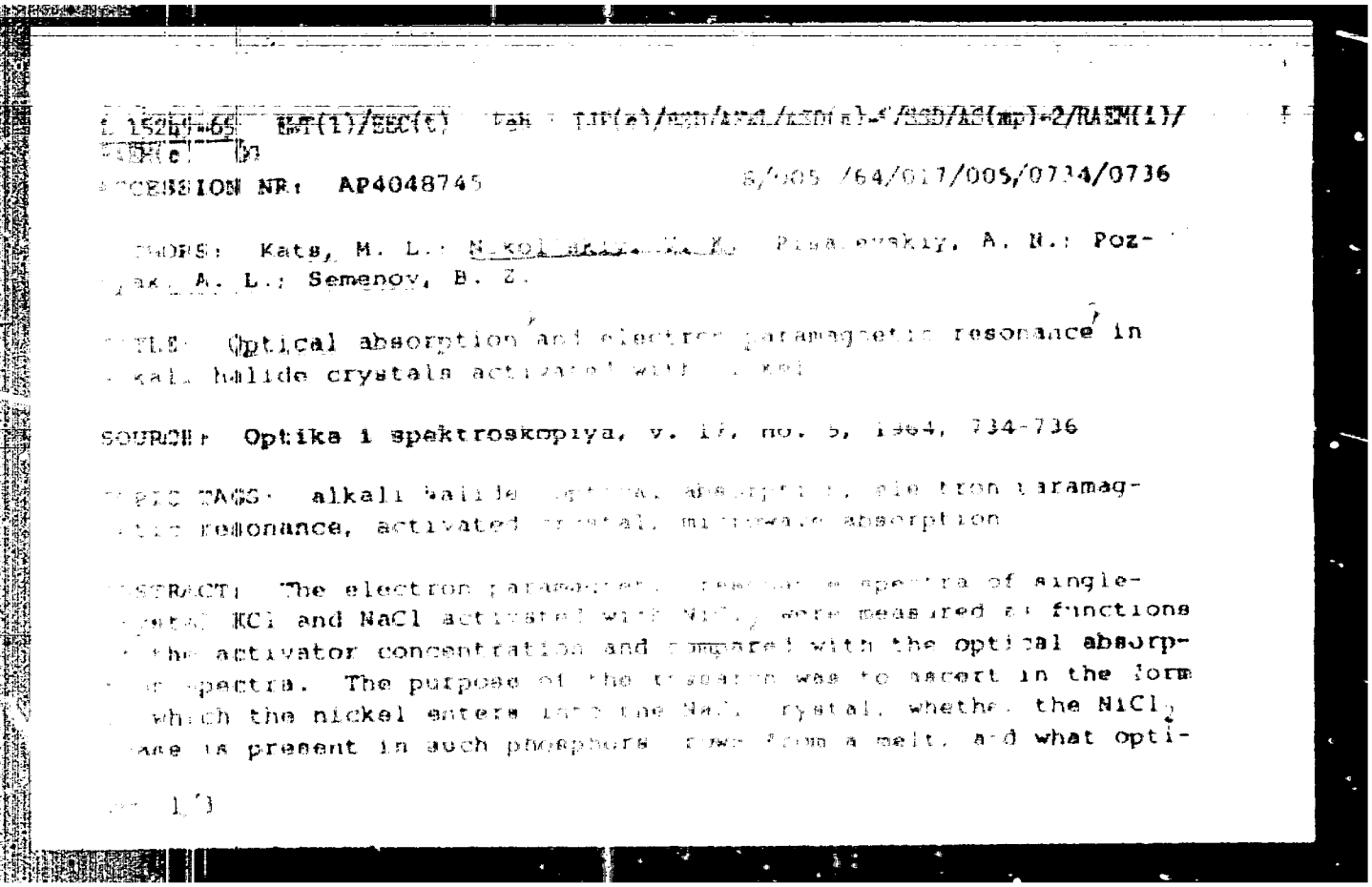
S/058/62/000/008/044/134
A061/A101

at low temperature, and the absence of the 288-mμ band in the absorption spectrum of hyperfine silver layers applied to the surface of nonactivated alkali halide crystals.

V. Kosikhin

[Abstracter's note: Complete translation]

Card 2/2



L 15264-65 EWT(1)/EEC(t) Pab IJP(c)/AEDC/ASD(a)-5/ASD/AS(mp)-2/RAEM(1)/
EEC(t) Pb

ACCESSION NR: AP4048745 S/0051/64/017/005/0734/0736

AUTHORS: Kats, M. L.; Nikol[illegible] K. K.; Pisarevskiy, A. N.; Pozdnyak, A. L.; Semenov, B. Z.

TITLE: Optical absorption and electron paramagnetic resonance in alkali halide crystals activated with [illegible]

SOURCE: Optika i spektroskopiya, v. 17, no. 5, 1964, 734-736

TOPIC TAGS: alkali halide [illegible] absorption, electron paramagnetic resonance, activated crystal, microwave absorption

ABSTRACT: The electron paramagnetic resonance spectra of single-crystal KCl and NaCl activated with Ni[illegible] were measured as functions of the activator concentration and compared with the optical absorption spectra. The purpose of the investigation was to ascertain in the form in which the nickel enters into the NaCl crystal, whether the $NiCl_2$ phase is present in such phosphors grown from a melt, and what opti-

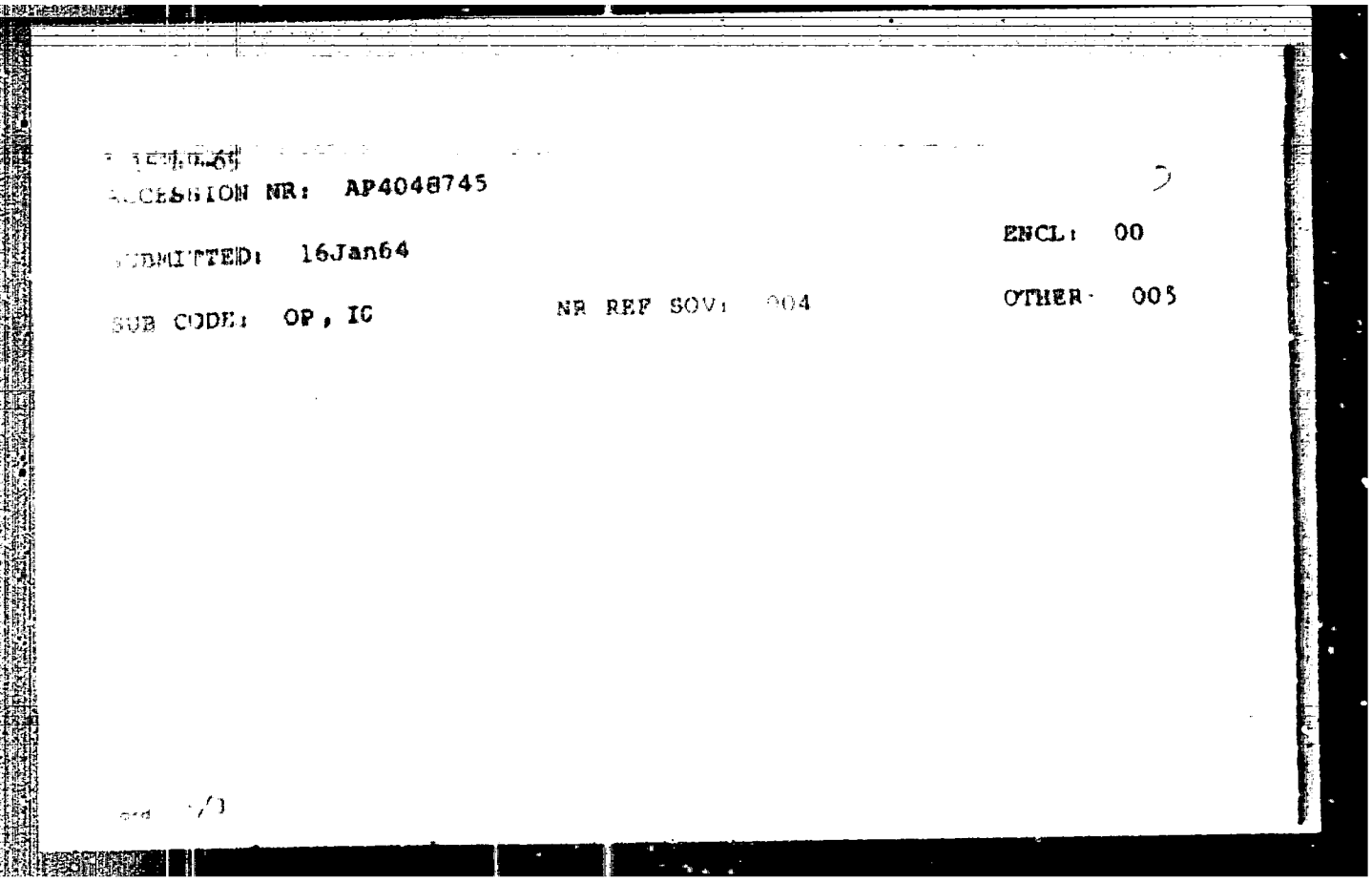
Card 1/3

15749-65
ACCESSION NR: AP4048745

al bands correspond to this phase. The EPR spectra were measured at room temperature and ~9[illegible] Mc with the aid of a spectrometer with high frequency modulation and automatic frequency control against the working cavity. The crystals measured 5 x 5 x 5 mm and were grown from the melt by the Kyropoulos method. The activator concentration ranged from [illegible] to [illegible] %. The results show that no EPR is observed in NaCl-Ni crystals with low activator concentration. The threshold concentration was [illegible] mol.% for NaCl and more than 0.06 % for KCl. The [illegible] increased noticeably with increasing activator concentration. In NaCl-$NiCl_2$ crystals with high activator concentration there is observed an $NiCl_2$ phase corresponding to an optical absorption band with maximum at 460 nm. Orig. art. has: 3 figures and . tables.

ASSOCIATION: None

Card 2/3



ACCESSION NR: AP4048745

SUBMITTED: 16Jan64 ENCL: 00

SUB CODE: OP, IC NR REF SOV: 004 OTHER: 005

L 41[illegible]-65 EWT(1)/EPA(w)-2/EEC(t)/EEC(b)-2/EWA(m)-2/EWA(h) Pz-6/Peb/Pi-4

ACCESSION NR: AF5007110 UR/0109/65/010/003/0578/0581

AUTHOR: Kozlov, I. G.; Nikol'skiy, V. K.; Finkel', A. G.

TITLE: Studying beams of electrons moving in a high vacuum by an optical method

SOURCE: Radiotekhnika i elektronika, v. 10, no. 3, 1965, 578-581

TOPIC TAGS: electron beam, electron beam tube

ABSTRACT: A new method of photographing an electron beam in an envelope containing residual gases of unknown composition (having however, the intensity of radiation in the blue-green zone higher than in the red zone) at 10^{-7}—10^{-8} torr is described. High-sensitivity orthochromatic plates and a high-aperture-ratio objective are used. Even with very low current densities (0.0001 amp/cm^2) and at 3×10^{-7} torr, the exposure time was a few minutes (not a few hours as given by L. T. Wallmark, J. Appl. Phys., 1953, 24, 590). Special attention was paid to a

Card 1/2

L 61299-65
ACCESSION NR: AP5007110

complete elimination of the heater g'ow. Photographs of electron beams in a K-band reflex klystron and in a bifilar-helix focusing structure are shown. It is noted that the maximum luminescence does not always correspond to the maximum space-charge density in the beam. "In conclusion, the authors wish to thank P. V. Golubkov for his attention to the work." Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 03Feb64 ENCL: 00 SUB CODE: EC, OP

NO REF SOV: 001 OTHER: 003

Card 2/2

USSR/Forestry - Forest Plants. K-5

Abs Jour : Ref Zhur - Biol., No 2, 1958, 5927

Author : Nikol'skiy, V.B.

Inst : Azerbaydzhan Sciences Research Institute of Forest Economy and Amelioration (agrolesomelior).

Title : On the Problem of Growing Monthorny Honey Locust in Azerbaydzhan.

Orig Pub : Byul. nauchnotekhn. inform. Azerb. n.-i. in-ta lesn. kh-va i agrolesomelior., 1957, No 1-2, 52-56

Abstract : Obervations of the growth of the thornless honey-locust in a nursery in Apsheron have shown that the seeds have little growth energy but that the seedlings grow rapidly (to a height of 92 cm. by the second year). In the school four-year old seedlings attained a height of 370 cm. while in the Bardinskiy forest economy -- in the forest belt -- they reached a height of five meters in three years.

Card 1/1

L 10237-66 EWT(1)/ETC/EPF(n)-2/EWG(m) IJP(c) AT/GS

ACC NR: AT5028595 SOURCE CODE: UR/0000/65/000/000/0526/0532

AUTHOR: Dushin, L. A.; Kononenko, V. I.; Pavlichenko, O. S.; Nikol'skiy, V. K.; Bruhnchko, L. V.

ORG: none

TITLE: Microwave and spectroscopic investigation of an electrodeless induction discharge

SOURCE: Konferentsiya po fizike plazmy i problemam upravlyayemogo termoyadernogo sinteza. 4th, Kharkov, 1963. Fizika plazmy I problemy upravlyayemogo termoyadernogo sinteza (Physics of plasma and problems of controllable thermonuclear synthesis); doklady konferentsii, no. 4. Kiev, Naukova dumka, 1965, 526-532

TOPIC TAGS: plasma diagnostics, plasma pinch, microwave plasma, microwave spectroscopy, gas discharge spectroscopy

ABSTRACT: Plasma heating experiments where conditions favorable to strong microwave emission occur are described. The apparatus used for production of microwaves is a theta-pinch device with maximum mirror magnetic field of $1.3 \cdot 10^{-6}$ a/m having a period of $8.6 \cdot 10^{-6}$ sec and employing high frequency preionization. Microwave and optical diagnostics were used to determine the plasma parameters. Three microwave signals with a wide range of frequencies (9.4 Gc, 37 Gc, 140 Gc) were used to probe the

Card 1/3

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ACC NR: AT5028595

plasma outside and within the theta coil region. It was established using microwave propagation perpendicular to the plasma (and magnetic field) axis that a plasma density higher than 2.4×10^{14} cm^{-3} exists for 6.0×10^{-5} sec. Density vs time plots are given for different capacitor voltages (driving the theta-pinch discharge). The measurements indicate that the plasma density outside the coil region decreases in accordance with a diffusion mechanism while the plasma inside the theta-coil region decreases due to some more rapid loss mechanism. The spectral measurements show that the hydrogen is highly ionized, radiating only at magnetic field minima. The impurity lines also appear at these minima, while at other times continuum radiation dominates. The charged-particle densities are shown to increase with the initial pressure as determined from the line width of H_β. In addition, electron temperature history was determined from observation of singlet and triplet lines of H_β which was introduced in small quantities. Electron temperature (T_e) peaks occurred during both maximum electric and maximum magnetic fields (Fig. 1). Both microwave and spectral measurements were found to be consistent. Orig. art. has: 9 figures. [14]

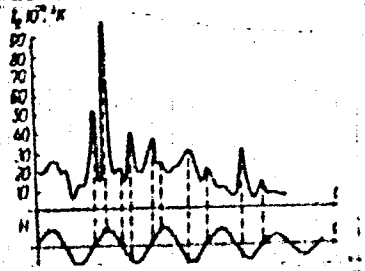
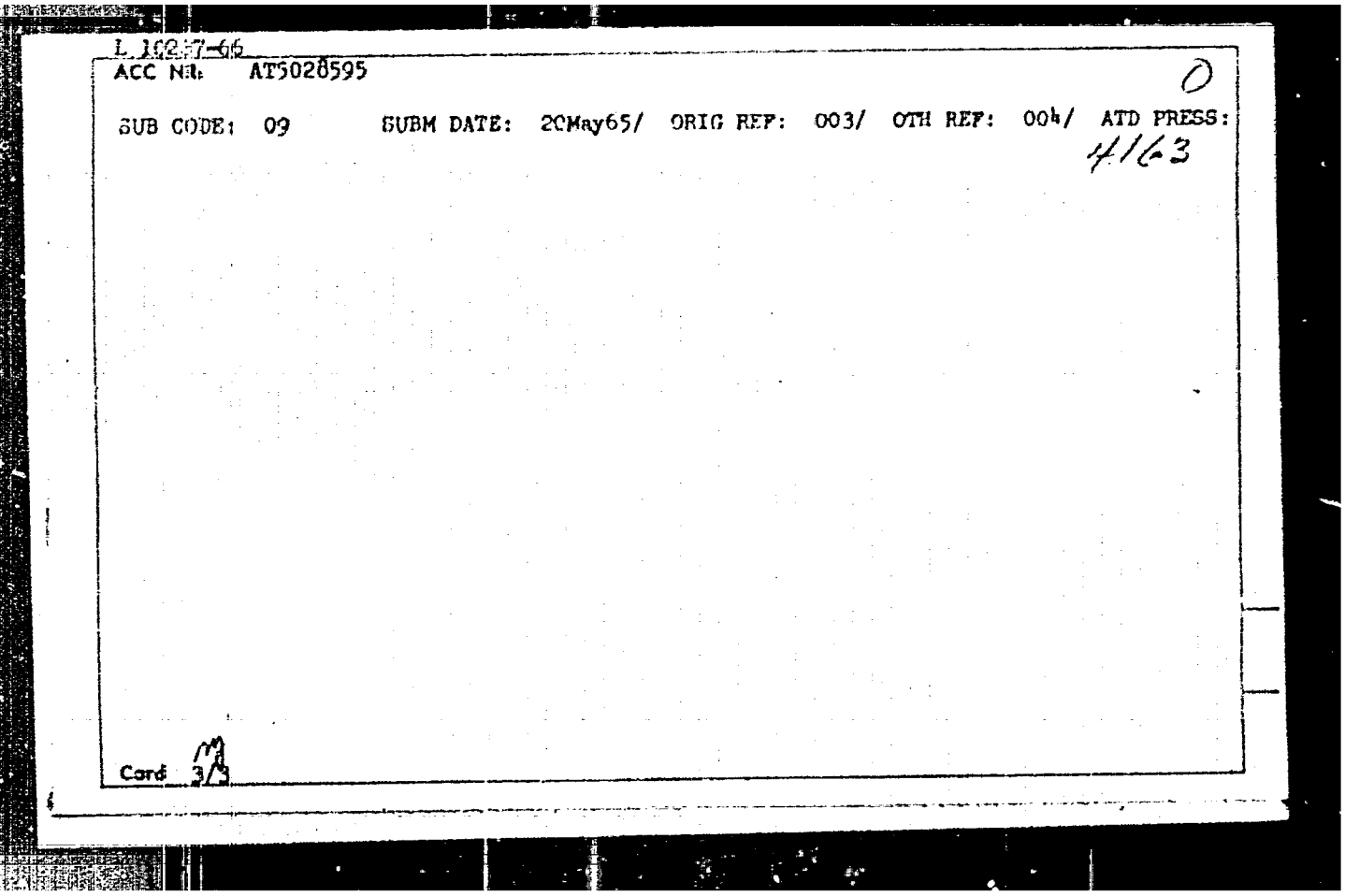


Fig. 1. Variation of T_e with time
$p = 1.3$ N/m^2 $U = 20$ kv

Card 2/2



L 10257-66
ACC NR: AT5028595

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SUB CODE: 09 SUBM DATE: 20May65/ ORIG REF: 003/ OTH REF: 004/ ATD PRESS:
4163

Card 3/3

RABINOVICH, B.V., dotsent, kand.tekhn.nauk; BOBRYAKOV, G.I., kand.tekhn.nauk; NIKOL'SKIY, V.K., inzh.

Investigating hydraulic resistance of molds. Izv.vys.ucheb.zav.; mashinostr. no.4:64-72 '60. (MIRA 14:4)

1. Moskovskiy avtomekhanicheskiy institut.
(Molding (Founding))

RABINOVICH, B.V., kand.tekhn.nauk; NIKOL'SKIY, V.M., inzh.

Pouring basins for medium and large castings. Izv.vys.ucheb.zav.; mashinostr. no.4:95-102 '60. (MIRA 14:4)

1. Moskovskiy avtomekhanicheskiy institut.
(Founding)

NIKOL'SKIY, V. M.

25599 NIKOL'SKIY, V. M. Vliyanie Meteorologicheskikh Faktorov Na Rezhim Nezhenikh Urovney Ravninnykh Rek. Trudy Leningr. In-ta Inzhenerov Vod. Transporta, Vyp. 15, 1949, S 58-68

Sot Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

112-3-5388

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p. 47 (USSR)

AUTHOR: Nikol'skiy, Vs. M.

TITLE: Effect of Hydrologic Inertia on the Height of the Lowest Bank-Line Level of Lowland Rivers (Vliyaniye gidrologicheskoy inertsii na vysotu nizshnego mezhennogo urovnya vody ravninnykh rek)

PERIODICAL: Tr. Leningr. in-ta inzh. vod. transp., 1956, Nr 23, pp. 43-45

ABSTRACT: Bibliographic entry.

ASSOCIATION: Leningrad Institute of Engineering and Water Transportation (Leningr. in-t inzh. vod. transp.)

Card 1/1

VOLKOVA, I.B.; MALIVKIN, D.V.; SLATVINSKAYA, Ye.A.; BOGOMAZOV, V.M.; GAVRILOVA, O.I.; GUREVICH, A.B.; MUDROV, A.M.; NIKOL'SKIY, V.M.; OSHURKOVA, M.V.; PETRENKO, A.A.; POGREBITSKIY, Ye.O.; RITENBERG, M.I.; BOCHKOVSKIY, F.A.; KIM, N.G.; LUSHCHIKHIN, G.M.; LYUBER, A.A.; MARKOVTSOV, A.V.; SENDERZON, E.M.; SINITSYN, V.M.; SHORIN, V.P.; BELYANKIN, L.F.; VAL'TS, I.E.; VLASOV, V.M.; ISHINA, T.A.; KONIVETS, V.I.; MARKOVICH, Ye.M.; NOKRINSKIY, V.V.; PROSVIRYAKOVA, Z.P.; RADCHENKO, O.A.; SEMERIKOV, A.A.; FADDEYEVA, Z.I.; BUTOVA, Ye.P.; VERBITSKAYA, Z.I.; DZENS-LITOVSKAYA, O.A.; DUBAR', G.P.; IVANOV, M.V.; KARPOV, N.F.; KOLESNIKOV, Ch.M.; NEFED'YEV, L.P.; POPOV, G.G.; SHTEMPEL', B.M.; KIRYUKOV, V.V.; LAVROV, V.V.; SAL'NIKOV, B.A.; MONAKHOVA, L.P.[deceased]; MURATOV, M.V.; GORSKIY, I.I., glav. red.; GUSEV, A.I., red.; MOLCHANOV, I.I., red.; TYZHNOV, A.V., red.; SHABAROV, N.V., red.; YAVORSKIY, V.I., red.; REYKHERT, L.A., red.izd-va; ZAMARAYEVA, R.A., tekhn. red

[Atlas of maps of coal deposits of the U.S.S.R.]Atlas kart ugleznakopleniia na territorii SSSR. Glav. red. I.I.Gorskii. Zam. glav. red. V.V.Nokrinskii. Chleny red. kollegii: F.A.Bochkovskiy i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 17 p.
(MIRA 16:3)

1. Akademiya nauk SSSR. Laboratoriya geologii uglya. 2. Chlen-korrespondent Akademii nauk SSSR (for Muratov).
(Coal geology—Maps)

NIKOL'SKIY, Vladimir Mikhaylovich; [illegible], V.N., [illegible]. Izdat. Nauk, otv. red.

[Upper Paleozoic coal-bearing formation in the Yenisey Valley of the Tunguska Basin] Verkhnepaleozoiskaia uglenosnaia formatsiia prieniseiskoi chasti Tungusskogo basseina. Moskva, Nauka, 1965. 93 p. (MIRA 18:4)

MOROZOV, N.V., kand.tekhn.nauk; USHKOV, F.V., kand.tekhn.nauk; NIKOL'SKIY, V.N., kand.tekhn.nauk; SPIVAK, N.Ya., kand. tekhn.nauk; TSIMBLER, V.G., insh.; STRASHNYKH, V.P., red.izd-va; ABRAMOVA, V.M., tekhn.red.

[Instructions for designing, manufacturing, and using wall panels in the construction of apartment houses and public buildings] Ukazaniia po konstruirovaniiu, izgotovleniiu i primeneniiu stenovykh panelei v stroitel'stve zhilykh i obshchestvennykh zdanii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1961. 149 p.
(MIRA 15:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut stroitel'noy fiziki i ograzhdayushchikh konstruktsiy.
(Precast concrete construction) (Walls)

KOMAROV, Fedor Vasil'yevich; NIKOL'SKIY, Vladimir Nikolayevich;
BORISOV, G.S., red.; GEKHT, M.R., red.; SUKHAREVA, R.A., tekhn.red.

[Experience in modernising machine tools] Iz opyta modernizatsii metalloreshushchikh stankov. Moskva, Mosk.dom nauchno-tekhn. propagandy im. F.E.Dzerzhinskogo, 1957. 21 p. (Peredovoi opyt proizvodstva. Seriia "Mashinostroenie," no.9) (MIRA 10:12)
(Machine tools)

NIKOL'SKIY, V.N., kand. tekhn. nauk; SPIVAK, N.Ya., kand. tekhn. nauk; BAULIN, D.K., inzh.; BUADZE, V.Sh., inzh.; KREYTAN, V.G., kand. tekhn. nauk; PERMYAKOV, S.I., kand. tekhn. nauk; USOV, A.L., inzh.; KOSHKIN, V.G., kand. tekhn. nauk; MARAVIN, B.L., inzh.; ERENBURG, A.I., inzh.; KOCHESHKOV, V.G., inzh.; RUBANENKO, B.R., glav. red.; ROZANOV, N.P., zam. glav. red.; ONUFRIYEV, I.A., red.; YUDIN, Ye.Ya., red.; NASONOV, V.N., red.; ISIDOROV, V.V., red.; MAKARICHEV, V.V., red.; FINKINSHTEYN, B.A., inzh. red.;

[Prefabricated floor and ceiling structures] Poly i perekrytiia industrial'noi konstruktsii. Moskva, Gosstroiizdat, 1963. 71 p. (MIRA 16:12).

1. Akademiya stroitel'stva i arkhitektury SSSR. TSentral'nyy nauchno-issledovatel'skiy i eksperimental'no-proyektnyy institut industrial'nykh zhilykh i massovykh kul'turno-bogatykh zdaniy. 2. Nauchno-issledovatel'skiy institut stroitel'noy fiziki i ograzhdayushchikh konstruktsii (for Nikol'skiy, Usov). 3. TSentral'nyy nauchno-issledovatel'skiy i eksperimental'no-proyektnyy institut industrial'nykh zhilykh i massovykh kul'turno-bogatykh zdaniy (for Buadze, Baulin, Spivak, Kreytan, Kocheshkov). 4. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov Akademii stroitel'stva i arkhitektury SSSR (for Erenburg).

(Floors) (Ceilings)

NIKOL'SKIY, V., kand. tekhn. nauk

"Theory of the soundproofing of exterior elements" by V.I. Zaborov. Reviewed by V. Nikol'skii. Zhil. stroi. no.5:29-30 '63. (MIRA 16:7)

(Soundproofing) (Zaborov, V.I.)

GUSEV, Nikolay Mikhaylovich, doktor tekhn. nauk, prof.; KLIMOV, Pavel Petrovich, kand. tekhn. nauk, dots.; NIKOL'SKIY, V.N., kand. tekhn. nauk, retsenzent; KLYUYEV, S.A., kand. tekhn. nauk, retsenzent; VASIL'YEV, B.P., kand. tekhn. nauk, nauchn. red.

[Physics in construction] Stroitel'naia fizika. Moskva, Stroiizdat, 1965. 225 p. (MIRA 18:4)

NIKOL'SKIY, V. N.

"Sound Insulation of Floors on an Elastic Lining Over a Reinforced-Concrete Ceiling."
Sub 18 May 51, Sci Res Inst of Construction Engineering, Academy of Architecture, USSR
Cand Tech Sci.
Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

NIKOL'SKIY, V. N.

MOROZOV, N.V.; NIKOL'SKIY, V.N., kandidat tekhnicheskikh nauk; TIMOFEYEV, A.K., kandidat tekhnicheskikh nauk; SHERENTSIS, A.A., kandidat tekhnicheskikh nauk; ROSTOVTSEVA, M.P., redaktor; DAKHNOV, V.S., tekhnicheskiy redaktor.

[Construction procedures for the soundproofing of walls, floors, and ceilings of multistoried apartment houses] Konstruktivnye resheniia zvukoizoliatsii mashkvartirnykh sten i mashdumashnykh perekrytii mnogoetashnykh shilykh domov. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1954. 39 p. (MLRA 7:8)

(Soundproofing)

NIKOL'SKIY, V.N.; ORFANITSKAYA, L.P.

Noise from plumbing and elevators in apartment and public buildings.
Gig. i san. no.10:19-20 O'54. (MLRA 7:11)

1. Iz Nauchno-issledovatel'skogo instituta stroitel'noy tekhniki Akademii arkhitektury SSSR.
(HOUSING,
noise control)
(NOISE,
control in houses)

TIMOFEYEV, A.K., kandidat tekhnicheskikh nauk; NIKOL'SKIY, V.N., kandidat tekhnicheskikh nauk.

Soundproofing classrooms in school buildings. Gor.khoz.Mosk. 28 no.5: 9-11 My '54. (MLRA 7:6)
(Soundproofing) (Schoolhouses)

MOROZOV, N.V., kandidat tekhnicheskikh nauk; [illegible], kandidat tekhnicheskikh nauk; DEMIN, G.V., inzhener; YAKUBOV, E.A., inzhener.

Experimental precast reinforced concrete floors of the divided type. Bet. i zhel.-bet. no.6:294-298 N '55. (MLRA 9:1)

(Floors, Concrete)

NIKOL'SKIY, V.M., kand. tekhn. nauk; CHERKOV, D.A., inzh.

Using mineral wool products in making soundproofing materials.
Mul. stroi. tekh. 12 no.1:17-18 Ja '55. (MLRA 11:12)

1.Nauchno-issledovatel'skiy institut Stroytekhniki Akademii arkhitektury SSSR (for Nikol'skiy). 2.Vsesoyuznaya gosudarstvennaya kontora po proyektirovaniyu termoizolyatsionnoy promyshlennosti (for Cherkov).
(Acoustical materials) (Mineral wool)

NIKOL'SKIY, V.N., kand. tekhn. nauk

Using spun glass in soundproofing ceilings. Mul. stroi. tekh. 12 no.7:12-13 Jl '55. (MIRA 11:12)
(Glass fibers)

NIKOL'SKIY, K.N., kandidat tekhnicheskikh nauk; SHATAGINA, A.G., kandidat tekhnicheskikh nauk; PUSHNY, M.S., inzhener.

Sound insulating sheets made of packing materials. Gor.khoz.Mosk. 29 no.1:23-24 J '55. (MLRA 8:3)
(Soundproofing)

NIKOL'SKIY, V.N.

Results of investigations of sound insulation properties of profiled wood fiber panels. Gor.khoz.Mosk.29 no.9:4-5 S'55. (MLRA 8:12)

1. Akademiya arkhitektury SSSR.
(Soundproofing)

NIKOL'SKIY, V., kandidat tekhnicheskikh nauk.

Soundproofing of walls and ceilings in farm buildings. Sel'. stroi. 11 no.11:22-23 N '56. (MLRA 10:1)
(Soundproofing)

NIKOL'SKIY, V.N., kandidat tekhnicheskikh nauk.

Use of mineral wool mats in bundles made of synthetic resins for sound insulating walls. Mekh.stroi.tekh. 13 no.7:20 Jl '56. (MLRA 9:9)
(Mineral wool) (Insulation (Sound))

NIKOL'SKIY, V., kandidat tekhnicheskikh nauk.

Soundproofing of interior structures in an apartment house. Zhil.-kom. khoz. 7 no.2:6-8 '57. (MLRA 10:4)
(Apartment houses) (Insulation (Sound))

NIKOL'SKII, V., kandidat tekhnicheskikh.

Soundproofing doors and windows. Zhil.-kom.khoz. 7 no.7:10-12 '57. (MIRA 10:10)

(Soundproofing) (Windows) (Doors)

NIKOL'SKIY, V.N., kand. tekhn. nauk.

International congresses on acoustics and electro-acoustics. Mekh. stroi. tekh. 14 no.11:31-32 N '57. (MIRA 11:1)
(Paris--Architectural acoustics--Congresses)

NIKOL'SKIY, V., kand.tekhn.nauk; OSIPOV, G., inzh.

Modern methods for soundproofing of apartment houses. Mekh.stroi. (MIRA 11:12)
Mosk. 1 no.10:22-23 O '58.
(Moscow--Architectural acoustics)

NIKOL'SKIY, V., kand.tekh.nauk

Soundproof properties of partitions made of vibrated reinforced concrete panels. Na stroi.Mosk. 1 no.12:19-20 D '58. (MIRA 11:12)
(Concrete slabs) (Acoustical materials)

NIKOL'SKIY, V., kand.tekhn.nauk

Soundproofing of sanitary engineering equipment in apartment houses. Zhil.-kom. khoz. 8 no.3:4-5 '58. (MIRA 11:4)
(Sanitary engineering) (Soundproofing)

NIKOL'SKIY, V.N., kand.tekhn.nauk; TUMARKIN, D.M., insh., nauchnyy red.; GONYACHEVA, T.V., red.izd-va; VOROBIN, K.P., tekhn.red.; DOROVENT, N.K., tekhn.red.

[Soundproofing and architectural acoustics] Voprosy zvukoizoliatsii i arkhitekturnoi akustiki. Pod red. V.N.Nikol'skogo. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam. 1959. 154 p. (MIRA 12:7)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut stroitel'noy fiziki i ogranichivayushchikh konstruktsiy.
(Soundproofing)

TEMKIN, L.Ye., inzh., red.; SHERENTSIS, A.A., kand. tekhn. nauk, red.; NIKOL'SKIY, V.N., kand. tekhn. nauk, red.; BRILING, R.Ye., kand. tekhn. nauk, red.; IL'INSKIY, V.M., kand. tekhn. nauk, red.

[Construction specifications and regulations] Stroitel'nye normy i pravila. Moskva, Gosstroiizdat. Pt.2. Sec.V. ch.6. [Enclosing structures; design specification] Ograzhdaiushchie konstruktsii; normy proektirovaniia (SNiP II-V. 6-62). 1963. 18 p. (MIRA 17:3)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosstroy SSSR (for Temkin). 3. Nauchno-issledovatel'skiy institut stroitel'noy fiziki Akademii stroitel'stva i arkhitektury SSSR (for Nikol'skiy). 4. Nauchno-issledovatel'skiy institut Glavnogo upravleniya po zhilishchnomu i grazhdanskomu stroitel'stvu v g.Moskve(for Briling). 5. Moskovskiy inzhenerno-stroitel'nyy institut (for Il'inskiy). 6. Tsentral'nyy nauchno-issledovatel'skiy i proektno-eksperimental'nyy institut industrial'nykh, zhilykh i massovykh [illegible] turno-bytovykh zdaniy Akademii stroitel'stva i arkhitektury SSSR (for Sherentsis).

NIKOL'SKIY, V., kand.tekhn.nauk

Soundproofing properties of hollow-type ceilings made of vibrated panels. Na stroi.Mosk. 2 no.2:24-25 F '59. (MIRA 12:3)
(Ceilings) (Soundproofing)

NIKOL'SKIY, V., kand.tekhn.nauk

Soundproofing of apartment houses and public buildings. Zhil. stroi. no.4:25-28 Ap '60. (MIRA 13:8)
(Architectural acoustics)

NIKOL'SKIY, V.N., kand.tekhn.nauk; OSIPOV, O.L., kand.tekhn.nauk

Soviet work in the International Acoustical Committee. Izv. AS1A no.4:131-132 '60. (MIRA 14:4)

(Acoustical materials)

NIKOL'SKIY, V.N., kand.tekhn.nauk; OSIPOV, G.L., kand.tekhn.nauk; TIMOFEYEV, A.K., kand.tekhn.nauk

Soviet and foreign norms for soundproofing. Stroi.i arm. 25 no.9:60-65 S '60. (MIRA 13:9)

1. Nauchno-issledovatel'skogo instituta stroitel'noy fiziki i ograzhdayushchikh konstruktsiy Akademii stroitel'stva i arkhitektury SSSR.

(SOUNDPROOFING)

NIKOL'SKIY, V.N.; KOVRIGIN, S.D.; LUKANIN, V.N.; KOVRIGIN, S.D.

Studies on the soundproofing capacity of partitions of vibration-rolled concrete panels. Gig.i san. 25 no.9:114-116 S '60. (MIRA 13:9)

(SOUNDPROOFING) (CONCRETE SLABS)

NIKOL'SKIY, V.N., kand.tekhn.nauk; OSIPOV, G.L., kand.tekhn.nauk

Soundproofing exterior elements of apartment houses in Novye Cheremushki. Izv. ASiA no.1:87-94 '61. (MIRA 14:7)
(Novye Cheremushki--Soundproofing)

ZABORov, V.I., kand.tekhn.nauk; NIKOL'SKIY, V.N., kand.tekhn.nauk

Practical method of calculating ceiling sound insulation from percussive noises. Izv.ASIA no.3:107-113 '62. (MIRA 15:11)
(Ceilings—Soundproofing)

NIKOL'SKIY, V.N.

Coordinating conference on acoustical engineering. Akust.zhur. 8 no.3:375 '62. (MIRA 15:11)
(Acoustical engineering)

NIKOL'SKIY, Vladimir Nikolayevich; ZABOROV, Vladimir Isaakovich; BEGAK, B.A., red.; BOROVNEV, N.K., tekhn. red.

[Soundproofing large-panel buildings; a guide for designers] Zvukoizoliatsiia krupnopanel'nykh zdanii; posobie proektirovshchikov. Moskva, Stroiizdat, 1964. 241 p. (MIRA 17:3)

NIKOL'SKIY, V. N.

Nikol'skiĭ, V. N. Best approximation and basis in a Fréchet space. Doklady Akad. Nauk SSSR (N.S.) 59, 639-642 (1948). (Russian)

The author starts from a basis $\{u_i\}$ in an F-space [cf. Banach, Théorie des Opérations Linéaires, Warsaw 1932] and states, with a few indications of proof, that there exists a metric [illegible], topologically equivalent to the [illegible] F-metric, such that for all n the polynomial $\sum_1^n c_i u_i$ making [illegible] $\sum_1^n c_i u_i$) a minimum is the nth partial sum of $u = \sum_1^\infty c_i u_i$. Furthermore, he shows that there exists a metric which in addition to this has the following property: the [illegible] $\sum_{m+1}^{n} c_i u_i$ making ($u - \sum_{m+1}^{n}$ [illegible]) a minimum is the nth remainder of $u = \sum_1^\infty c_i u_i$; this metric can be chosen so that [illegible] is monotone for any u and [illegible]. Finally, a necessary and sufficient condition for $\{u_i\}$ to be a basis in an F-space is that (i) it is complete, (ii) it is possible to [illegible] a metric (a) equivalent to the original F-metric [illegible] that for all c_i, n and $m < n$ the polynomial $\sum_1^m c_i u_i$ making ($\sum_1^n c_i u_i - \sum_1^m c_i u_i$) a minimum is $\sum_1^m c_i u_i$.

František Wolf (Berkeley, Calif.)

Source: Mathematical Reviews, [illegible]

NIKOL'SKIY, V. N.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 302 - I

BOOK Call No.: QA43.D34

Authors: DAVYDOV, M. A., KOROVKIN, P. P., NIKOL'SKIY, V. N.
Full Title: COLLECTION OF PROBLEMS ON MATHEMATICAL ANALYSIS
Transliterated Title: Sbornik zadach po matematicheskomu analizu

Publishing Data
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Text Data
Coverage: 2412 problems presented are divided into eleven groups, listed in 66 subgroups and eleven chapters, as shown in the attached abstracted Table of Contents. Solutions are given for every individual problem.

The book does not present anything new, but the system

1/2

adopted in the classification of the various problems, as well as some of the individual problems offered seem to be of pedagogical interest.

NIKOL'SKIY, V.N.

1-F/I

HS

Nikol'skii, V. N. Some questions of best approximation in a function space. Uč. Zap. Kalinin. Pedagog. Inst. 16 (1953), 119-160 (1954). (Russian)

The author studies the question of best approximation of elements of a space E of type F [for terminology see Banach, Théorie des opérations linéaires, Warsaw, 1932, ch. 3] by means of linear combinations of a given denumerable sequence $\{v_k\} \subset E$. In connection with this there are introduced various types of metrics of the space E (T-metric, K-metric, canonical metric, weak T-metric, etc.).

1/✓

Definition. Let $\{u_k\}$ be a basis for E. If for each $x \in E$ and each n the linear combination $\{u_k\}_1^n$ deviating least from x is unique and coincides with the nth partial sum of the expansion of x in the basis $\{u_k\}$, then the metric of E is called a T-metric with respect to $\{u_k\}$.

In each space E of type F one may introduce a T-metric with respect to an arbitrary basis which is equivalent to the original one (convergence in one implies convergence in the other). If (here the system $\{u_k\}$ need not be a basis) for each element of the form $x = \sum_{k=1}^{m} c_k u_k$ and each $n < m$ the linear combination of $\{u_k\}_1^n$ deviating least from x is unique and equal to $\sum_{k=1}^{n} c_k u_k$, then the metric of the space is called a weak T-metric with respect to $\{u_k\}$. Theorem: In order that a system $\{u_k\}$ be a basis for E it is necessary and sufficient that it be complete

(over)

6

Nikol'skii, V. N.

and that it be possible to introduce in E an equivalent weak T-metric.

A proof of the following proposition serves as an example of an application of this theorem. If

$$\lambda_{k+1}=\lambda_k(2p_k+1)\ (k=1, 2, \cdots, \lambda_k \text{ and } p_k \text{ integers}),$$

then the system of Čebyšev polynomials $\{T_{\lambda_k}(x)\}$ $(-1\leq x\leq 1)$ is a basis (in the metric $C([-1, +1])$) of its closed linear hull.

2/2

There are also established a series of theorems similar to the one above. In particular, the following theorem concerning Banach spaces is proved. Let $\{u_k\}$ be a basis in the Banach space E. If $R_n(x)$ is nth remainder in the expansion of x in $\{u_k\}$ and $E_n(x)$ is the best approximation of x by linear combinations of $u_1, \cdots, u_n$, then

$$\mu\|R_n(x)\|\leq E_n(x)\leq\|R_n(x)\|,$$

where $\mu>0$ depends only on E and $\{u_k\}$.

Finally there are given necessary and sufficient conditions in order that the system $\{u_k\}$ be a basis in a Banach space E. *I. P. Natanson* (RZMat 1955, no. 5127)

Call Nr: AF 1108625

Transactions of the Third All-union Mathematical Congress, Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Nikol'skiy, V. N. (Kalinin). Operator Properties of Polynomials of the Best Approximation. 117-118

DAVIDOV, Nikolay Alekseyevich; KOROVKIN, Pavel Petrovich; NIKOL'SKIY, Vladimir Nikolayevich; OSTIANU, N.M., red.; SMIRNOV, G.I., tekhn.red.

[A collection of problems in mathematical analysis] Sbornik zadach po matematicheskomu analizu. Izd.2-oe. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1957. 194 p. (MIRA 11:1)
(Mathematical analysis--Problems, exercises, etc.)

NIKOL'SKIY, V.M.

Operational properties of the polynomials of best approximation.
Usp.mat.nauk 12 no.3:353-358 My-Je '57. (MIRA 10:10)
(Polynomials)

NIKOL'SKIY, V. N.

USSR/Electricity - Furnaces, Electric Nov 51

"The Rectifying Action of the Arc in a Three-Phase Steel-Smelting Furnace," V. N. Nikol'skiy, Engr, Kuybyshev Industrial Inst imeni Kuybyshev

"Elektrichestvo" No 11, pp [illegible]-57

Results of a study of steel-smelting arc furnaces, which revealed the presence of clear dc components in the arc voltages. Points out the effect of the smelting process upon these components and discusses their role in the operation of the furnace equipment. Submitted 20 Apr 51.

201T60

NIKOL'SKIY, V. N.

NIKOL'SKIY, V. N.: "Investigation of a method of determining the parameters of the electrical circuit for a three-phase arc furnace." Min Higher Education USSR. Kuybyshev Industrial Inst imeni V. V. Kuybyshev, Kuybyshev, 1956. (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCE).

So.: Knizhnaya Letopis', Moscow No. 15, 1956

NIKOL'SKIY, V.N.

137-1958-3-4729

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 49 (USSR)

AUTHOR: Nikol'skiy, V. N.

TITLE: Voltage-Drop Measurements in an Arc-furnace Circuit and Resistance Determination Therefrom (Izmereniye padeniy napryazheniya v tsepi dugovoy pechi i opredeleniye po nim yeye soprotivleniy)

PERIODICAL: Sb. nauchn. tr. Kuybyshevsk. industr. in-t, 1956, Nr 6, Vol 1, pp 51-56

ABSTRACT: In order to plot the operating characteristics of an arc furnace it is necessary to determine the basic parameters of its electrical circuit, namely the inductive reactance, x, and the active resistance, r, of each phase. The customary methods of connecting meters present practical difficulties since readings have to be taken simultaneously on several instruments which fluctuate constantly. The Author proposes a measuring system employing an auxiliary transformer with a transformation ratio and connection of winding groups identical to that of the transformer operating with the arc furnace system under investigation. After the instrumen: readings have been obtained, simple equations may be

Card 1/2

BRUSILOVSKIY, D.A.; BULGAKOV, L.N.; GENIS, B.M.; KVARTIN, L.M.; KRASOVSKIY, Ye.S.; MIKHAYLOV, D.I.; NATOCHANNYY, A.S.; NIKOL'SKIY, V.N.; POPOV, M.P.; SIGODZINSKIY, A.A.; SKOROSHKIN, A.F.; CHASOVNIKOV, G.V.; DERBISHER, A.V., kand. ekon. nauk, red.; DULKIN, N.A., spets. red.; BONDAROVSKAYA, G.V., red.; TORSHINA, Ye.A., tekhn. red.

[Overall automation and modernization of equipment and production processes at the First State Bearing Plant] Kompleksnaia avtomatizatsiia i modernizatsiia oborudovaniia i protsessov proizvodstva na Pervom gosudarstvennom podshipnikovom zavode. Moskva, TSentr. biuro tekhn. informatsii, 1959. 84 p. (MIRA 15:1)

1. Russia (1917- R.S.F.S.R.) Moskovskiy gorodskoy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva.
(Moscow—Bearing industry) (Automation)

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16.4000 (1103, 1031, 1132)

AUTHORS: Krasnov, I. M., and Nikol'skiy, V. N., (Moscow, Kuybyshev)

TITLE: Electromagnetic control elements

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 11, 1961, 1546-1549

TEXT: Electromagnetic control elements which are described were developed in order to obtain improved dynamic and static characteristics, reduced weight and dimensions, and a possibility of use in vibrational mode. The design is shown; the armature is held in a neutral position by two springs and can move to either side under the action of two electromagnetic systems. Parts of the magnetic circuit are in Armco steel. The linearity of the pulling characteristic and high frequency of self-oscillations were regarded as basic premises of the design; cylindrical armature with conical faces and conical pole pieces of the yoke provides the linearity of the characteristic; the weight is reduced by joining both electromagne-

Card 1/5

tic systems in a common pole and by a single armature. The dimensions of the parasitic gap were so chosen as to obtain minimum magnetic reluctance and a linear dependence of the armature displacement on the signal. Assuming also a low saturation of the core, forces acting on the armature are

$$F_1 = c\,(I_1 w)^2 \frac{dG_1}{dx} \qquad (1)$$

$$F_2 = c\,(I_2 w)^2 \frac{dG_2}{dx} \qquad (2)$$

where F_1 and F_2 are forces exerted by both systems, I_1 and I_2 - currents in their coils, w - number of turns, G_1 and G_2 - magnetic conductances of working gaps of both systems, X - displacement of the armature from its neutral position and c - a constant coefficient. In a vibrational mode, the coils are subject to pulses of constant

Electromagnetic control elements

height and constant or varying duration, dependent on the magnitude of the incoming signal; when the signal is varied, currents I_1 and I_2 vary in proportion, and the displacement of the armature follows.[2] The sum of the current I_1 and I_2 is constant, hence it is convenient to express them as

$$I_1 = I_m n \qquad (3)$$

and

$$I_2 = I_m(1 - n) \qquad (4)$$

where I_m is the maximum value and n - coefficient of change. If

$$\frac{dG_1}{dx} = \frac{dG_2}{dx} \qquad (6)$$

the expression for the resultant force acting on the armature is

Card 3/5

Electromagnetic control elements

$$F = c \frac{dG_1}{dx} (I_m w)^2 (1 - 2n) \qquad (7)$$

The force depends linearly on n and so also on the incoming signal. Condition (6) was satisfied by the appropriate shape of pole pieces of the armature and core and by a large initial air gap. Taking into account expressions for conductances G_1 and G_2, an approximate expression is obtained for the force

$$F = k_i \Delta I + k_x \Delta x \qquad (9)$$

where k_i and k_x are coefficients dependent on the design, ΔI - variation of current in coils, Δx - displacement of the armature. Considering that the force exerted by springs is

$$N = c_n x \qquad (10)$$

Card 4/5