

GRECHUSHKINA, A.P.; KOKHAR', A.J.

Methodology of prolonged non-contact stimulation of a nerve with
impulse induction current. Fiziol.zhur. 51 no.3:398-400 Mr '65.
(MIRA 18:5)

1. Otdel avtomatizatsii Ukrainskogo nauchno-issledovatel'skogo
instituta gidravlicheskoy dobychi uglya, Lugansk.

L 3102-66 EWT(1)/FCC GS/GW

ACCESSION NR: AT5023934

UR/0000/65/000/000/0164/0180

AUTHOR: Grechushkina, M. P.; Izrael', Yu. A.
44,55 44,55

30
B+1

TITLE: Fractionation of the radioactive products of a nuclear explosion

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radio-
aktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive
isotopes in the atmosphere and their use in meteorology); doklady konferentsii.
Moscow, Atomizdat, 1965, 164-180

TOPIC TAGS: nuclear meteorology, radioactive fallout, atmospheric pollution,
nuclear explosion, nuclear fractionation, radioactive isotope
12,44,55 19

ABSTRACT: This paper presents a review of selected literature written by world
authorities on various aspects of the fractionation of the radioactive products
of nuclear explosions detonated on the ground and in the air. Topics discussed
include the processes leading to fractionation, methods of making quantitative
estimates and calculations of amounts of fractionation occurring after explosions
of varying sizes, and secondary fractionation. Orig. art. has: 3 figures, 4 formu-
las, and 3 tables. [ER]

ASSOCIATION: none

Card 1/1

L 3102-66

ACCESSION NR: AT5023934

SUBMITTED: 28Apr65

ENCL: 00

SUB CODE: ES, NP

NO REF SOV: 002

OTHER: 029

ATD PRESS: 4101

Cher
Card 2/2

GRECHUSHKINA, N.N.

Effect of $MnSO_4$ on the nature of *Lactobacterium pentoaceticum* fermentation under various conditions of aeration and culture acidity. Mikrobiologiya 30 no.1:35-40 Ja-F '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
Biologo-pochvennyy fakul'tet.

(LACTOBACILLUS PENTOACETICUM)

(MAGNESIUM SULFATE—PHYSIOLOGICAL EFFECT)

L 27402-66 EWT(1)/T JK

ACC NR: AP6017700

SOURCE CODE: UR/0220/65/034/002/0200/0203

AUTHOR: Grechushkina, N. N.; Nikitina, K. A.; Rabotnova, I. L. 29ORG: Biology-Soil Faculty, Moscow State University im. M. V. Lomonosov (Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta) B

TITLE: Factors underlying the decrease of the redox potential in cultures of sporogenous aerobic bacteria

SOURCE: AN SSSR. Mikrobiologiya, v. 34, no. 2, 1965, 200-203

TOPIC TAGS: bacteria, bacteriology, plant metabolism

ABSTRACT: In experiments on the culturing of *Bacillus mesentericus*, *Bac. brevis*, *Bac. cereus*, and *Bac. simplex*, it was established that the decrease in the rH_2 of the medium during culturing was associated with an increase in the content of reducing substances formed by the bacteria. However, aeration of the cultures also had an effect: the rH_2 decreased to a greater extent during culturing in test tubes than during cultivation in flasks. The effect of aeration could be seen most clearly in connection with the culturing of *Bac. Mesentericus* on a dulcits medium, i.e., under conditions in which reducing substances are not formed. The rH_2 was lower when *Bac. mesentericus* was cultured in test tubes, because the aeration was less effective. For bacteria of the group investigated, aeration probably had a greater effect on the rH_2 than the formation of reducing substances. Orig. art. has: 4 figures. [JPIC]

SUB CODE: 06 / SUBM DATE: 30Mar64 / ORIG REF: 004

Card 1/1 90

UDC: 576.851.51.098

GRECHUSHKINA, N.N.

Influence of the acidity of a medium on the correlation of
fermentation products of *Lactobacterium pentoaceticum*. *Mikrobiologiya*
30 no.2:221-228 Mr-Apr '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
i Biologo-pochvennyy fakul'tet.
(LACTOBACTERIUM PENTOACETICUM)
(BACTERIOLOGY—CULTURES AND CULTURE MEDIA)

GRECHUSHKINA, N. N.

Effect of aeration on heteroensymatic lactic acid fermentation
in connection with the acidity of the medium. Mikrobiologiya 30
no.3:418-425 My-Je '61. (MIRA 15:7)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo
universiteta imeni Lomonosova.

(FERMENTATION) (LACTOBACTERIACEAE)

GRECHUSHKINA, N. N.

Dissertation defended at the Institute of Microbiology
for the academic degree of Candidate of Biological Sciences: 1962

"Role of Physicochemical Factors of the External Environment in the
Heteroenzymatic Lactic Fermentation of Lactobacterium pentoaceticum."

Vestnik Akad Nauk, No. 4, 1963, pp. 119-145

GRECHUSHKINA, N.N.; NIKITINA, K.A.; RABOTNOVA, I.L.

Factors determining oxidation-reduction potential drop in
sporeforming aerobic bacteria cultures. Mikrobiologiya 34
no.2:200-203 Mr-Apr '65. (MIRA 18:6)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo
universiteta imeni Lomonosova.

NETTE, I.I.; GRECHUSHKINA, N.N.; BUDINA, I.I.

1. Effect of some mycobacteria on petroleum and petroleum products.
Dokl. Akad. Nauk SSSR. 1965. 161:10-11. 1 p. (MIRA 18:11)

2. Biologicheskoye fakul'tet Moskoye gosudarstvennoye
universiteta imeni M.V. Lomonosova.

GRECHUSHKINA, N.N.; NIKITINA, K.A.; RABOTNOVA, I.L.

Study of the physiology of *Mycobacterium lacticolum* strain
35 as related to the use of hydrocarbons. *Prikl. biokhim. i*
mikrobiol. 1 no. 6:627-634 N-D '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
biologo-pochvennyy fakul'tet. Submitted Dec. 29, 1964.

NIKITINA, K.A.; GRECHUSHKINA, N.N.

Methods of the calculation of microorganisms in the culture on media with liquid carbohydrates. Vest. Mosk.un. Ser. 6: Biol., pochv. 20 no.5:45-49 S-0 '65. (MIRA 18:11)

1. Kafedra mikrobiologii Moskovskogo universiteta. Submitted March 15, 1965.

GRECHUKHO, I.G. (Moskva)

Compressed bent rod in the elastoplastic stage. Stroi. mekh. 1
rach. soor. 2 no.6:23-27 '60. (MIRA 13:12)
(Elastic rods and wires)

GRECHUSHKINA, N.N.; RABOTNOVA, I.L.

Role of oxygen in the metabolism of *Lactobacterium pento aceticum*
cultivated in brewing wort. Vest. Mosk. un. Ser. 6: Biol., pochv.
19 no.4:44-47 J1-Ag '64. (MIRA 17:12)

1. Kafedra mikrobiologii Moskovskogo universiteta.

GRECHUSHKINA, N.N.; RABOTNOVA, I.L.

Secretion of reducing agents by sporeforming aerobic bacteria.
Vest. Mosk. un. Ser. 6: Biol., pochv. 19 no.5:28-35 S-0 '64.
(MIRA 17:12)

1. Kafedra mikrobiologii Moskovskogo universiteta.

L 5420-66 EWT(1)

ACCESSION NR: AP5017913

UR/0051/65/019/001/0151/0153

AUTHORS: Petrov, I. P.; ^{44,55} Grechushnikov, B. N. ^{44,55}

²⁴
B

TITLE: Photographic method of recording in Fourier spectrometry ²¹

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 151-153

TOPIC TAGS: spectrometry, photometric analysis, Fourier spectrometer, radiation spectrometer

ABSTRACT: After briefly describing the principles underlying Fourier spectrometry, the authors indicate that instruments based on the interference of polarized beams produced by double refraction in a crystal have superior transmission (luminosity) than apparatus of the Michelson interferometer type. In particular, it is recommended to photograph the interference pattern obtained when the entire wedge is illuminated by a parallel beam of the light under study, and then make a photometric analysis of the photograph of the interference pattern. To test the photographic method of recording in Fourier spectrometry, the authors constructed a breadboard device which enabled them to

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UDC: 535.33:517.512.2

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L 5420-66

ACCESSION NR: AP5017913

analyze emission of not too complex spectral composition in the visible portion of the spectrum. The emission chosen for study was the luminescence of Rhodamine S. The interference pattern was recorded with panchromatic photographic plates and the true emission spectrum, as reconstructed from the measurement data, was found to be quite close to the measured spectrum. The method is especially recommended for high-speed emissive processes and for spectra of low-intensity astronomical objects, since the accumulation of the signal afforded by the photography is then very useful. Orig. art. has: 2 figures and 3 formulas.

ASSOCIATION: None

SUBMITTED: 29Jan65

ENCL: 00

SUB CODE: OP

NR REF SOV: 008

OTHER: 004



Card 2/2

GRECHUSHNIKOV, B. N.
Spectroscopy

Dissertation: "Absorption Spectra of Fuchsin at Various Temperatures." Cand Phys-Math
Sci, Inst of Crystallography, Acad Sci USSR, Moscow, 1953. (Referativnyy Zhurnal,
Fizika, Moscow, Mar 54)

SO: SUM 213, 20 Sep 1954

USSR/Physics - Crystallography

Gard 1/1 Pub. 22 - 11/56

Authors : Grechushnikov, B.N.

Title : Absorption spectra of ruby at various temperatures.

Periodical : Dok. AN SSSR 99/5, 707-709, Dec. 11, 1954

Abstract : An experimental study of the dependence of the form of absorption bands in ruby crystal spectra on the temperature is described. The absorption bands were observed due to admixtures to ruby crystals of isomorphic Cr. Results are presented in the form of graphs. Five USSR references (1952-1953). Graphs.

Institution: The Institute of Crystallography of the Acad. of Scs. of the USSR.

Presented by: Academician A. V. Shubnikov, July 31, 1954.

FD-2982

USSR/Physics - Absorption band

Card 1/1 Pub. 146 - 23/28

Author : Grechushnikov, B. N.; Feofilov, P. P.

Title : ~~Oscillatory~~ Structure in the absorption spectrum of rubidium at minus 190° C

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 384

Abstract : S. I. Pekar (ibid., 22, 641, 1952) and M. A. Krivoglaz (co-author S. I. Pekar, Trudy Instituta fiziki AN Ukr. SSR, 4, 37, 1954) showed theoretically that the form of the absorption band for admixtures in dielectrics can be represented under definite assumptions in the form of the product of two frequency functions, the first factor representing the smooth bell-shaped curve and describing the general contour of the absorption spectrum and the second factor representing a rapidly oscillating function and describing the so called structure of the absorption band. B. N. Grechushnikov (DAN SSSR, 99, 707, 1955) investigated the absorption spectrum of rubidium at the temperature of liquid nitrogen (the earlier study of the influence of temperature was by K. Gibson, Phys. Rev., 8, 38, 1916). The present writer obtains greater detail. Five references: e.g. Krishnan, Proc. Ind. Soc., 26, A, 6, 450, 1947.

Institution : Institute of Crystallography, Academy of Sciences USSR

Submitted : May 19, 1955

GRACHUSHNIKOV, B. N.
Category : USSR/Optics - Physical Optics

K-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2374

Author : Grachushnikov, B.N.
Inst : Institute of Crystallography, Academy of Sciences USSR
Title : On Polarization Luminescence in Monocrystals

Orig Pub : Dokl. AN SSSR, 1956, 106, No 3, 457-459

Abstract : Examination of the polarization of luminescence of single-axis crystals. Polarization diagrams computed for single-axis crystals are cited (Vavilov, Zhur. eksperim. i teoret. fiziki, 1940, 10, 1363). The numerical calculations are made for a negative calcite crystal and for a positive calomel crystal. It is noted that the experimentally-determined values of the degree of polarization are higher than those computed by Vavilov, probably owing to the effect of the anisotropy of the medium.

Card : 1/1

GRECHUSHNIKOV, B. N.

21
Temperature strains in cubic crystals, B. N. Grechushnikoy and D. Brudovskii (Inst. Crystal Acq. Sci. U.S.S.R., Moscow). *Kristallografiya* 1, 597-9 (1956). Expressions are derived for the mech. strains due to nonuniform temp in a finite cylindrical rod of a cubic crystal. The rod is cut with its axis along a cube axis and the expansion of the crystal is at a uniform temp.

2
Handwritten notes and signatures, including "Kas" and "mji".

✓ Vibration structure in the absorption spectrum of ruby.
B. N. Gekhtshnikov and P. P. Feofilov. *Soviet Phys. JETP* 2, 330 (1956) (Engl. translation).—See C.A. 50
2295a. U. S. R.

Book
2

Grechushnikov, B.N.

USSR/Optics -Optical Methods of Analysis. Instruments.

K-7

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13135

Author : Melankholin, N.M., Grechushnikov, B.N.

Inst : Institute of Crystallography, Academy of Sciences, USSR

Title : New Photoelectric Microspectrophotometer.

Orig Pub : Tr. in-ta Pristallogr. AN SSSR, 1956, vyp. 12, 186-191

Abstract : To investigate the absorption spectra of various small crystals of organic dyes (up to 0.03 mm in diameter), a photoelectric microspectrophotometer was constructed. The source of monochromatic light is the UM-2 monochromator, and the receiver is a FEU-19 photomultiplier. The darkness current of the photomultiplier is compensated for. The instrument can be used for the investigation of the absorption spectra of all microcrystals or biological objects, and also for the spectrophotometric

Card 1/2

GRECHUSHNIKOV, B.N.

PRIKHOT'KO, A.F.
 24(7) p.3 PHASE I BOOK EXPLOITATION SOV/1365
 L'vov. Universitet

Materialy X Vsesoyuznogo sveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizichnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Uzer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Laryshev, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Koritskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Deygen, M.F. Theory of Light Absorption by Impurity Centers in Heteropolar Crystals	135
Deygen, M.F., and V.L. Vinetskiy. Optical Properties of P_2^+ -centers in Ionic Crystals	137
Mashba, E.I. Impurity Absorption in Molecular Crystals	140
Kats, M.L. Absorption Spectra of Some Solid Solutions and Their Change When Subjected to Hard Radiation	141
Grum-Grzhimaylo, S.V., B.M. Grachushnikiy, and R.A. Kravchenko-Berezhnov. Vibrational Structure in the Absorption Spectrum of Corundum Tinted With Vanadium (at 100°K)	144
Slavnova, Ye. N. Spectrophotometric Study of Dye Impurities in Crystals of Lead and Barium Nitrites	146

Grechushnikov, B. N.

51-6-10/25

AUTHORS: Chentsova, L. G., Grechushnikov, B. N., and
Batrak, Ye. N.

TITLE: Investigation of Temperature Stimulation of Crystalline
Quartz Excited with X-Rays. (Issledovaniye temper-
aturnogo vysvechivaniya kristallicheskogo kvartsa,
vozbuzhdenogo rentgenovymi luchami.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol. III, Nr. 6,
pp. 619-623. (USSR)

ABSTRACT: N.E. Vedeneyeva and G.G. Lemmleyn found that the
samples of quartz which luminesce strongly can be
coloured intensively by the action of X-rays.
The identity of the colour centres and the capture
centres which produce thermoluminescence in melted
quartz was proved by Lautout (Ref.1). There are two
points of view on the nature of capture centres. In
the opinion of Yokota (Ref.2) the capture centres are
due to oxygen defects. Other workers ascribe
colouring on irradiation to the presence of impurities
in quartz which are in atomic-disperse state. The
authors investigated properties of samples of natural

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51-6-10/25

Investigation of Temperature Stimulation of Crystalline Quartz
Excited with X-Rays.

crystals from several places of origin. These crystals are: (A) Quartz from Volhynia, which can be intensely coloured by X-rays. (B) Quartz from South Urals, which is more difficult to colour. (V) Quartz from Polar Urals, and (G) Quartz from Aldan - samples of the latter two groups can be only weakly coloured by X-rays. (D) Quartz from Elba, which cannot be coloured by the action of X-rays. All samples were heated to 400°C and then irradiated with 180 kV X-rays. Stimulation was produced by uniform increase of temperature (2 deg/min). Fig.1 shows the thermoluminescence curves for X-irradiated quartz A (curve 1 - 1 hour's irradiation, curve 2 - 2 hours', curve 3 - 6 hours'). On all the curves of Fig.1 clear maxima appear at 175 and 290°C. Fig.2 shows similar curves for samples of quartz A and quartz B, irradiated with X-rays for 3 hours. The maximum at 175°C is much stronger in quartz B.

Card 2/4

51-6-10/25

Investigation of Temperature Stimulation of Crystalline Quartz
Excited with X-Rays.

Fig.3 shows the thermoluminescence of samples of quartz V and G subjected to 30 hours of irradiation. Quartz V has an inflection around 175°C, and a wide maximum at about 280°C. Quartz G has several maxima. Samples cut from two portions of the same crystal G, separated by a crack, have quite different thermoluminescence curves (Fig.4). Heating of uncoloured quartz D did not produce any emission. In the opinion of the present authors the differences between thermoluminescence curves of quartz from various places of origin support the impurity hypothesis on the nature of capture centres. Quartz possesses structural channels (pores) along the C-axis: when ions of Li^+ and Na^+ are introduced into these channels by electrodiffusion, quartz does not lose its ability to be coloured on X-irradiation. Fig.5, curve 1 gives thermoluminescence of quartz A before introduction of foreign ions; curve 2 represents the same quartz with Li^+ ions, and curve 3 - the same quartz with Na^+ ions. In each case the sample was irradiated

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Investigation of Temperature Stimulation of Crystalline Quartz
Excited with X-Rays. 51-6-10/25

for 6 hours. Introduction of Li^+ ions strengthens the 175°C maximum, while introduction of Na^+ destroys the 175°C maximum and depresses the 290°C maximum. It follows that the depth of the capture centres producing thermoluminescence is affected by ions such as Li^+ and Na^+ . There are 5 figures and 6 references, of which 1 is Russian, 4 English and 1 French.

ASSOCIATION: Institute of Crystallography, Academy of Sciences of the USSR. (Institut kristallografii AN SSSR)

SUBMITTED: February 11, 1957.

AVAILABLE: Library of Congress.

Card 4/4

GRECHUSHNIKOV B.N.

48-5-30/26

SUBJECT: USSR/Luminescence

AUTHORS: Chentsova, L.G., Grechushnikov, B.N. and Batrak, Ye.N.

TITLE: Investigation of Temperature De-Luminescence of Crystalline Quartz Excited by X-Rays (Issledovaniye temperaturnogo vysvechivaniya kristallicheskogo kvartsa, vzbuzhdennogo rentgenovymi luchami)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #5, pp 699-700 (USSR)

ABSTRACT: The temperature de-luminescence of natural quartz samples from different formation sites was investigated. The curves of samples taken from different sites differ both in intensity of luminescence and in the number and temperature of peaks. This difference indicates the different nature of admixture ions which induce the formation of capture centers.

Alkali "compensating" ions, which presumably are located in the structural channels of quartz, affect the thermal de-luminescence.

The experiments carried out have shown that after migration of

Card 1/2

49.7.1/76

TITLE: Investigation of Temperature De-Luminescence of Crystalline Quartz Excited by X-Rays (Issledovaniye temperaturnogo vysvechivaniya kristallicheskogo kvartsa, возбужденного рентгеновыми лучами)

Li^+ and Na^+ ions through quartz, they did not lose their ability of being colored by irradiation. Absorption spectra of the samples subjected to roentgenization after the introduction of Li^+ and Na^+ are very similar, whereas their curves of thermal de-luminescence differ considerably.

The investigation performed has thereby shown that admixture ions, which create charge defects in the crystalline lattice, and ions compensating these defects played an essential role in the formation of capture centers.

The report was followed by a discussion.
One Russian reference is cited.

INSTITUTION: Institute of Crystallography of the USSR Academy of Sciences

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2


S/070/62/007/001/016/022
E039/E435

AUTHORS: Gerasimov, Yu.M., Grechushnikov B.N.

TITLE: The optical orientation of crystalline grains

PERIODICAL: Kristallografiya, v.7, no.1, 1962, 137

TEXT: Description of a method of orientating crystalline grains with dimensions up to about 0.5 mm, based on the classical method of Fedorov. The crystals are orientated by observing the position at which extinction occurs when they are placed between crossed polarisers. Details of the apparatus are shown in a photograph. The crystal is stuck to an auxiliary needle and mounted so that it is at the centre of a hollow glass sphere and on the axis of rotation of the ring on the Fedorov table. After orientation, which is facilitated by filling the sphere with liquid, the required direction is along the optic axis of the polarizing microscope. A second needle is then set up along this optical axis and the crystal is carefully transferred to it, the desired direction of the crystal now being along the axis of the second needle. The crystals are fixed by the use of the vapour from glue dissolved in various solutions (e.g. silicate glue
Card 1/2



The optical orientation ...

S/070/62/007/001/016/022
E039/E435

50-2 (BF-2) and others). The method was checked using a hexagonal crystal of syngony and, from measurements with a goniometer, it was shown that an accuracy of 1 to 2" could be obtained. There is 1 figure. ✓

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography AS USSR)

SUBMITTED: April 14, 1961

Card 2/2

GRECHUSHNIKOV, B.N.; PETROV, I.P.

Accuracy of Waterman's polarimeter. Opt. i spektr. 7 no.4:
521-522 Ap '62. (MIRA 15:5)
(Polariscope)

ACCESSION NR: AR4044002

S/0058/64/000/006/E048/E049

SOURCE: Ref. zh. Fizika, Abs. 6E365

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Chudakov, V. S.

TITLE: The photoelectric method of investigating stresses and heterogeneities in semiconductor crystals

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962,6-15

TOPIC TAGS: photoelectric method, stress, heterogeneity, semiconductor crystal, IR polariscopy, flaw detection

TRANSLATION: There is developed a method of photoelectric infrared polariscopy and flaw detection, consisting in consecutive measurement, at individual points of semiconductor crystals, of values of transmission and birefringence that characterize their structural imperfections. The method also makes it possible to visually observe the pictures of transmission and birefringence distribution obtained in the infrared region of the spectrum. The apparatus used in this method

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ACCESSION NR: AR4044002

operates on the principle of scanning using high-sensitivity infrared-radiation receivers. To obtain quantitative data, the electrical signal generated in the infrared receiver is amplified and recorded by a measuring device. The electrical signal can also be converted into visible light. When using a microscope with this method it is possible to study various structural flaws. There have been designed and built instruments that operate using this method: the infrared polariscope PIK-1 and infrared polarization scanning microscope to investigate structural flaws in silicon and germanium crystals.

SUB CODE: SS, OP

ENCL: 00

Card 2/2

L 13392-63

EWT(1)/EWP(q)/EWT(m)/BDS AFFTC/ABD/APGC/SSD WH

ACCESSION NR: AP3000786

S/0070/63/008/003/0465/0468

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Petrov, I. P.

65
61

TITLE: A Fourier spectrometer with filters

SOURCE: Kristallografiya, v. 8, no. 3, 1963, 465-468

TOPIC TAGS: quartz, spectral transmission, Fourier series, low-intensity radiation, interference-polarization filter

ABSTRACT: The authors reduce the task of determining spectral composition of low-intensity radiation to computation of Fourier coefficients by solving a system of algebraic equations, shown in Formula (1). The right side of these equations may be determined by measurement, to be made on an instrument constructed at the Institute of Crystallography AN SSSR. This instrument consists of a mirror optical system, Fourier filters, and a receiver-amplifier current with automatic recorder. The optical system has two mirrors and objectives of fluorite, producing a beam of light with a half angle of resolution of 4 degrees. A shutter with seven Fourier filters is placed in this beam, and the light is directed to the intake of the receiver-amplifier circuit (the panel from an IKS-12¹⁰ spectrometer or a standard 28IM amplifier). The amplified signal is then introduced to the intake of an

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L 13392-63

ACCESSION NR: AP3000786

EFP-09¹⁵ electronic potentiometer⁴ The filters are made of quartz of various computed thicknesses to give the proper effect. The authors expect this device to solve a number of various kinds of spectral problems, such as determination of spectral sensitivity of photoelectric cells. Orig. art. has: 5 figures and 7 formulas.

ASSOCIATION: Institut kristallografi AN SSSR (Institute of Crystallography, Academy of Sciences SSSR)

SUBMITTED: 13Aug62

DATE ACQ: 21Jun63

ENCL: 01

SUB CODE: 00

NO REF SOV: 003

OTHER: 000

Card 2/3

I. 13393-63

BDS

ACCESSION NR: AP3000787

S/0070/63/008/003/0468/0471

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Petrov, I. P.

50
49

TITLE: A Fourier spectrometer for work in the near-infrared region of the spectrum
Results were presented at the All-Union Conference of Spectroscopy, 1959

SOURCE: Kristallografiya, v. 8, no. 3, 1963, 468-471

TOPIC TAGS: Fourier transformation, infrared spectrum, quartz wedge, spectrometer, luminescence

ABSTRACT: This is an expansion of the device and application discussed in a previous article by the same authors (Kristallografiya, 8, 3, 1963). The expansions include substitution of a quartz wedge in the optical system in order to make use of the Fourier transformation and the addition of extra circuits and instruments to permit the desired measurements of near-infrared radiation. The optical arrangement and construction of the quartz wedge are shown in Figs. 1 and 2. The schematic arrangements of circuits in the setup are shown in Figs. 3 and 4. The authors used the apparatus to study luminescence spectra of several crystals in the visible and near-infrared regions of the spectrum. The results were not reported in this article but were reported previously in a short presentation at the All-Union Conference on Spectroscopy in '59.

Card 1/4

ASSN: Inst. of Crystallography, Academy of Sciences SSSR

S/051/63/014/002/022/026
E039/E120

AUTHORS: Grechushnikov, B.N., and Petrov, I.P.

TITLE: A polarizer for the infrared region of the spectrum

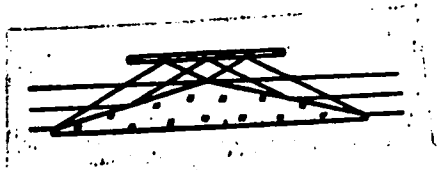
PERIODICAL: Optika i spektroskopiya, v.14, no.2, 1963, 305-307

TEXT: Calculations are made showing the increase in reflection coefficient with increase of refractive index n at the Brewster angle, i.e. from $\sim 20\%$ at $n = 2$ to $\sim 43\%$ at $n = 8$. An estimate is also made of the dependence of the angular aperture of the incident beam on n when the degree of polarization is not less than 99%. It is shown that with increase in n the angular aperture of the incident beam decreases smoothly. For the transmission of a polarizer to be not less than 30%, with the angular aperture of the incident beam $\sim 6 - 7^\circ$, then $4 \leq n \leq 5$. A polarizer based on reflection from a layer of PbS is described. The incident beam strikes the first boundary of a glass prism, which is coated with a layer of PbS ($n = 4.2$) and is reflected on to an aluminium mirror which in turn directs the beam on to the second boundary of the prism from which it is reflected to its original direction (see Fig.2). For angles of incidence between
Card 1/2

A polarizer for the infrared region... S/051/63/014/002/022/026
E039/E120

67 and 83° the degree of polarization is not less than 98-99% for IR radiation in the range 3.0 to 15 μ , with a transmission of 31.5%. Using AgCl in a similar polarizer a degree of polarization equal to 97-99% for radiation in the range 4.0 to 7.0 μ is obtained with a transmission of 30-32%. This is in agreement with the calculated value. There are 3 figures.
SUBMITTED: July 27, 1962

Fig. 2



Card 2/2

ACCESSION NR: AP4013498

S/0181/64/006/002/0422/0423

AUTHORS: Koryagin, V. F.; Grechushnikov, B. N.

TITLE: The EPR spectrum of the positive trivalent chromium ion in a pseudocubical field

SOURCE: Fizika tverdogo tela, v. 6, no. 2, 1964, 422-423

TOPIC TAGS: electron paramagnetic resonance, chromium, cubic crystal, block structure, EPR spectrum

ABSTRACT: This study was made on a crystal of ScF_3 , which has pseudocubic (orthorhombic) symmetry and belongs to the space group $D_3^7-R 32$. In observing the EPR spectrum, a very small initial splitting was observed at $D < 11$ oersteds, determined by a g factor of 1.967 ± 0.001 . The EPR spectrum of the Cr^{3+} ion in a crystal of ScF_3 is shown in Fig. 1 on the Enclosure. More precise determination of the constant D is difficult because of block structure in the crystal. Since

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ACCESSION NR: AP4013498

the radius of the Cr^{3+} ion is much smaller than the radius of the Sc^{3+} ion, it is difficult to obtain crystals of ScF_3 with high concentrations of impurities. When the Cr^{3+} concentration is high, block structure is strongly developed, and Cr^{3+} occurs chiefly on the boundaries of the blocks. Hyperfine structure from ^{53}Cr was observed in the EPR spectrum for $A \sim 13$ oersteds, which agrees with the constant of hyperfine splitting of the Cr^{3+} ion in other crystals. Orig. art. has: 1 figure and 4 formulas.

ASSOCIATION: Institut kristallografii AN SSSR, Moscow (Institute of Crystallography AN SSSR)

SUBMITTED: 29Jul63

DATE ACQ: 03Mar64

ENCL: 01

SUB CODE: NP, SS

NO REF SOV: 001

OTHER: 002

Card 2/3

ACCESSION NR: AP4013498

ENCLOSURE: 01

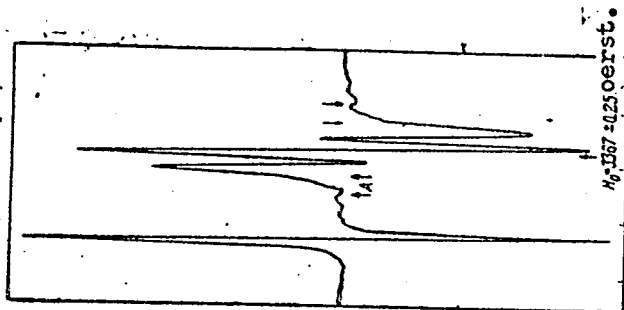


Fig. 1. EPR spectrum of the Cr^{3+} ion in a crystal of ScF_3 . The single line belongs to the free radical; $g = 2.0036$.

Card 3/3

ACCESSION NR: AP4039406

S/0070/64/009/003/0421/0423

AUTHORS: Grechushnikov, B. N.; Shny*rev, G. D.; Petrov, I. P.

TITLE: An achromatic half-wave plate

SOURCE: Kristallografiya, v. 9, no. 3, 1964, 421-423

TOPIC TAGS: half wave plate, achromatic plate, polarized luminescence

ABSTRACT: Half-wave plates are generally used to rotate plane polarized light through 90° , but existing plates of this type are strictly half-wave plates for only a single definite wavelength and can be used only in that restricted part of the spectrum. The authors point out that it is possible to compute, as was done by S. Pancharatnam for a quarter-wave plate (Proc. Indian Acad. Sci., 41A, 4, 137-144, 1955), an "achromatic" half-wave plate with a phase difference of 180° for three different wavelengths. The authors made the computation, using elliptical waves and a Poincare sphere. The achromatic plate is designed in the form of three half-wave plates arranged at definite angles to each other. The angles between the principal directions of the plates are so chosen that the aggregate gives a phase difference of 180° for the three given wavelengths. As an example, the authors consider the wavelengths 425, 520, and $670 \text{ m}\mu$, compute the angle at which they must

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ACCESSION NR: AP4039406

be joined (20°), and find that the resulting plate will rotate the plane of polarization 90° for practically the entire range of wavelengths. The transmission of this plate for intermediate wavelengths (with polarizing prisms crossed), as computations show, will differ from complete transmission by only a few percent. Orig. art. has: 1 figure and 4 formulas.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography AN SSSR)

SUBMITTED: 15Oct63

ENCL: 00

SUB CODE: OP

NO REF SOV: 000

OTHER: 001

Card: 2/2

VORONKOVA, Yelena Mikhaylovna; DJSTLER, Grigoriy Isankovich;
GRECHUSHNIKOV, Boris Nikolayevich; PETROV, Igor'
Petrovich; ASKOCHENSKIY, A.A., otv. red.

[Optical materials for infrared technology] Opticheskie
materialy dlia infrakrasnoi tekhniki; spravocnoe posobie
Moskva, Nauka, 1965. 335 p. (MIRA 18:7)

L 6328-66 EWT(1)/EWT(m)/EPF(c)/EWP(t)/EWP(b) IFP(c) JD/WW/JG/GG

ACCESSION NR: AP5019870

UR/0181/65/007/008/2496/2498

AUTHOR: Koryagin, V. F.; Grechushnikov, B. N. 55, 44

TITLE: Electron paramagnetic resonance of atomic hydrogen in beryllium

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2496-2498

TOPIC TAGS: beryllium, x ray irradiation, hydrogen, EPR spectrum, hyperfine structure, spectral line

ABSTRACT: Beryllium crystals (vorobyevite and rosterite) were exposed to x rays for 3--6 hours. The EPR spectrum following the exposure had two narrow lines of width $\Delta H = 1.2$ Oe spaced approximately 500 Oe apart. The lines had no angular dependence, and their amplitude increased linearly with the radiation dose up to $\sim 10^6$ roentgen, after which saturation set in. These lines are interpreted as the spectrum belonging to atomic hydrogen. To check that these lines are not connected with the hydrogen adsorbed on the surface, the samples were heated to different temperatures. The EPR spectra were measured with REL3-01 and JES-5B radiospectrometers at 290 and 77K. The results were the same for all temperatures up to about 1100C, at which the beryllium became completely dehydrated, and the EPR signal disappeared. Hydration or deuteration of the dehydrated beryllium with water or D₂O

Card 1/2

L 6328-66

ACCESSION NR: AP5019870

6

at 550C and ~300 atm restored the EPR spectrum due to the atomic hydrogen or atomic deuterium (the latter had three lines with a width on the order of 1 Oe and a splitting of 156 Oe). The constants of the spin Hamiltonian were found to be $g = 2.00265 \pm 0.00005$ and $B = 1004.7 \pm 0.2$ Oe, in good agreement with the known values for free hydrogen. The EPR exhibited a hyperfine structure, which is found to be due to sodium ions in the beryllium structural channels. "The authors thank N. V. Belov⁴⁴ for suggesting the topic and for useful discussions." Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: Institut kristallografii AN SSSR, Moscow (Institute of Crystallography AN SSSR) 55, 44

SUBMITTED: 27Mar65

ENCL: 00

SUB CODE: NP

NR REF SOV: 002

OTHER: 003

nw
Card 2/2

L 9249-66 EWT(l)/EWT(m)/EPF(n)-2/EWP(j)/T/EWP(t)/EWP(b) IJP(c) JD/WV/GG/RM

ACC NR: AP5022710

SOURCE CODE: UR/0181/65/007/008/2712/2716

AUTHOR: Antipova-Karatayeva, I. I.; Grechushnikov, B. N.; Koryagin, V. F.; Kutsenko, Yu. I.

ORG: Institute of Crystallography AN SSSR (Institut kristallografii AN SSSR); Institute of Geochemistry and Analytical Chemistry AN SSSR, Moscow (Institut geokhimi i analiticheskoy khimii AN SSSR)

TITLE: Spectra of trivalent chromium complexes in crystals of AlCl₃·6H₂O

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2712-2716

TOPIC TAGS: aluminum chloride, spectrum analysis, EPR spectrum, crystal theory, crystal optic property

ABSTRACT: The authors study crystals of AlCl₃·6H₂O with an isomorphic impurity of trivalent chromium to determine the mechanism responsible for binding of an impurity ion in the surrounding crystal lattice. The crystals were grown from solutions containing aluminum chloride and chromium chloride. The specimens were studied by spectrophotometry in the visible and ultraviolet regions, and by electron paramagnetic resonance. The preparation of the specimens and equipment used in making the measurements are briefly described. A model is given for the energy levels of a Cr³⁺ ion in crystal fields of various symmetry. The absorption spectra of all crystals in polariz-

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L 9249-66

ACC NR: AP5022710

ed light showed two wide bands in the visible region and one in the ultraviolet. The spectral parameters Δ and K were determined, where Δ is the energy difference between the ${}^4A_{2g}$ and ${}^4T_{2g}$ levels, and K is the value of splitting of the ${}^4T_{2g}$ and ${}^4T_{1g}$ levels in an axial field. The constant of spin-orbital interaction λ was also determined from the spectral measurements. The results are tabulated. The parameters of the electron paramagnetic resonance spectra for the various crystals studied are given. It is found that binding of the impurity ion in this type of crystal is determined both by the lattice structure and by the state of the ion in the mother liquor. Further research on this problem is recommended. Orig. art. has: 3 figures, 3 tables.

SUB CODE: 20,07/

SUBM DATE: 27Mar65/

ORIG REF: 001/

OTH REF: 004

Card 2/2 *pw*

GRACHUSHNIKOV, B.N.; SHNYREV, G.D.; PETROV, I.P.

Calculating the final aperture and correcting interferograms in
Fourier-spectrometry. Opt. i spektr. 18 no.1:130-132 Ja '65.
(MIRA 18:4)

PETROV, I.P.; GRECHUSHNIKOV, B.N.

Photographic recording in Fourier-spectrometry. Opt. i spektr. 19
no.1:151-153 J1 '65. (MIRA 18:8)

L 23157-66 EWT(m)/EWP(t) IJP(c) JD
ACC NR: AP006848 SOURCE CODE: UR/0101/66/008/002/0565/0567
AUTHOR: Koryagin, V. F.; Grechushnikov, B. N. 41
ORG: Institute of Crystallography, AN SSSR, Moscow (Institut r stallografii AN SSSR) 39
TITLE: Ultrahyperfine structure in the electron paramagnetic resonance spectrum of the bivalent manganese ion in crystals of aluminum trichloride hexahydrate
SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 565-567
TOPIC TAGS: aluminum chloride, manganese, EPR spectrum, crystal property, hyperfine structure, spectral line, Hamiltonian
ABSTRACT: The authors study the EPR spectrum of the Mn^{2+} ion in $AlCl_3 \cdot 6H_2O$ crystals. The spectra were studied on RE1301 and JES-3B radio spectrometers with high frequency modulation at room temperature. The spectra showed the characteristic lines for the bivalent manganese ion. The amplitudes of the lines for the various groups are in the approximate ratio 5:8:9:0:5. The spectrum extends 1620 oersteds for fields parallel to the x axis and 1076 oersteds for fields perpendicular to the x axis. The width of the lines is of the order of 2-3 oersteds for parallel orien-
Card 1/2

L 23157-66

ACC NR: AP6006848

2

tation and somewhat greater for perpendicular orientation. An additional ultrahyperfine structure is observed on most of the lines consisting of two components which show less broadening in the perpendicular spectrum. The spectrum is interpreted by a spin Hamiltonian for the axial intracrystalline electric field. The values of the constants in this spin Hamiltonian are given. The difference between calculated and experimental resonance values for the field in the spectrum is no more than 2 oersteds. Satellite lines at distances of 9.5 ± 0.2 oersteds from each other are observed on the lines for $3/2$, $1/2$ and $-1/2$ transitions. These lines may be due to ultrahyperfine interaction between the manganese ions and the adjacent water protons. The authors consider it their pleasant duty to thank I. I. Antipova-karatayeva and Yu. I. Kutsenko for graciously furnishing the crystals used in this study. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 12Jul65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

RB,

L 01260-67 EWT(1) GW

ACC NR: AT6031778 (N) SOURCE CODE: UR/2566/65/077/000/0053/0066

38
B+1

AUTHOR: Pavlov, V. M.; Grechushnikov, B. N.

ORG: none

TITLE: Certain aspects of the theory of polarization of diffused light at sea ✓

SOURCE: AN SSSR. Institut okeanologii. Trudy, v. 77, 1965. Hidroopticheskiye issledovaniya (Optical studies of ocean water), 53-66

TOPIC TAGS: light diffusion, oceanography, sun, sea, light, underwater flight

ABSTRACT: The relationship between the position of the sun and the distribution of polarization parameters of underwater light is explained. The ability of some submarine creatures to orient themselves in water seems to depend on the above mentioned relationship. The authors give some results of the calculation and analysis of the diffusion by volume of the particles, which is $\rho = 6$, and the index of refraction $m = 1.167$. The authors are deeply grateful to V. N. Lebedeva, Fellow of the Institute of Crystallography of the Academy of Sciences USSR, for her great help and valuable advice during the preparation of the given work. Orig. art. has: 4 figures, 13 formulas, and 2 tables. [GC]

SUB CODE: 17, 08, 03, 06, 20/SUBM DATE: none/ORIG REF: 012/ OTH REF: 026/

Card 1/1
awm

L 04752-67 EWT(1) IJP(c)

ACC NR: AP6025975

SOURCE CODE: UR/0051/66/021/001/0139/0140

AUTHOR: Grechushnikov, B. N.; Petrov, I. P.; Shnyrev, G. D.

ORG: none

43
B

TITLE: A problem of the aperture of a Fourier spectrometer based on a polarization interferometer

SOURCE: Optika i spektroskopiya, v. 21, no. 1, 1966, 139-140

TOPIC TAGS: Fourier spectrometer, interferometer, interference light modulator, optic interference, optic measurement

ABSTRACT: The authors discuss the gain in the light output from a polarization interferometer as compared to the Michelson interferometer. V. K. Stil' and A. Merts (cf. *Opt. i spektr.*, 20, 910, 1966) have shown that the difference between the two instruments is not as significant as the authors had noted in their previous work (*Opt. i spektr.*, 18, 130, 1965). It is apparent that Stil' and Merts' conclusion is valid only as an approximation in which the higher order components of resolution are neglected. For large aperture angles, the magnitude of such components is not sufficiently small. To resolve the problem, an accurate expression for percentage modulation as a function of aperture angle can be generated:

UDC: 535.33:517.512.2

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0

$$A = \frac{1}{X} \int_0^X J_0(t) dt;$$

where $J_0(t)$ is a zero order Bessel function, $X = \alpha\theta^2/2n^2$ for $n_0 = n_e = n$. This function is plotted together with the corresponding functions for the Michelson interferometer and the approximate relation

$$\frac{\theta_2^2}{\theta_1^2} = \frac{n^2}{\sqrt{2}}$$

derived by Stil' and Merts. It is obvious from the plot that the modulation for the polarization interferometer is never reduced to zero, thus the comparison of the light output based on this criterion is not sufficiently justified. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 03Dec65/ ORIG REF: 002

Card 2/2 28

ACC NR: AM6004737

Monograph

UR/

Voronkova, Yelena Mikhaylovna; Grechushnikov, Boris Nikolayevich; Distler, Grigoriy Isaakovich; Petrov, Igor' Petrovich

Optical materials for infrared engineering; a reference edition (Opticheskiye materialy dlya infrakrasnoy tekhniki; spravochnoye izdaniye) Moscow, Iz-dvo "Nauka", 1965. 335 p. illus., biblio., index. (At head of title: Akademiya nauk SSSR. Institut kristallografii) Errata slip inserted. 3,000 copies printed.

TOPIC TAGS: ir optic material, optic crystal, optic glass, plastic lens

PURPOSE AND COVERAGE: The book is devoted to the properties of crystalline substances which are most important for use as optical materials in infrared technology. It contains data on optical, thermal, mechanical, electrical, and other characteristics which are necessary for effective utilization of these materials. All the necessary data, which are scattered in numerous books and original articles, have been gathered together and 74 materials, which are either already widely used in infrared techniques or are quite promising, have been selected as a result of an analysis of the large number of literature data. This includes also the most interesting types of glass and plastics. The book is in the form of a handbook with the characteristics of each individual material described in detail. Authors are grateful to L. D. Kislovskiy for valuable advice and remarks, Professor M. V. Klassen-Neklyudova for valuable critical remarks, and I. M. Sil'vestrova and L. A. Shuvalov for help with the work.

Card 1/2

UDC: 548.0 : 535/539(038)

ACC NR: AM6004737

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Ch. I. Optical materials for infrared applications - - 5
Ch. II. Characteristics of optical materials - - 15
Ch. III. Comparative characteristics of optical materials - - 20
Ch. IV. Construction of handbook - - 48
Literature - - 307
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SUB CODE: 11, 20/ SUBM DATE: 20Apr65/ ORIG REF: 070/ OTH REF: 641

Card 2/2

ACC NR: AT7002130

(A)

SOURCE CODE: UR/0000/66/000/000/0543/0548

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Chudakov, V. S.

ORG: none

TITLE: An infrared photoelectric optical method based on polarization.

SOURCE: Vsesoyuznaya konferentsiya po polarizatsionno-opticheskomu metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 543-548

TOPIC TAGS: IR scanning, optic analysis, optic scanning, IR analysis, IR system, elasticity

ABSTRACT: Application of IR to optical-electronic measurement of elastic deformations in opaque (to the visible spectrum) materials is described. The method consists in scanning of the sample by a narrow beam of infrared radiation, registering the transmitted radiation with an IR detector, converting the resultant electrical currents after amplification into visible light of varying intensity in a lamp, and recording this visible light on photographic film. The intensity of recorded light depends on the transmittance and birefringence of a given sample. In this manner elastic changes due to pressure in normally opaque materials, such as semiconductors, plastics, cer-

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ACC NR: AT7002130

tain types of glass, etc., can be investigated and recorded. The basic equipment, a polariscope, is shown in Figure 1. The wavelength of the IR radiation can be selected for best transmission through the given material. For kinematic studies of material deformation due to stress as a result of heat, another instrument was devised and is shown in Figure 2. In this instrument the intensity of radiation transmitted

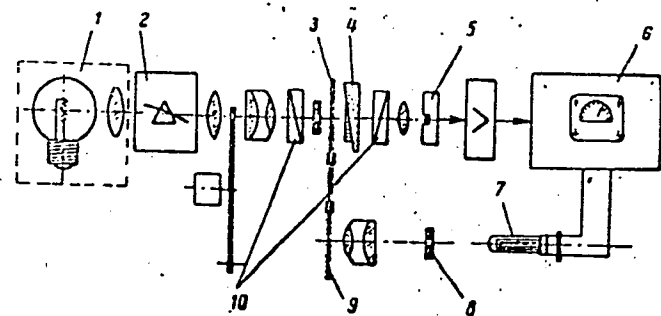


Fig. 1. PIK-1 Polariscope

1--light source; 2--monochromator; 3--sample; 4--wedge compensator; 5--IR detector; 6--amplifier; 7--neon lamp; 8--aperture; 9--photographic plate; 10--IR polarizers.

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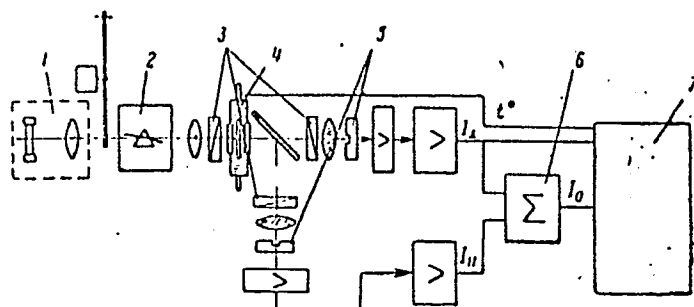
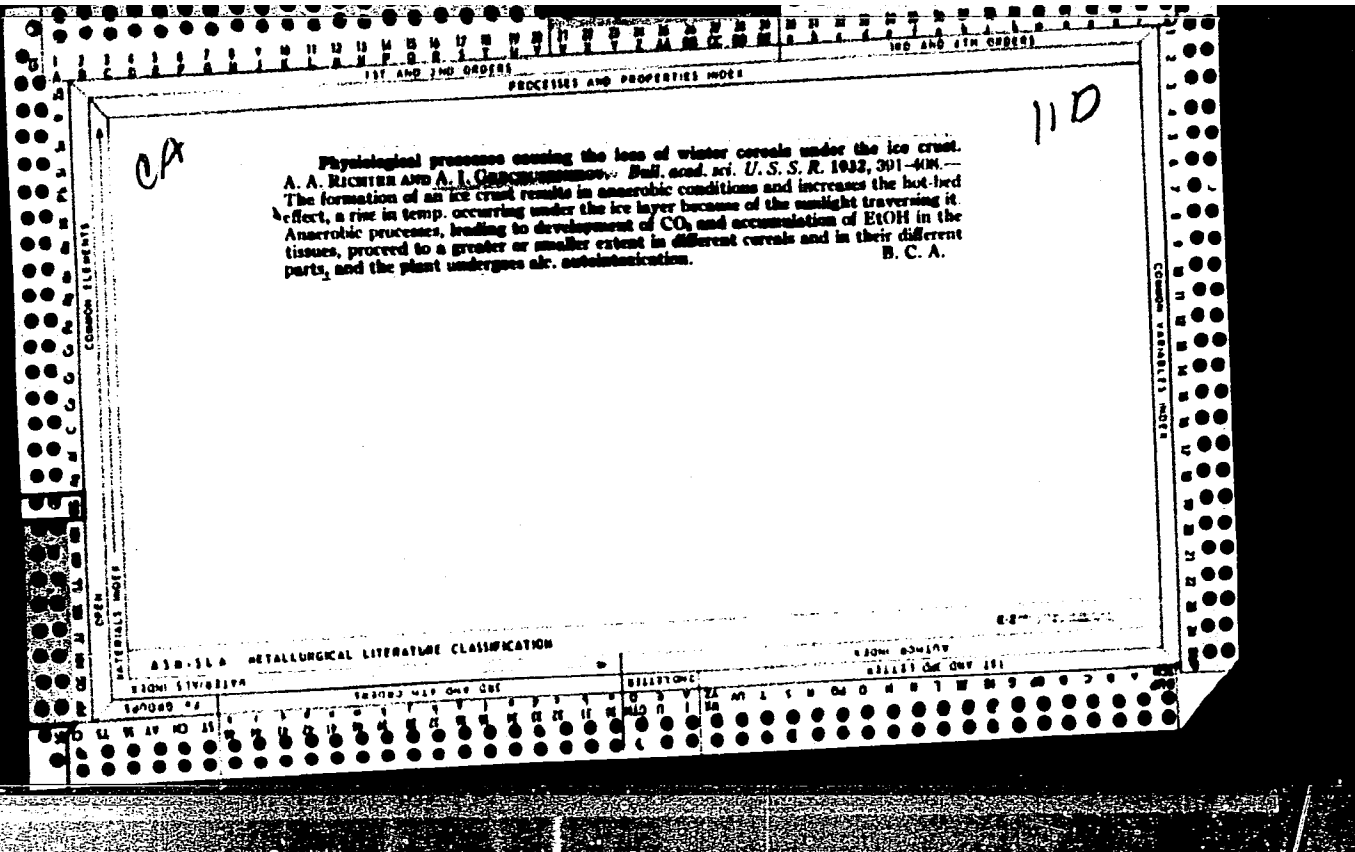
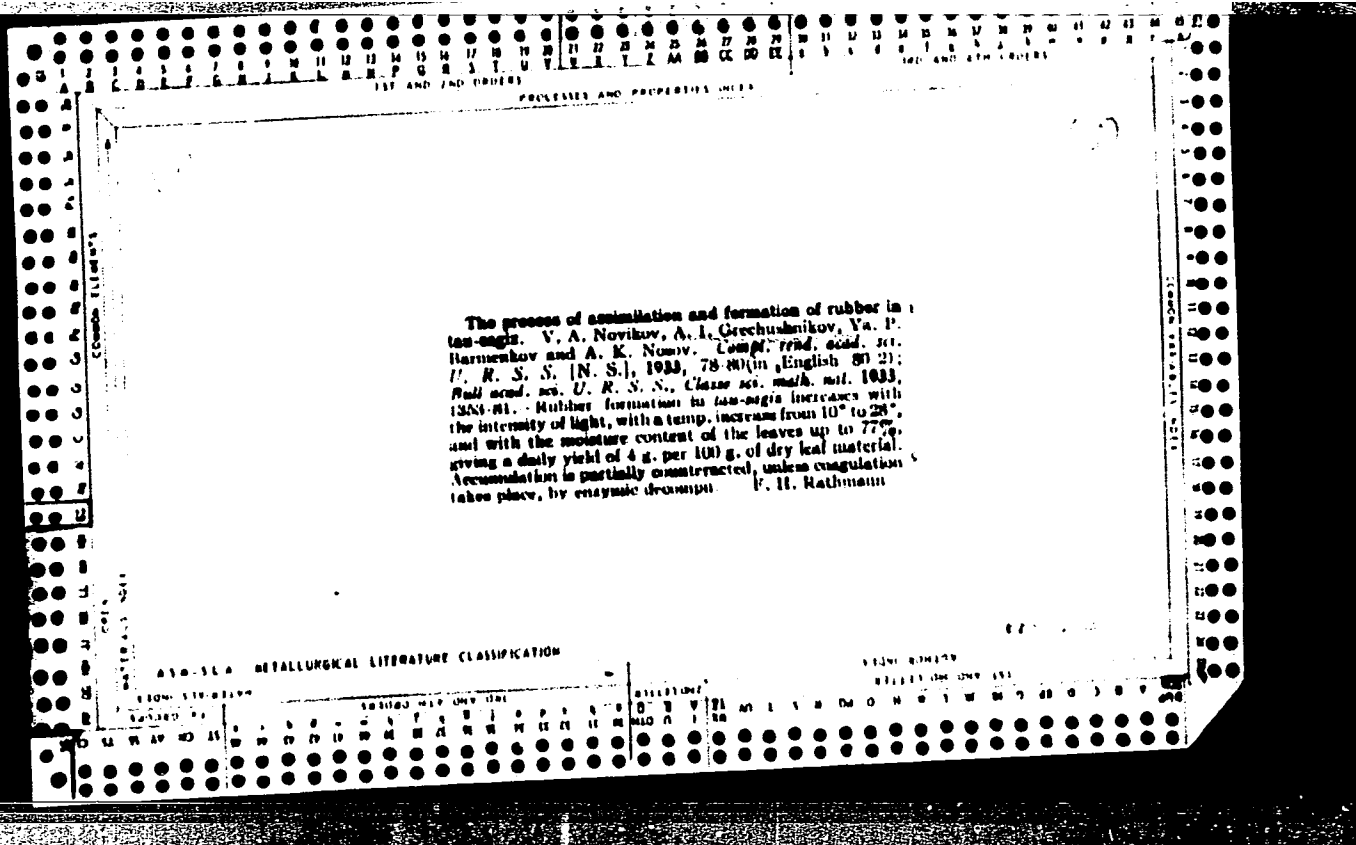


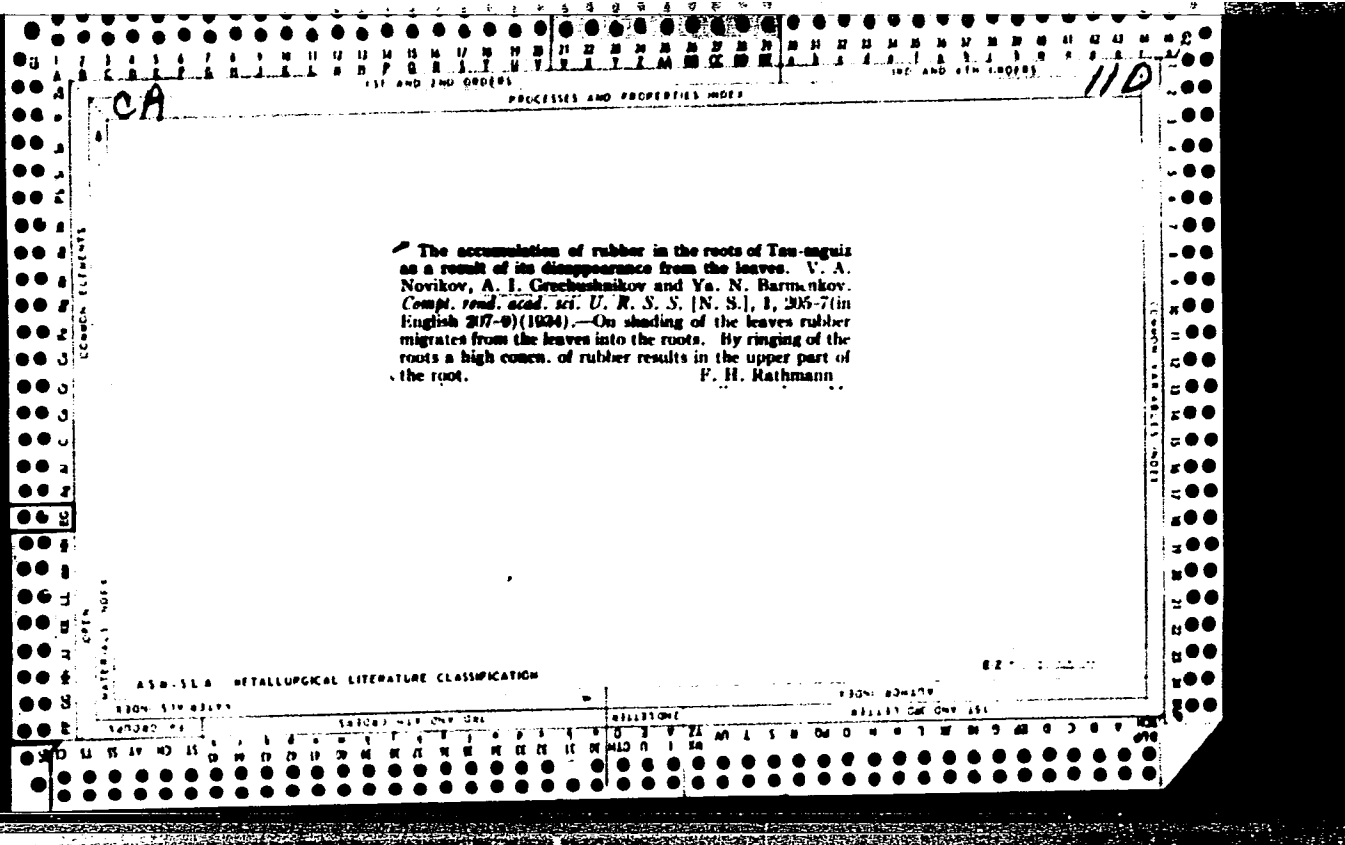
Fig. 2. 1--light source; 2--monochromator; 3--IR polarizers; 4--thermal chamber; 5--IR detectors; 6--summing amplifier; 7--multi-channel recording potentiometer.

through the sample (located in the thermal chamber) is recorded with respect to temperature variations. The authors report the results of some experiments carried out with these two instruments. Orig. art. has: 8 figures.

SUB CODE: 20,09,14/ .SUBM DATE: 14Jun66/ ORIG REF: 005/ OTH REF: 001







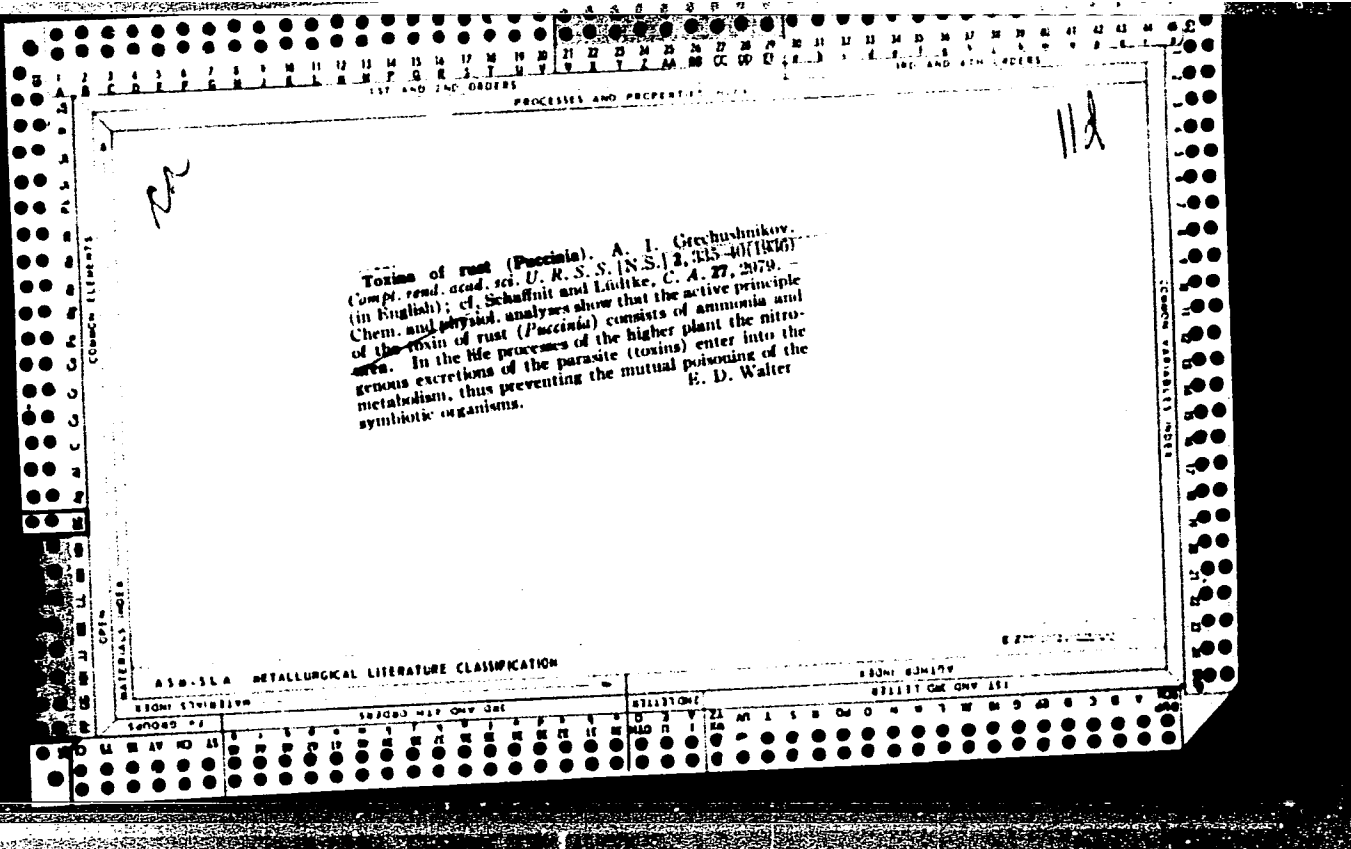
PROCESSES AND PROPERTIES OF...

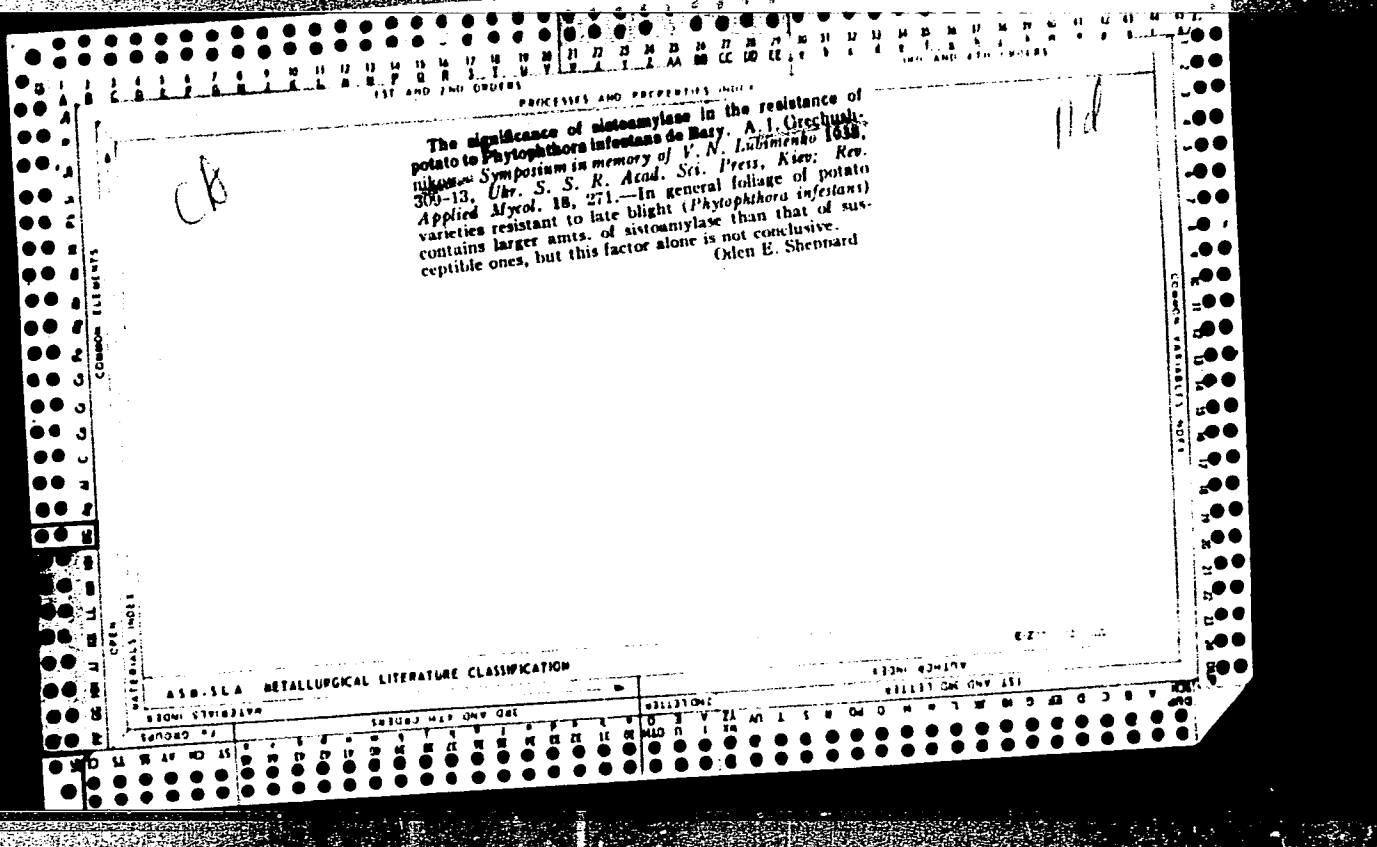
The physiology of the incubation period in rust infections. A. I. Gruchushnikov. *Compt. rend. acad. sci. U. R. S. S. [N. S.]*, 2, 245-7 (1936) (in English).—Oats was infected with *Puccinia coronifera*. After an increase during the first days of infection photosynthesis falls and remains low even after the appearance of pustules. The respiration increased. Respiratory coeffs. were low before the parasite formed spores and abruptly increased thereafter. The intensification coincided with the appearance of urea in the tissues. Walter H. Seegers

ASACSLA METALLOGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UQ UR US UT UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VQ VR VS VT VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WQ WR WS WT WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YQ YR YS YT YU YV YW YX YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ





Processes and Properties Notes

CA

11E

Variation of sialosmylase in potato due to different conditions of growing. A. I. Gorchushnikov... *Compt. rend. acad. sci. U. R. S. S. 25, 688-90 (1939) (in English).*—
 The sialosmylase activity of the potato is increased by K fertilization either alone or in combination with other fertilizers; it decreases under N and P fertilization and when the day-length is curtailed to 8 hrs. J. T. S.

COMMON ELEMENTS

MATERIALS NOTES

ASB-518 METALLURGICAL LITERATURE CLASSIFICATION

193000 193001 193002 193003 193004 193005 193006 193007 193008 193009 193010 193011 193012 193013 193014 193015 193016 193017 193018 193019 193020 193021 193022 193023 193024 193025 193026 193027 193028 193029 193030 193031 193032 193033 193034 193035 193036 193037 193038 193039 193040 193041 193042 193043 193044 193045 193046 193047 193048 193049 193050 193051 193052 193053 193054 193055 193056 193057 193058 193059 193060 193061 193062 193063 193064 193065 193066 193067 193068 193069 193070 193071 193072 193073 193074 193075 193076 193077 193078 193079 193080 193081 193082 193083 193084 193085 193086 193087 193088 193089 193090 193091 193092 193093 193094 193095 193096 193097 193098 193099 193100

CA

11D

Changes of peroxidase activity in cancer-stable and -sensitive potatoes in the course of infection by *Synchytrium endobioticum*. A. I. Grechushnikov and N. N. Yukovleva. *Doklady Akad. Nauk SSSR* 73, 217-8 (1951); cf. *C.A.* 44, 2187f. — Both types of potato plant show peroxidase activity increase, but the cancer-stable variety shows a higher degree of increase within 12 hrs. after infection (20-40%, against 7-10% for sensitive varieties). On the 6th day the sensitive variety shows a greater increase of the enzyme than the stable form, but on the 10th day, the tumor development leads to a sharp decline. G. M. Kosolapoff

CA

Carbohydrate metabolism in cancerous growths in potato. A. I. Grechushnikov and N. N. Yakovleva. *Doklady Akad. Nauk S.S.S.R.* 70, 303-4 (1951).--A lower than normal (70-80%) level of starch is found in potatoes afflicted with cancer caused by *Synchytrium endobioticum*. Starch grains are absent in cells immediately surrounding the infection. Glucose level is 150-250% of normal within the growth and much Ca oxalate is deposited within it, probably formed from incomplete oxidation of glucose. Free acid level within the growth is 139% of normal, and the pH level is 5.2-5.4 against normal 6.2-6.4. G. M. K.

GRECHUSHNIKOV, A. I.

USSR/Agriculture - Plant physiology

Card 1/1 : Pub. 22 - 37/44

Authors : Grechushnikov, A. I., and Yakovleva, N. N.

Title : Properties of fat extracted from cancerous outgrowths of potato tubers

Periodical : Dok. AN SSSR 97/6, 1077-1079, Aug 21, 1954

Abstract : The characteristics of fats (oils) extracted from cancerous outgrowths of potato tubers, are described. It was found that such oil contains a greater amount of acids and differs from other vegetable oils by a high saponification index which is close to the point of saponification of coconut oil. Five USSR references (1940-1952). Table.

Institution : Scient. Research Institute of Potato Growing, Malakhovka, Moscow region

Presented by : Academician A. L. Kursanov, May 25, 1954

GRECHUSHNIKOV, A. I.

MD Changes in composition of glycoalkaloids in interspecific hybrids of *Solanum demissum* and *S. tuberosum*. A. I. Grechushnikov (Sci. Research Inst., Potato Recon. Malakhsivka). *Trud. Rastenii* 2, 476-82 (1958).--Varieties of *S. demissum* contain different levels of demissine, which is the glycoalkaloid toxic to the Colorado beetle. Hybrids with *S. tuberosum*, which contains solanine, contain both glycoalkaloids; following generations of the hybrids tend to lose the demissine content and contain more and more solanine. Demissine can be increased by addn. of B along with CaO to the soil. B also raises the solanine content in potatoes but does not improve the resistance to the Colorado beetle.
G. M. Kosolapoff

USSR/Cultivated Plants - Potatoes, Veg Tubers, Melons.

1.

Abs Jour : Dokl Akad. Nauk SSSR - Biol., No 10, 1958, 44095

Author : Gruchichnikov, A.I., Nesterova, H.F.

Inst : -

Title : Stolon Roots and Their Role in Feeding Potato with Phosphorus.

Orig Pub : Kartvel', 1957, No 3, 30-36.

Abstract : It was established at the Institute of Potato Raising with the aid of radioactive ^{32}P that the stolon roots assimilate P from the soil with their entire surface and transmit it to all the organs of the plant. -- V.V. Iroshchev.

Card 1/1

- 50 -

~~GRECHUSHNIKOV, A.I., POPKOVA, K.V.~~

Reduced resistance to *Phytophthora infestans* in ringed leaves of blight resistant potato varieties [with summary in English]. *Izv. AN SSSR. Ser. biol. no. 4:456-462* J1-Ag '58 (MIRA 11:8)

1. Nauchno-issledovatel'skiy institut kartofel'nogo khozyaystva, Korenevo, Moskovskaya oblast'.
(POTATOES--DISEASE AND PEST RESISTANCE)

GRECHUSHNIKOV, A.I.; YAKOVLEVA, N.N.

Reaction of the potato plant to the infection with the fungus
producing potato wart and its toxic substances. Biokhim.pl. i
ovoshch. no.5:147-158 '59. (MIRA 13:1)

1. Nauchno-issledovatel'skiy institut kartofel'nogo khozyaystva
i Vsesoyuznaya nauchno-issledovatel'skaya stantsiya po raku
kartofelya.

(Potato wart)

GRECHUSHNIKOV, A.I.; KIRYUKHIN, V.F.

Uptake and distribution of labeled phosphorus in the potato plant
under conditions of foliar feeding. Dokl. AN SSSR 142 no.3:719-
722 Ja '62. (MIRA 15:1)

1. Predstavleno akademikom N.V.TSitsinym.
(Plants, Effect of phosphorus on) (Potatoes)

GRECHUSHNIKOV, A.I.; SEREBRENIKOV, V.S.

Effect of γ -irradiation of tubers on the carbohydrate and protein metabolism in potato plants. Biokhim.pl.i ovoshch. (MIRA 16:1) no.7:51-59 '62.

1. Nauchno-issledovatel'skiy institut kartofel'nogo khozyaystva.
(Potatoes) (Plants—Metabolism)
(Gamma rays—Physiological effect)

GRECHUSHNIKOV, A.I.; KIRYUKHIN, V.P.; SEREBRENNIKOV, V.S.; TEKTONIDI, I.P.

Some physiological and biochemical changes in potatoes produced
by treating the tubers with gibberellin. Fiziol. rast. 11 no.4:
620-629 J1-Ag '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy institut kartofel'nogo khozyaystva,
Malakhovka Moskovskoy oblasti.

3

L 53997-65

ACCESSION NR: AP5017373

UR/0020/65/160/004/0960/0963

AUTHOR: Kugatova-Shenyakina, G. P.; Ushakova, V. F.; Rudenko, V. A.; Smirnova, G. P.; Grechuhnikov, A. I.; Mishurovskaya, L. M.; Agakishiyev, D. A.; Pen'kov, L. A.

TITLE: New growth stimulators

3
B

SOURCE: AN SSSR. Doklady, v. 160, no. 4, 1965, 960-963

TOPIC TAGS: plant development

Abstract: Compounds from the following groups were synthesized by the authors and found to be highly active as plant growth stimulators: delta-3-cyclohexenyl- and cyclohexylbutanolones, delta-3-cyclohexenylbutenones, cyclohexylbutanes, and cyclohexylbutenones. The authors were particularly interested in determining the relationship between the structure and degree of activity of the compounds. Laboratory and field tests on the potato showed: (1) compounds of the cyclohexene series were more active than the corresponding compounds of the cyclohexane series; (2) the introduction of a methyl group into the ring, especially in position 2 or 6, significantly increased the activity of the compound; (3) the substitution of a phenyl for a methyl group increases the activity even more; (4) the introduction of a second methyl

Card 1/2

L 53997-65

ACCESSION NR: AP5017373

group into the ring not only does not increase the activity of the compound, it may even decrease it; (5) growth stimulation also depends on the spatial structure of the molecule. Orig. art. has 6 tables.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR); Institut kartofel'nogo khozyaystva, Akademii nauk TurkmSSR (Institute of Potatoe Growing, Academy of Sciences TurkmSSR); Institut botaniki, Akademii nauk TurkmSSR (Institute of Botany, Academy of Sciences TurkmSSR); Institut ovoshchnogo khozyaystva, Akademii nauk TurkmSSR (Institute of Vegetable Growing, Academy of Sciences, TurkmSSR).

SUBMITTED: 02Jun64

ENGL: 00

SUB CODE: LS, OC

NR REF SOV: 004

OTHER: 001

JPRS

Oct
Card 2/2

GRECHUSHNIKOV, G.A., glavnyy inzhener; SHOFFA, N.F., inzhener.

Welding one-dimensional and three-dimensional reinforcement frames
on the MTP-75 and MTB-100 welding machines. Stroi.prom.34 no.6:8-10
Je '56. (MLRA 9:9)

1.Orgstrey Minmetallurgkhimstroya SSSR.
(Reinforced concrete) (Electric welding)

SKVORTSOV, S.G., inzh.; BYKOVSKIY, G.P., inzh.; VASINA, I.N., inzh.; VORONIN, A.D., inzh.; GEL'BSHTAYN, I.V., inzh.; POLYAKOV, L.L., inzh.; GRECHUSHNIKOV, G.A., inzh., red.

[Catalog of designs of stands, construction yards, equipment and devices for making prestressed reinforced concrete elements]
Al'bom-katalog proektov stendov i poligonov, oborudovaniya i prispособleniya dlya izgotovleniya predvaritel'no napriashennykh zhelezobetonnykh konstruktсий. Moskva, Tsentral'noye biuro tekhn. inform. No. NZh-2. 1957. 118 p. (MIRA 11:10)

1. Akademiya stroitel'stva i arkhitektury SSSR, Nauchno-issledovatel'skiy institut tekhnicheskoy pomoshchi stroitel'stvu.
(Prestressed concrete)

SOV/100-11-3-9

AUTHOR: Petrov, N.S., Candidate of Technical Sciences.
Grechushnikov, G.A., Engineer.

TITLE: Development of Mechanization of Finishing Works in the Building Industry During the Past 40 Years and the Program for the Future. (Razvitiye Mekhanizatsii otdelochnykh rabot v stroitel'stve za 40 let i blizhayskiye zadachi v stoy oblasti.)

PERIODICAL: Mekhanizatsiya Stroitel'stva, 1957, Nr 11 pp 14-19.

ABSTRACT: A survey is given of the mechanization of plastering and other decorative finishes during the past forty years. Figure 1 illustrates the output of machines and mechanized appliances for finishing processes during the years 1917-1956. In 1953 the production of the first mechanized tools for finishing processes commenced in the 'Minstroidormash' factory (see Figure 2), mechanized appliances for decorations (Figure 3) and mechanized implements for high quality floor finishes (Figure 4) e.g.:

- S-441 and S-442 for sieving mortar
- S-443 continuous screw-type feeder for pneumatic transportation of gypsum plaster
- S-405 mortar mixing machine

Card 1/2

SOV/100-11-3-9

Development of Mechanization of Finishing Works in the Building Industry During the Past 40 Years and the Program for the Future.

S-404A and OL-101 paint mixers
S-398 a machine for parquet flooring
S-444 a working bench
S-415 a grooving machine
also various machines for the application of distemper, emulsion paint etc. :
S-366, S-383, O-59, S-421, O-58, S-365, S-426, S-372, O-54A.

Figure 5 illustrates the reduction in weight and improvement in design of a mortar suction machine, Type S-317, designed by K.M. Sokolov and D.I. Sokolovskiy and manufactured by the Rostokinsky factory. Figure 6 shows the improved design of a pneumatic gun for paint application. Table 1 indicates the increase in volume of mechanically-applied plaster and decorative finishes during the last five years. Table 2 gives the estimated cost of production of the above-mentioned mechanized tools in the period 1958/60. Figure 7 shows the output requirements of these machines for the period 1957/60. There are seven figures and two tables.

Card 2/2

1. Construction equipment—Development
equipment—Design 2. Construction
3. Construction equipment—Applications

DIL'DIN, M.S.; VASINA, I.N.; VORONIN, A.D.; GROMOVAYA, V.B.; PANKOVETS,
P.L.; GRECHUSHNIKOV, G.A., inzh., red.

[Album of designs for devices, implements, and instruments
for assembling large-block buildings] Al'bom chertezhei pri-
sposoblenii, inventaria i instrumentov dlia montazha krupno-
blochnykh zdani. Vypusk KB-2. Moskva, Biuro tekhn.infor-
matsii, 1958. 155 p. (MIRA 12:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut
organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroi-
tel'stvu. 2. Sotrudniki Orgstroya Nauchno-issledovatel'skogo
instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi
stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for
Dil'din, Vasina, Voronin, Gromovaya, Pankovets).
(Building--Tools and implements)

GRECHUSHNIKOV, G., inzh.; KHAIT, I., inzh.

Over-all mechanization and automation in making reinforcements.
Stroitel' no. 3:14-19 Mr '61. (MIRA 14:2)
(Reinforced concrete)

GRECHUSHNIKOV, G.; DIL'DIN, M.

Helping the assemblers of series 1-464 large-panel houses.
Stroitel' no.5:19-21 My '61.

(MIRA 14:6)

1. Glavnyy inzhener Gosudarstvennogo instituta po vnedreniyu
peredovykh metodov raboty i truda v stroitel'-tve (for Grechushnikov).
(Reinforced concrete construction--Equipment and supplies)

GRECHUSHNIKOV, N.I.

DECEASED

1962/4

c 1961

SEE ILC

GRECHUSHNIKOV, N.P.; NOSOV, F.V.

Manufacturing polished briquets from granulated coal. Trudy MGRI
37:205-208 '61. (MIRA 15:1)
(Coal, Pulverized)

GRECHUSHNIKOV, P. I.

BS

28R1102

USSR/Ships - Construction Materials May/June 1947
Lumber - Fireproofing

"Mechanical Processing of Fireproofed Lumber," P. I. Grechushnikov, *Engr*, 1 1/2 pp

"Sudostroeniye" No 3

In general, wooden parts for ships are cut to size and then processed for fireproofing, but this method has many drawbacks. The author discusses a method whereby the lumber is processed and then worked to required shape and size. He states that contemporary machinery has to fulfill the following requirements: It must have a circular saw and planers, drills, borers, millers to process the wood after it has been impregnated, and a full complement of manual tools to BS 28R1102

USSR/Ships - Construction Materials May/June 1947
(Contd)

finish the wooden parts. However, chemically impregnated wood is very hard on the working surfaces of the instruments. Therefore, he recommends that parts be treated after they have been shaped.

GRECHUSHNIKOV, P.M., inzhener; ROZOV, N.A., inzhener

SECRET

A leading road machinery station in the Kazakh S.S.R. Avt.dor.
18 no.5:8-10 S'55.

(Kazakhstan--Road machinery)

(MLRA 9:1)

GRECHUSHNIKOV, S. [Hrechushnykov, S.]; DANILOV, G. [Danylov, H.];
LESHCHINSKIY, M. [Lishchyns'kyi, M.], kand.tekhn.nauk;
CHERNYSHEV, Yu. [Chernyshov, IU.], nauchnyy sotrudnik

Making blocks using granulated slags and distillation wastes.
Bud.mat.i konstr. 2 no.1:28-30 P '60. (MIRA 13:6)

1. Direktor Makeyevskogo zavoda shlakovykh materialov i blokov
(for Grechushnikov). 2. Machal'nik tsekha Makeyevskogo zavoda
shlakovykh materialov i blokov (for Danilov).
(Building blocks) (Slag) (Industrial wastes)

GRECHUSHNIKOV, S. Ya., inzhener; KOSHELENKO, V. I., inzhener; MAZUROV, D. Ya.,
inzhener; ZAVODSKIY, Ya. M., inzhener

Obtaining rapid-hardening cement from the fine particles retained
in bag filters. TSement 21 no.5:25-27 S-0 '55. (MLRA 9:1)
(Cement industries)

Grechushnikov, V.N.

USSR/Optics - Potometry. Colorimetry

K-10

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13194

Author : Shamburoo, V.A., Grechushnikov, V.N.

Inst : -

Title : Wedge Diaphragms for Photometers.

Orig Pub : Izmerit. tekhnika, 1956, No 3, 52-56

Abstract : Description of wedge diaphragms for photometers, which make it possible to obtain a uniform scale of the values of the ratios of the areas of the entrance pupils S_0/S in two branches of the photometric system, as well as of $\log S_0/S$ or S/S_0 . The diaphragms comprise a combination of two overlapping plates (or disks) with openings. One disk is movable, the other is not. By choosing the forms of the holes it is possible to obtain the required variation of the area of the pupil with the coordinate that characterizes the mutual shift of the plates (disks). The formulas necessary for the design of diaphragms of this type are given.

Card 1/1

GRECHUSHNIKOV, Ye. A., inzh.

Industrial districts must be planned comprehensively. Prom
stroi 41 no. 12:4-6 D '63. (MIRA 17:5)

POROKHOV, F.F., prof.; NALETOV, A.V., [deceased]; Primalni uchastiye:
SKOVORODIN, N.M., assistant; GRECHISHNIKOVA, G.D., starshiy laborant;
KROTKOV, A.N., veter. vrach; SUKHANOV, K.M., veterin. vrach

Importance of the biomyacin-vitamin concentrate in a combination
of measures for ridding farms of infectious atrophic rhinitis
of swine. Sbor. nauch. trud. Ivan. sel'khoz. Inst. no.19:
155-159 '62. (MIRA 17:1)

1. Kafedra veterinarii i zoogigiyeny (zav. - prof. F.F. Porokhov)
Ivanovskogo sel'skokhozyaystvennogo instituta. 2. Nachal'nik
Ivanovskogo oblastnogo veterinarnogo otdela (for Naletov).
3. Uchebnoye khozyaystvo "Vasil'yevskoye", Ivanovo (for Sukhanov).

GRECHUK, V.S.

Side wear of rails on curves due to the movement of electric
multiple-unit trains. Sbor. trud. LIIZHT no.187:108-124 '62.
(MIRA 16:8)

GRECHUSHKINA, N.N.; MANAYEVA, M.M.

Significance of the acidity of the medium to *Lactobacterium lindneri*.
Nauch. dokl. vys. shkoly; biol. nauki no.1:161-166 '64.

(MIRA 17:4)

1. Rekomendovana kafedroy mikrobiologii Moskovskogo
gosudarstvennogo universiteta im. M.V.Lomonosova.