YERMOLAYEVA, Ye.Ye.

SAPOZHNIKOV, D.I.; YERMOLAYEVA, Ye.Ye.

Varvara Aleksandrovna Brilliant-Lerman; obituary. Bot.zhur. 39 no.6: 940-943 N-D '54. (MLRA 8:2)

1. Botanicheskiy institut im. V.L.Komarova Akademii nauk SSSR, Leningrad.
(Brilliant-Lerman, Varvara Aleksandrovna, 1888-1954)

YERMOLAYEVA, Ye. Ye.

Daily and seasonal course of photosynthesis and the accumulation of dry substance in potatoes, tomatoes and makhorka. Trudy Bot. inst. Ser.4 no.11:208-224 '56. (MLRA 9:9)
(Photosynthesis) (Potatoes) (Tomatoes) (Tobacco)

Ye Ya YERMOLAYEVA

USSR/Cultivated Plants - Potatoes. Vegetables. Melons. etc. M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15634

Author : Ye.Ya. Yermolayeva

Inst : The Botanical Institute of the Academy of Sciences USSR.

Title : The Effect of Large Phosphorous Dosage on Tomato Cold Resistance.
(Vliyaniye vysokikh doz fosfora na povysheniye kholodostoykosti tomatov).

Orig Pub : Dokl. AN SSSR, 1956, 111, No 5, 1130-1133

Abstract : At the Botanical Institute of the Academy of Sciences USSR the effect of phosphorous dosage was studied in the Gruntovyy Gribovskiy variety at lowered temperatures with an eye toward several physiological processes in the tomato. The experiment was set in soil cultures according to the schema: double rate of P, double rate

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YERMOLAYEVA, Ye.Ya.

Effect of carbon dioxide concentration of photosynthesis in cultivated plants. Trudy Bot.inst.Ser. 4 no.13:46-63 '59. (MIRA 13:3)
(Photosynthesis) (Potatoes) (Tomatoes)

NIKOLAYEVA, Ye.Ya.; FILIPPOVICH, L.N.; SHILOVA, M.A.

Translocation of assimilates in Perilla at different stage of development[w.s.i.E.]. Trudy Bot. inst.Ser.4 no.14:73-88 '60.
(MIRA 14:3)

(Plants, Motion of fluids in)

KOZLOVA, N.A.; YERMOLYAYEVA, Ye.Ya.

Use of biologically active substances in plant protection.
Trudy Len. ob-va est. 74 no. 1:49-52 '63. (MIRA 17:9)

YERMOLAYEVA, Z.V.

EXCERPTA MEDICA Sec.4 Vol.10/3 Microbiology Mar 57

527. ERMOLYEVA Z. V., SUKHAREVA M.E., BLUMENTAL K. V. and ISKRZHITSKAYA A. I. *The use of biomycin and streptomycin with ekmolin in experimental infection and in clinical cases in the fight against diphtheria carriers (Russian text) PEDIATRIJA 1955, 5/6 (40-44)

Diphtheria bacilli showed in in-vitro tests their susceptibility toward biomycin and streptomycin with a lesser degree to ekmolin, and the highest susceptibility to the combination of biomycin, streptomycin and ekmolin. This would indicate a synergistic action of all 3 antibiotics. The therapeutic tests also showed the highest effect in the combination of all 3 antibiotics even when used in smaller dosage. Oral administration of biomycin with ekmolin caused in diphtheria carriers a rapid elimination of the bacilli from the throat. Anigstein - Galveston, Tex. (XX,4,6,7,17)

YERMOL'YEVA, Z.V.; VAYSBERG, G.Ye.; GIVENTAL', N.I.; LIKINA, T.N.

Ciine in association with other antibiotics in acute radiation sickness in mice. Antibiotiki 5 no.4:37-41 Jl-Ag '60. (MIRA 13:9)

1. Laboratoriya novykh antibiotikov pri kafedre mikrobiologii TSentral'nogo instituta usovershenstvovaniya vrachey.
(ANTIBIOTICS) (RADIATION SICKNESS)

YERMOL'YEVA, Z. V.; FURER, N. M.; VAYSBERG, G. Ye.; RAVICH, I. V.; NEMIROVSKAYA. B. V.

"New antibiotic preparations and other biologically active compounds of natural origin."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

Dept of Microbiology & Lab of New Antibiotics, Cent Inst for Post-Graduate Training, Moscow.

YERMOL'YEVA, Z. V.; ERAUDE, A. I.; VEDMINA, Ye. A.; FURER, N. M.; VAYSBERG, G. Ye.

"The problems of antibiotica, interferon, bacterial polysaccharides and the resistance of microorganisms."

report presented at 4th Intl Cong, Hungarian Soc of Microbiologists, Budapest, 30 Sep-3 Oct 64.

Inst of Advanced Medical Education, Moscow.

ROZHDESTVENSKAYA, V.I.; NEBYLITSYN, V.D.; BORISOVA, M.N.; YERMOLAYEVA-TOMINA, L.B.

Comparative study of various indexes of the strength of the nervous system in man. Vop. psikhol. 6 no.5:41-56 S-O '60. (MIRA 13:11)

1. Institut psikhologii APN RSFSR, Moskva.
(Nervous system)

YERMOLAYEVA-TOMINA, L.B.

Individual distinctions in the concentration of attention and the strength of the nervous system. Vop.psikhol. 6 no.2:84-95 Mr-Ap '60. (MIRA 13:7)

1. Institut psikhologii APN RSFSR, Moskva.
(Attention) (Nervous system)

YERMOL'CHENKO, YE. Z.

1. YERNOL'CHENKO, YE.Z.; RABOVSKIY, M.G.; POPOV, G.M., ENG.

2. USSR (600)

4. Steel - Heat Treatment

7. Gradual annealing of a steel strip without oxidizing its surface. Prom.energ. 9 no.10, 1952.

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

YEMOL'CHENKO, Ye. Z.

YEMOL'CHENKO, Ye. Z. and RABOVSKIY, M. G. Combined Hardening of Steel Tape without Surface Oxidation (Stupenchataya Zakalka Stal'noy Lenty bez Okisleniya Yeye Poverkhnosti), pp. 7-8 - 1952.

The use of a furnace with an inclined heat chamber is suggested in order to eliminate air circulation and oxydation of steel surfaces before hardening in a lead bath. This suggestion won one of the fourth prizes at the Seventh All-Union Contest on Power Economizing. (Drawings).

SO: PROMYSHLENNAYA ENERGETIKA, No. 10, Oct. 1952, Moscow (1502270)

RYBAKOVA, L.M.; YERMOL'CHIK, S.Z.

Porosity development in copper under the effect of cyclic heat treatment. Fiz. met. i metalloved. 9 no.5:733-740 My '60. (MIRA 14:4)

1. Institut mashinovedeniya AN SSSR.
(Copper—Metallography)
(Thermal stresses)

RYBAKOVA, L.M.; YERMOL'CHIK, S.Z.

Investigating the substructure od copper annealed at various temperatures. Fiz.met.i metalloved. 15 no.3:439-443 Mr '63. (MIRA 16:6)

(Copper--Metallography) (Annealing of metals)

ACC NR: AT7003566 (N) SOURCE CODE: UR/3240/66/000/001/0088/0096

AUTHORS: Kotlyar, I. V.; Yermol'chik, V. N.

ORG: Kaliningrad Technical Institute for the Fish Industry and Management (Kaliningradskiy tekhnicheskiy institut rybnoy promyshlennosti i khozyaystva)

TITLE: On intrinsic stability calculations for gas turbine installations

SOURCE: Kharkov. Politekhnicheskiy institut. Energeticheskoye mashinostroyeniye, no. 1, 1966. Teploobmen i gazodinamika (Heat transfer and gas dynamics), 88-96

TOPIC TAGS: gas turbine, gas compressor, combustion chamber, stability criterion, vibration

ABSTRACT: The intrinsic stability of a gas turbine installation which consists of three turbines, two compressors, and two combustion chambers is analyzed. Without considering a regenerator, the study leads to 28 linearized equations that describe the free vibrations of the gas turbine installation. The stability criterion is defined by the quantity Y_j, given by

$$Y_j = -\frac{\Delta \Pi_j}{\Delta \omega_j} = -R_j \frac{d\omega_j}{d\omega_j dt},$$

where

$$R_j = \frac{1}{2\Pi_{j0}}.$$

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ACC NR: AT7003566

is the rotor time, I_j is the moment of inertia, and ΔM_j is the excess moment generated on the j-th shaft. Two extreme values are obtained for the stability criterion, one for each compressor shaft. These are:

$$1)\ Y_{1a} = A_1 \text{ at } R_2 \to \infty\ (\Delta n_2 \to 0)$$

$$2)\ Y_{1a} = A_1 - \frac{E_1 E_2}{A_2} \text{ at } R_2 \to 0\ (\Delta M_2 \to 0)$$

and

$$3)\ Y_{2a} = A_2 \text{ at } R_1 \to \infty\ (\Delta n_1 \to 0)$$

$$4)\ Y_{2a} = A_2 - \frac{E_1 E_2}{A_1} \text{ at } R_1 \to 0\ (\Delta M_1 \to 0)$$

A specific example is selected and the coefficients in the above 20 equations are evaluated. The results are then given in tabular form. Orig. art. has: 39 equations, 1 figure, and 1 table.

SUB CODE: 21, 20/ SUBM DATE: none/ ORIG REF: 001

Card 2/2

YERMOLENKA, N.F.

LEVITMAN, Kh.Ya.; YERMOLENKA, N.F.

Amperometric determination of copper in galvanic vats used for nickel, zinc, and cadmium plating. Vestsi AN BSSR, Ser. fiz.-tekh. nav. no.4: 133-137 '56. (MLRA 10:6)

(Copper) (Conductometric analysis)

YERMOLENKA, N.N.

TARASENKA, V.R., kandydat gistarychnykh navuk; ZHUNINA, L.A., kandydat tekhnichnykh navuk; YERMOLENKA, N.N., kandydat tekhnichnykh navuk.

("Glass manufacture in ancient Russia" by M.A. Bezborodov. Reviewed by V.R. Tarasenka, L.A. Zhunina, N.N. Ermolenka). Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.1:161-163 '57. (MLRA 10:6)
(Glass manufacture--History) (Bezborodov, M.A.)

YERMOLENKO, A.F.; NAUMOV, B.S.

Shortcomings in the organization of construction. Avtom., telem. i sviaz' 9 no.5:17 My '65. (MIRA 18:5)

1. Nachal'nik sluzhby signalizatsii i svyazi Yugo-Zapadnoy dorogi (for Yermolenko). 2. Nachal'nik tekhnicheskogo otdela sluzhby signalizatsii i svyazi Zakavkazskoy dorogi (for Naumov).

YERMOLENKO, A.F.

Participation of the students of a technical school in practical projects. Avtom.telem. i sviaz' 4 no.11:12 N '60. (MIRA 13:11)

1. Predsedatel' Gosudarstvennoy kvalifikatsionnoy komissii tekhnikuma imeni N.Ostrovskogo.
(Railroads--Employees--Study and teaching)
(Kiev--Technical education)

YERMOLENKO, A.F.

Mechanized devices for repairing communication lines. Avtom., telem. i sviaz' 5 no.10:23-24 O '61. (MIRA 14:9)

1. Nachal'nik sluzhby signalizatsii i svyazi Yugo-Zapadnoy dorogi.
(Telephone lines) (Telegraph lines)

YERMOLENKO, A.F.

The workers of the Zhmerinka railroad district work like all true Communists should. Avtom., telem.i sviaz' 6 no.4:20-22 Ap '62. (MIRA 15:4)

1. Nachal'nik sluzhby signalizatsii i svyazi Yugo-Zapadnoy dorogi.

(Railroads--Employees) (Railroads--Signaling)

YERMOLENKO, A.F.

Efficient work of volunteer design workers. Avtom., telem. i svias' 6 no.9:31-32 S '62. (MIRA 15:9)

1. Nachal'nik slushby signalizatsii i svyazi Yugo-Zapadnoy dorogi. (Railroads--Employees)

YERMOLENKO, A.I., professor

Large results of rectocolopexy according to the author's method. Khirurgiia 32 no.6:38-40 Je '56. (MLRA 9:10)

1. Iz gospital'noy khirurgicheskoy kliniki (dir. - zasluzhennyy deyatel' nauki prof. A.V.Smirnov) LSGMI.
(COLON, surg.
recto-colopexy, method)
(RECTUM, surg.
same)

YERMOLENKO, A.I., professor; KURBANGALEYEV, S.M., professor; EL'BERG, G.A., [redacted]-meditsinskikh nauk

Seventieth birthday of Aleksandr Vasil'evich Smirnov. Vest.khir. 78 no.2:154-155 F '57. (MLRA 10:3)
(SMIRNOV, ALEKSANDR VAIL'YEVICH, 1886-)

YERMOLENKO, A.I., Prof., FARBERMAN, V.I., kand.med.nauk., SITKEVICH, V.Yu.

Current picture of the patients in a septic surgery department and polyclinic. Sov.med. 22 no.11:109-113 N'58 (MIRA 11:11)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. A.V. Smirnov) Leningradskogo sanitarno-gigiyenicheskogo instituta.
(HOSPITALS,
septic surg., department (Rus))
(OUTPATIENTS SERVICES,
surg. (Rus))

YERMOLENKO, A.I.

Late results of Ermolenko's rectocolopexy in rectal prolapse.
Trudy LSGMI 39:333-346 '58. (MIRA 12:8)

1. Kafedra gospital'noy khirurgii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav.kafedroy - z.d.n., prof.A.V.Smirnov).
(RECTUM, dis.
prolapse, rectocolopexy (Rus))

Yermolenko, A.P.

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18(3)

67030

SOV/19-59-15-62/312

AUTHORS: Perel'man, Ye.G., Ladygina, A.A., Yermolenko, A.P., [redacted], A.B., and Kreshitskiy, [redacted]

TITLE: High-Strength Steel for Welded Constructions

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 15, p 29 (USSR)

ABSTRACT: Class 18d, 1_10. Nr 121466 (597636/22 of 18 April 1958). A high-strength steel containing nickel, chrome, silicon, manganese, vanadium, and tungsten. To improve the strength of the steel, the silicon and chrome content is increased to 1.5% and the percentage of components is as follows: carbon - 0.16 to 0.32%, silicon - 0.80 to 1.50%, nickel - 0.80 to 1.50%, vanadium - 0.10 to 0.25%, manganese - 0.50 to 0.80%, chrome - 0.80 to 1.50%, and tungsten - 0.50 to 1.20%; the sulfur and phospher content - not higher than 0.025%.

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18(3), AUTH

YERMOLENKO, A.P.; KOROLEVA, N.V.; KOROLEV, N.V.; LEONOV, Yu.V.

Quenching of hardened ferritic-austenitic chro[illegible]-nickel steel. Metalloved. i term. obr. met. no. 12:51-55 D '55. (MIRA 18:12)

SOV/133-59-1-20/23

AUTHORS: Yermolenko, A.P., Candidate of Technical Sciences and Konstantinov, N.I., Engineer

TITLE: The Use of Steel 38KhRA for the Manufacture of Large Parts (Primeneniye stali 38KhRA dlya izgotovleniya krupnogabaritnykh detaley)

PERIODICAL: Stal', 1959, Nr 1, pp 85 - 87 (USSR)

ABSTRACT: Structural steel 38KhA possesses a low hardenability due to which parts of a cross-sectional area above 150 mm, manufactured from this steel, have lower and unstable mechanical properties. As an increase in hardenability can be obtained by alloying with boron, an investigation was carried out as to the applicability of boron steel 38KhRA (GOST 4543-57) for manufacturing machine parts of a cross-sectional area up to 200 mm. The experimental 38KhA steel was produced in a 10-ton basic electric furnace, tapped into 2 ladles to one of which boron was added. Final deoxidation was done in the ladle according to two modifications: 1) aluminium (0.5 kg/t) was placed into the ladle before tapping, then when the ladle was 1/3 full, ferrotitanium (0.013%) and a 20% ferroboron was added (0.0035%); the metal retained in the ladle for 8 minutes and then teemed into ingots; 2) as above,

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but without the addition of ferrotitanium. Chemical compositions of the steels obtained, their hardenability (Figure 1) and mechanical properties (Table 1) are given. It was found that with the exception of hardenability mechanical properties of boron steels, deoxidised with and without titanium, did not differ so that in subsequent heats only deoxidation with aluminium was used. Further heats were done in a 35-ton basic open-hearth furnace. Deoxidation was effected by placing 300 kg of 45% ferrosilicon on the bottom of the ladle and when it was 1/3 full aluminium was added (0.5 kg/t) followed by ferroboron (0.0035%). Steel was retained in the ladle for 8 minutes and then teemed into 1.5-ton ingots. Ingots were rolled into billets for shafts for turbo-boring machines. The comparison of hardenability of the steel without and alloyed with boron is shown in Figure 2 and mechanical properties before and after hardening in Tables 2 and 3, respectively. On the basis of the results obtained, steel 38KhRA is recommended for the manufacture of shafts of turbo-boring machines as well as a replacement

The Use of Steel 38KhRA for the Manufacture of Large Parts

for steels 38KhA and 40Kh for manufacturing parts of a cross-sectional area of up to 200 mm, when due to the low hardenability of these steels their impact strength is below that required.
There are 2 figures and 3 tables.

YERMOLENKO, Mariya Nikitichna; TORKAYLO, I., red.

[Prospects for the specialization and distribution of cattle growing] Perspektivy spetsializatsii i razmeshchenila skotovodstva. Minsk, Urozhai, 1965. 79 p. (MIRA 19:1)

YEMOLENKO, A.S., aspirant

Morphology of the spinal ganglia in hypertension. Zdrav. Turk. 3 no.6:20-24 N-D '59. (MIRA 13:5)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. O.Ya. Reshabek) Turkmenskogo gosudarstvennogo meditsinskogo institut im. I.V. Stalina.

(HYPERTENSION) (NERVES, SPINAL)

YERMOLENKO, A.S., aspirant

Morphological condition of the nerve elements in various parts of the skin of persons dying from hypertension. Zdrav. Turk. 4 no. 3:20-26 My-Je '60. (MIRA 13:10)

1. Iz kafedry patanatomii (zav. - prof. O.Ya. Reshabek) Turkmenskogo gosudarstvennogo meditsinskogo instituta im. I.V. Stalina.

(SKIN—INNERVATION) (HYPERTENSION)

REZHABEK, O.Ya., prof.; YERMOLENKO, A.S., aspirant

Morphological changes in the radix posterior nervorum spinalium in persons dying from hypertension. Zdrav. Turk. 4 no.4:28-32 Jl-Ag '60. (MIRA 13:9)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. O.Ya.Rezhabek) Turkmenskogo gosudarstvennogo meditsinskogo instituta im. I.V.Stalina.
(NERVES, SPINAL) (HYPERTENSION)

YERMOLENKO, A. S. Cand Med Sci -- "Morphological state of the nervous elements of various parts of the skin of persons who died of hypertension." Ashkhabad, 1961 (Stalinabad State Med Inst im Abuali Ibn-Sino). (KL, 4-61, 208)

S/048/61/025/012/011/022
B117/B104

AUTHORS: Yermolenko, A. S., and Shur, Ya. S.

TITLE: The nature of the coercive force in alloys of the "Alnico" type

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1479 - 1483

TEXT: Alloys of the system Fe-Ni-Al differ from other age-hardening alloys used for permanent magnets so far as their maximum coercive force is not due to quenching the material from the temperature of the single-phase state and subsequent tempering (treatment of type I) but rather to cooling at a certain critical rate and tempering (treatment of type II). The difference between the two types of treatment was studied in the present paper, basing on studies of magnetic properties of monocrystals of an alloy containing 24% Co, 14% Ni, 8% Al, 3% Cu, 51% Fe. The disk-shaped specimens were 0.35 mm thick and 6 mm in diameter. Their surfaces coincided with the crystal plane (100) with an error of up to 2°. The heat treatment was made in an argon atmosphere. A rotary magnetometer was

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The nature of the coercive...

used to measure the magnetic characteristics. The coercive force was measured at room temperature by the usual ballistic method. The variation in coercive force and torque amplitudes was measured at 625°C in a field of 16,600 oe, according to the tempering time. The coercive force of specimen no. 2 (treatment of type II) rapidly reaches its maximum value of 430 oe and remains practically constant beyond this value. After tempering specimen no. 1 (treatment of type I) for 60 hours, its coercive force reaches a value of 90 oe at 625°C which can, however, be increased by additional tempering at 700°C and subsequent annealing at 625°C. After a 54-hour tempering, both specimens exhibit identical torque amplitudes which even increase in no. 1 if the process is continued. In specimen no. 1, the torque amplitudes are negative in the entire field and slightly dependent on the field. In no. 2, the amplitudes are positive in fields of less than 8000 oe and negative in stronger fields. After a 60-hour tempering at 625°C the amplitudes are positive in the entire field. In the present case, the shape of the torque characteristics was related to the presence of two types of anisotropy in the specimen: (1) crystallographic magnetic anisotropy and (2) an anisotropy related to the form of

precipitates (anisotropy of the stray fields). During the decay the last-mentioned type plays an ever more important role: the characteristics are shifted from the negative to the positive range. After a 60-hour tempering at 625°C the torque characteristics for both specimens have practically identical amplitudes over a wide range of fields, whereas the coercive forces differ from each other by a factor of nearly 5. Investigation of the saturation magnetization I_s and of the coercive force in the temperature range, where these characteristics change reversibly, has shown that both specimens agree as to I_s and temperature dependence. This indicates that independent of the type of treatment, the phases resulting from decay are of identical or similar composition. Great differences in the relative amounts of the phases are also unlikely. After tempering the specimens for 60 hours, rotational hysteresis as a function of the strength of the external field exhibited the same character as ordinary hysteresis in an alternating magnetic field. The large differences in the coercive force of the specimens, produced by the two types of treatment, are attributed to a definite distribution of grains

The nature of the coercive...

according to their coercive force. The special advantage of the treatment of type II is that a structure with almost equal grain sizes can be obtained. The grain size corresponds to the coercive force. The authors thank L. V. Smirnov for the growing of monocrystals, and L. M. Magat for having determined their orientation. There are 5 figures and 9 references: 4 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Wohlfarth, E. P., Philos. Mag., Suppl., 8, 87 (1959); Clegg, A. G., McCaig, M., Proc. Phys. Soc. London, B, 70, 817 (1957); Nesbitt E. A., Williams H. J., Bozorth R. M., J. Appl. Phys., 25, 1014 (1954); Fisher J. S., Hollomon J. H., Turnbull D., J. Appl. Phys., 19, 775, (1948).

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

18.1142

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S/126/62/014/003/003/022
E021/E435

AUTHORS: Yermolenko, A.S., Shur, Ya.S.

TITLE: The mechanism of thermomagnetic treatments of high-coercive alloys of the alni and alnico types

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.3, 1962, 348-357

TEXT: The aim of the work was to investigate the influence of the initial structural state, temperature, time and other conditions during isothermal treatment in a magnetic field on the formation of uniaxial magnetic anisotropy of the alloys. Single crystals of alnico (14% Ni, 24% Co, 8% Al, 3% Cu, 51% Fe) and alni (26% Ni, 14% Al, 3% Cu, 57% Fe), prepared from a melt produced in a high frequency vacuum furnace, were used. After prolonged heating near the melting point, the bars contained coarse crystals. Single crystalline discs with diameter 5 to 6 mm and 0.4 to 0.5 mm thick were cut from the bars in the (100) and (110) planes. After various heat treatments (in an argon atmosphere) both with and without a magnetic field, values of the mechanical torque and the coercive force along and perpendicular to the

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direction of the magnetic field were determined at room temperature. The mechanical torque was measured in fields of 4700, 9200, 13700 and 19400 oersteds. Curves were obtained characterizing the total anisotropy of the crystals.
Results: the uniaxial anisotropy during thermomagnetic treatment of the alloys forms independently of the initial structural state at all temperatures below the Curie point of the strongly magnetic phase provided diffusion occurs during the process. During their process of growth, the shape anisotropy of the precipitates, forming during decomposition of Fe-Ni-Al alloys, increases; the cause being that this leads to a decrease in the magnetostatic energy and additionally it may also be due to the anisotropy of the energy of the surface tension between two phases. Thermomagnetic treatment of the alloys results in the orientation of the precipitates with their long axes along the direction of the magnetic field. This orientation may occur both during nucleus-formation of the precipitate and at later stages of decomposition of the solid solution. In the latter case reorganization of the structure of the alloys occurs both by changes in form of the

precipitate and by growth of some particles at the expense of others. There are 8 figures and 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: June 11, 1962

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S/126/62/014/003/016/022
E073/E420

AUTHORS: Shur, Ya.S., Magat, L.M., Yermolenko, A.S.

TITLE: On the relation between the crystal structure and the magnetic properties of alnico

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.3, 1962, 458-461

TEXT: So far, the nature of the structural transformations which lead to a reversible change in the magnetic properties of alnico has not been resolved and the authors considered it of interest to try to observe these transformations by accurate measurement of the lattice parameters and a determination of the average distance between defects from the positions of the satellites on the X-ray spectra. Specimens in the form of discs and plates cut from single crystals in the plane (100) of the alloy (24% Co, 14% Ni, 8% Al, 3% Cu, remainder Fe) were used in studying the temperature dependence of the coercive force and the saturation magnetization by means of a rotary magnetometer. It was found that these properties do not depend on the preceding heat treatment but are determined solely by the last tempering temperature, which

On the relation between ...

indicates that the magnetic properties of coherent defects and of the matrix change reversibly with changing temperature. Regardless of the previous heat treatment, tempering at 560°C led to the same value of the lattice parameters. Further heating to higher temperatures brings about an increase in the lattice parameter which approaches the value pertaining to a specimen quenched from 1250°C; tempering at 560 to 750°C leads relatively quickly to a certain state of the solid solution for each temperature regardless of the previous heat treatment. It is concluded that when cooling from 1250°C at a critical rate defects form which are coherently interconnected with the matrix and are distributed more or less periodically; the lattice parameter of the solid solution decreases somewhat which probably occurs owing to defects in the γ_2 phase. Due to these structural changes, the coercive force increases. Tempering at 560°C leads to a further change in the state of the solid solution and to a redistribution of the components between the matrix and the coherent defects. The obtained data indicate that the reversible changes in the saturation magnetization and the

S/126/62/014/003/016/022
E073/E420

On the relation between ...

coercive force of alnico are due to reversible changes in the state of the matrix and coherent defects corresponding to the equilibrium phases β_2 and β; the irreversible changes in the coercive force are due to irreversible growth of coherent defects. There are 1 figure and 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: July 11, 1962

Card 3/3

ACCESSION NR: AP4013090 S/0126/64/017/001/0031/0039

AUTHORS: Yermolenko, A. S.; Shur, Ya. S.

TITLE: Magnetic structural analysis of high coercivity Alnico alloy

SOURCE: Fizika metallov i metalloved., v. 17, no. 1, 1964, 31-39

TOPIC TAGS: Alnico alloy, magnetic structure, coercivity, saturation magnetisation, crystallographic anisotropy, uniaxial anisotropy, tempering, annealing, quenching, rotary magnetometer

ABSTRACT: The temperature dependence of saturation magnetisation, coercive force, and constants of crystallographic and induced anisotropy of Alnico alloy was investigated. The specimen was obtained by melting the alloy (24% Co, 14% Ni, 8% Al, 3% Cu, and the rest Fe) in a high-frequency furnace in vacuum. The saturation magnetisation was investigated by Sucksmith's method (W. Sucksmith. Proc. Roy. Soc. 1939, A170,551). The specimens were prepared in the form of parallelepipeds of dimensions 5 x 0.7 x 0.7 mm. The thermal treatment of the specimen was performed in an atmosphere of argon or under vacuum in a specially designed apparatus which enabled the quenching of the specimen in water, then chilling it at a desired rate. The relative error in the measurement of the saturation magnetisation did not

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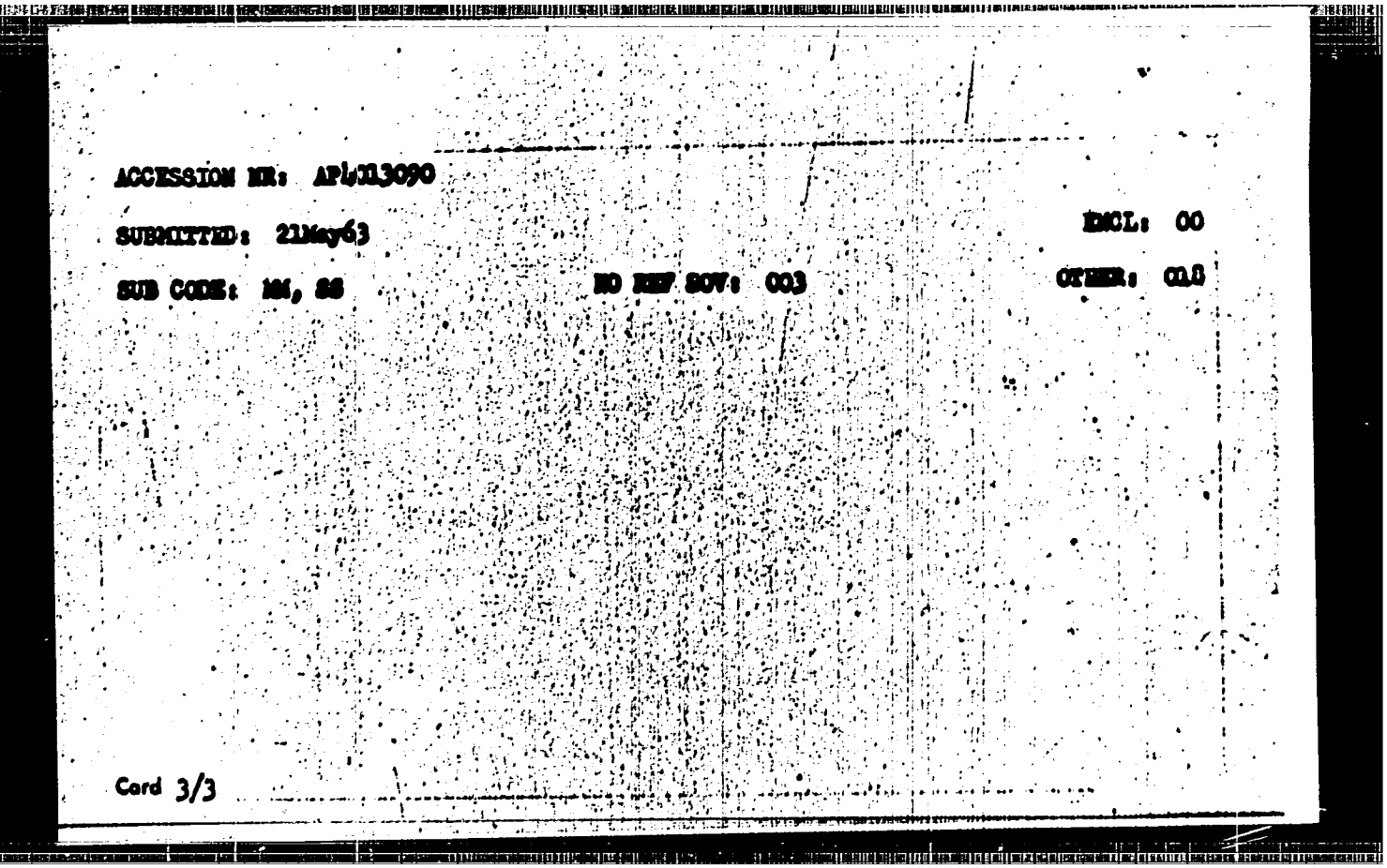
ACCESSION NR: AP4013090

exceed 1%. The temperature dependence of the constants of anisotropy and the coercive force was studied with the aid of a rotary magnetometer. For this experiment the specimen was prepared in the form of a disk 6 mm in diameter and 0.5 mm thick. The constant of anisotropy was obtained by a harmonic analysis of the torque curves. Ballistic methods were used for measuring small values of the coercive force and for studying its angular dependence. The effect of heating the specimen up to 600C and then cooling it was to increase the constant of anisotropy at room temperature. It was found that at high coercive states (final tempering at 560C) the alloy showed two phases sharply distinguished by their saturation magnetization, I_{s1} - about 1600 gauss and I_{s2} - about 100 gauss. The constant of uniaxial anisotropy could be computed from the formula $K_u = \frac{1}{2}(I_{s1} - I_{s2})^2 (N_b - N_a) \nu_1 \nu_2$, where N_a and N_b are magnetization factors and ν_1, ν_2 are relative phase volumes. The values computed from this and the experimental values agree. The nature of structural change and the mechanism of formation of highly coercive states are discussed. Orig. art. has: 7 figures and 3 formulas.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals, AN SSSR)

Card 2/3



ACCESSION NR: AP4013090

SUBMITTED: 21May63 ENCL: 00

SUB CODE: MM, SS NO REF SOV: 003 OTHER: 000

Card 3/3

EWT(m)/EWP(t)/ETI IJP(c) JD/HW

SOURCE CODE: UR/0048/66/030/006/1046/1049

AUTHOR: Yermolenko, A.S.

ORG: Institute of Metal Physics, Academy of Sciences, SSSR (Institut fiziki metallov Akademii nauk SSSR)

TITLE: Contribution to the theory of magnetic annealing of high-coercitivity alloys of the Ticonal type [Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July 1965 in Svordlovsk]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1046-1049

TOPIC TAGS: ferromagnetic material, iron base alloy, aluminum containing alloy, nickel containing alloy, cobalt containing alloy, titanium containing alloy, annealing, magnetic field, magnetic anisotropy

ABSTRACT: The author and collaborators (Fiz. metallov i metallovedeniye, 18, 540 (1964) have previously concluded that, contrary to the early opinion of L.Neel (Compt. rend., 225, 109 (1947)), it is not only the magnetostatic energy during the magnetic anneal that determines the orientation of the anisotropic hard magnetic inclusions in high-coercitivity alloys of the Alnico and Ticonal type, but that elastic energy also contributes to the shape anisotropy and the orientation of the inclusions. The effect of elasticity should be much greater in Ticonal than in Alnico, owing to the greater difference in Ticonal between the lattice parameters of the two phases. To explore

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L 08763-67
ACC NR: AP6029130

this conclusion the author has investigated the effects of different heat treatments in a magnetic field on the cubic and uniaxial anisotropies and the retentivity of Tigonal single crystals (34Co-14Ni-7Al-4Cu-5Ti-0.2S-35.8Fe) and has compared the results with the corresponding data on Alnico. Specimens quenched in the absence of a magnetic field had a small positive cubic anisotropy. When the specimens were annealed in a magnetic field parallel to a [101] axis they showed not only uniaxial anisotropy, but also a large negative cubic anisotropy. When the annealing field was inclined as much as 20° to the nearest [101] axis, the easy magnetization axis of the specimen was in the [010] direction, and was not inclined toward the direction of the annealing field, as in the case of Alnico. When the annealing field was applied in the direction of a diagonal axis ([011]) the specimen showed no uniaxial anisotropy, but had a large (negative) cubic anisotropy. It is concluded that in Ticonal, the effect of elasticity is predominant in determining the shape anisotropy and orientation of the inclusions. There is a footnote acknowledging that the crystals were grown under the direction of L.V.Smirnov. Orig. art. has: 2 tables.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 001 OTH REF: 008

Card 2/2 bc

YERMOLENKO, A.B.; MELKISHEVA, E.N.; SHUR, Ya.S.

Dependence of the effect of thermomagnetic treatment on the orientation of the magnetic field in single crystals of the alnico-type alloys. Fiz. met. i metalloved. 18 no.4:540-552 O '64. (MIRA 18:4)

1. Institut fiziki metallov AN SSSR.

BELOUSOV, A.D., doktor tekhn.nauk, prof.; YERMOLENKO, A.V., inzh.

Study of the thermal resistances of multilayer elements.
Trudy NIISF no.1:18-21 '62. (MIRA 15:11)
(Heat--Transmission)

GREKOV, I.A., gornyy inzh.; ANTIPOV, V.A., gornyy inzh.; YERMOLENKO, A. Ye., gornyy inzh.

Reorganization of mining operations in the mines representing capital assets in an important potentiality for the improvement of technical and economic indices. Ugol' 36 no.8:30-33 Ag '61. (MIRA 14:9)

1. Trest Shakhterskantratsit kombinata Stalinugol' (Donbass).
(Coal mines and mining)

ANTIPOV, V.A., inzh.; YERMOLENKO, A.Ye., inzh.; POGREBNOY, V.M., inzh.

Fire extinction at the Donets Basin mine "Anna." Bezop.truda v prom. 6 no.6:7-8 Je '62. (MIRA 15:11)

1. Shakhterskiy trest ugol'nykh predpriyatiy kombinata Rostovugol' Ministerstva ugol'noy promyshlennosti SSSR.
(Donets Basin--Mine fires)

IVANOV, S.T.; YERMOLENKO, E.A., elektromekhanik

Converter instead of a buzzer. Avtom., telem. i sviaz' 9 no.11:33-34 N '65. (MIRA 18:12)

1. Starshiy elektromekhanik Kotel'nikovskoy distantsii Privolzhskoy dorogi (for Ivanov).

YEMMOLENKO, G.N., ekonomist

Analyzing the factors of overhead cost reduction and the reduction of the cost of glass. Stek. i ker. 22 no.6:35-37 Je '65. (MIRA 18:6)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR.

YEFIMOLENKO, G.N., inzh.

Pay more attention to questions of economic analysis. Stek. i ker. 20 no.6:33-35 Je '63. (MIRA 16:6)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR.
(Glass manufacture--Accounting)

Yermolenko, I.

YERMOLENKO, I., inzh.

Standard plans for prefabricated one- and two-story apartment houses. Gor. i sel'. stroi. no.11:11-12 N '57. (MIRA 11:1)
(Architecture--Designs and plans)
(Apartment houses)

YERMOLENKO, I.

Hand-operated pneumatic lubricant grease pump. Avt. transp. 37 no.10:54 O '59. (MIRA 13:2)

1.Glavnyy mekhanik Krasnodarskogo avtotresta.
(Automobiles--Lubrication)

YERMOLENKO, I., inzh.; KOTSYUBA, M., inzh.

Modernization of the M-2407 machine tool for boring cylinders. Avt.transp. 4 no.8:49-50 Ag '62. (MIRA 16:4)
(Drilling and boring machinery—Technological innovations)

YERMOLENKO, I.; MAKAROV, G., inzh.-konstruktor

Operating stands for tire dismounting. Avt.transp. 40 no.2:20-22 F '62. (MIRA 15:2)

1. Krasnodarskoye upravleniye avtotransporta. 2. Glavnyy mekhanik Krasnodarskogo upravleniya avtotransporta (for Yermolenko).
(Motor vehicles--Tires)

YERMOLENKO, I., inzh.; KOTSYUBA, M., inzh.

Mechanized lubrication in automotive transportation units.
Avt. transp. 41 no.9:17-22 S '63. (MIRA 16:10)

1. Krasnodarskoye avtoupravleniye.

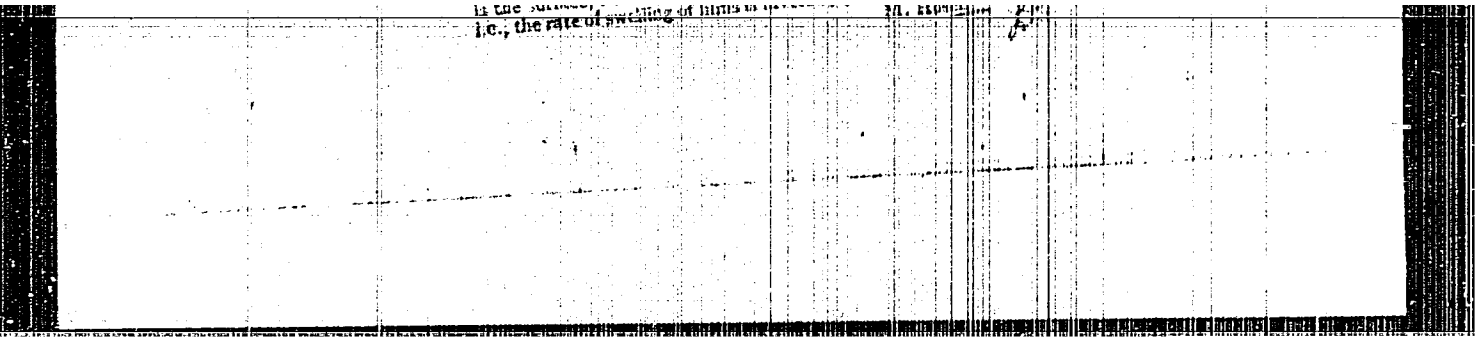
YERMOLENKO, I. N.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

New methods of determination of swelling of mycels. I. N. Ermolenko and M. I. Massal. Colloid J. (U.S.S.R.) 14, 421-2(1952)(Engl. translation).—See C.A. 47, 1467i.
H. L. H.

USSR

Equation for the kinetics of swelling. M. [illegible] and L. M. [illegible] *Referat. Zhur., Khim.* 1954, [illegible] 1954, No. 11, 41-[illegible] *Referat. Zhur., Khim.* 1954, No. 37526.—An equation is derived for the kinetics of swelling of rubber. In relation to the solvent, the rubber is considered as an osmotic cell with a semipermeable membrane formed by the interphase. The osmotic pressure caused by the kinetic energy of the free segments is counteracted by the straining of the chains and the rate of diffusion of liquid across the boundary is proportional to the difference between these forces and the surface of the sample. [illegible] this point of departure and disregarding [illegible], a relation is derived for isotropic swelling: [illegible] = (1/[illegible])log[illegible] [illegible], where $i = a/m$ is the ratio of the wt. of absorbed liquid a to the wt. of the sample m. On coordinates [illegible] ($i^{1/3}_0 - i$)] vs. t are obtained straight lines passing through the origin. This is confirmed by swelling rubber in [illegible] [illegible] solu. of m-dinitrobenzene. Tables which facilitate [illegible] are given. It is also shown [illegible]



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001962820003-0"

YERMOLENKO, I. N.; MAZEL', M. I.; ERMOLENKO, N. F.

Vulcanization

Role of a polar component of mixed media in the swelling of vulcanizates. Dokl. AN SSSR. 89, No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. UNCLASSIFIED.

YERMOLENKO, I. N.

YERMOLENKO, I. N. --"Spectral Chemical Investigation of Oxidation of Cellulose." *(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Belorussian State U imeni V. I. Lenin, Minsk, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Candidate in Chemical Sciences

PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Kinetics of the oxidation of cellulose by nitrogen dioxide. (MIRA 10:1)
Uch.zap.BGU no.24:138-148 '55.
(Cellulose) (Nitrogen dioxide)

YERMOLENKO, I. N.

USSR/Chemistry of High Molecular Substances. F

Abs Jour : Referat Zhurnal Khimiya, No 6, 1957, 19419.

Author : R.G. Zhbankov, I.N. Yermolenko.
Inst : Academy of Sciences of White-Russian SSR.
Title : Infrared Spectra of Cellulose Materials in Shape of Transparent Films Produced From Filaments Under High Pressure.

Orig Pub : Izv. AN BSSR. Ser. Fiz.-Tekhn. N., 1956, No 1, 15-24.

Abstract : The authors record the imperfrections of methods of the study of infrared spectra of cellulose materials, which methods are based on the application of immersion liquids and other substances, permitting to obtain transparent compounds, as well as the imperfections of the study of cellulose in its reclaimes form. The authors developed a method of preparing films of fibrous cellulose compounds by their compression under the pressure of up to 40,000 kg/cm. The study of spectra of such films showed that their

Card 1/2 -10-

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.

Oxidation of cellulose. Uch.zap. BGU no.29:36-59 '56.
(MIRA 11:11)

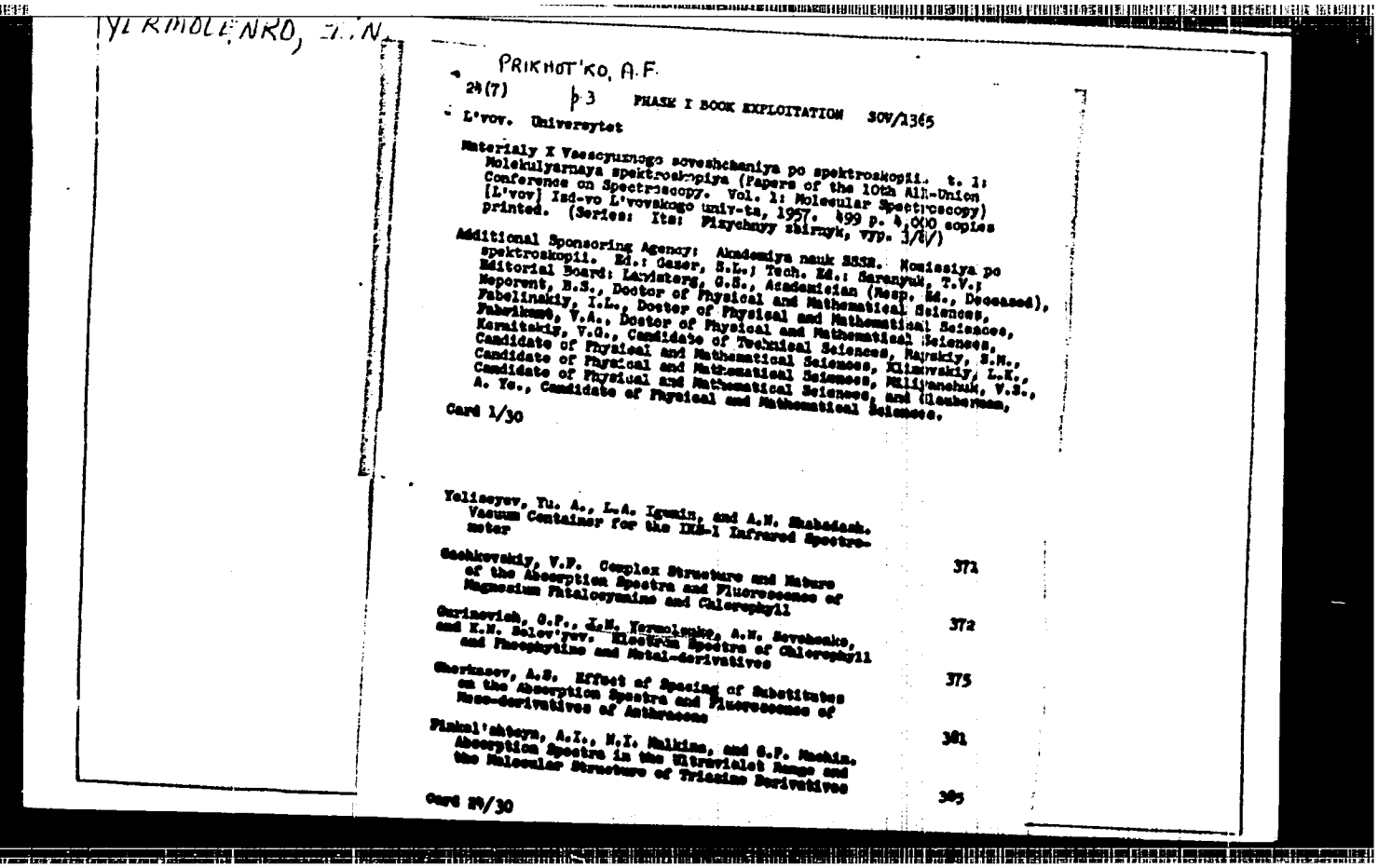
(Cellulose) (Oxidation)

PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Spectrum analysis of products formed during alkaline destruction of oxidized cellulose. Uch.zap. BGU no.29:60-71 '56.
(Cellulose--Spectra) (MIRA 11:11)

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.

Acid hydrolysis of oxidized cellulose. Uch.zap. BGU no.29: 72-86 '56. (MIRA 11:11)
(Cellulose) (Hydrolysis)



YERMOLENKO, Ye. N.

PRIKHOT'KO, A.F.

24(7) p 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya 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: Pisychnyy shornyk, vyp. 1/6/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Gaser, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Lavinterg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabelinskiy, V.A., Doctor of Physical and Mathematical Sciences, Kazmitskiy, V.G., Candidate of Technical Sciences, Marshak, S.M., Candidate of Physical and Mathematical Sciences, Marskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., A. Ye., Candidate of Physical and Mathematical Sciences, and Gluzberman,

Card 1/30

Yermolenko, I. N.

51-3-6/14

AUTHORS: Gurinovich, G. P., Yermolenko, I. N., Sevchenko, A. N. and Solov'yev, K. N.

TITLE: Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin. (Nekotoryye opticheskiye svoystva khlorofilla i metalloproizvodnykh feofitina.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.237-245. (USSR)

ABSTRACT: Absorption and polarized luminescence spectra of chlorophyll, chlorophyllide, pheophytin and metal derivatives of pheophytin were studied. Chlorophyll was obtained from leaves of nettle. Chlorophyllide was produced by fermentation of Heracleum leaves. Pheophytin was prepared by a method described earlier (Refs.4, 5). Metal derivatives of pheophytin were produced by adding to an alcohol solution of pheophytin dry salts of metals (mainly acetates). These solutions were kept at room temperature for 20 hours and then heated at 50°C for 2 hours. Spectra of polarization of luminescence of the solutions of chlorophyll, chlorophyllide, pheophytin, and absorption spectra of the same three substances are

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Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin.

given in Fig.2. Figs.3 and 4 show absorption spectra of the solutions of pheophytin, silver pheophytinate, zinc pheophytinate (all in Fig.3) and pheophytinates of copper and cadmium (Fig.4). Fig.5 gives the spectra of polarization of luminescence of the solutions of pheophytinates of cobalt, nickel and zinc, as well as absorption spectra of the solutions of the same three substances. A hypothetical energy level scheme for a chlorophyll molecule is given in Fig.6. The authors conclude that in the substances studied each absorption band has its own electron transitions. The fundamental bands of absorption and emission are of dipole nature. Both the system of electron levels and probabilities of transitions between them are quite different in chlorophyll from those in the remaining substances studied. In particular essential differences occur between absorption and polarization spectra of pheophytin and chlorophyll respectively. On introduction of metallic atoms into the

Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin.

pheophytin molecule its structural characteristics become similar to those of chlorophyll. This seems to indicate that the structures of molecules of metal derivatives of pheophytin and of chlorophyll are similar. Luminescence yield of chlorophyll (Figs.7, 8, 9) and its derivatives was found to depend on viscosity of the solvent. With the increase of viscosity the luminescence yield decreases. The authors thank Professor T. N. Godnev for his interest and advice. There are 9 figures, 2 tables and 17 references, 11 of which are Slavic.

SUBMITTED: January 3, 1957.

AVAILABLE: Library of Congress

Card 3/3

GURINOVICH, G.P.; YERMOLENKO, I.N.; SHVCHENKO, A.N.; SOLOV'YEV, K.N.

Electron spectra of chlorophyll and metal derivatives of pheophytin. Fiz. sbor. no.3:375-381 '57. (MIRA 11:8)

1. Institut fiziki i matematiki AN Belorusskoy SSR.
(Chlorophyll--Spectra) (Pheophytins--Spectra)

YARMOLENKO, I.M. [Armolenka, I.M.]; PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.]

Swelling of oxidized cellulose in water. Vestsi AN BSSR. Ser. fiz.-tekhn. nav. no.2:67-75 '58. (MIRA 11:10)
(Cellulose)

YERMOLENKO, I.N.; ZHBANKOV, R.G.

Studying the dyeing of oxidized cellulose by infrared spectroscopy. Inzh.-fiz.zhur. no.2:94-98 F '58. (MIRA 13:1)

1. Institut fiziki i matematiki AN BSSR, Belorusskiy gosudarstvennyy universitet, Minsk.
(Dyes and dyeing--Cellulose) (Spectrum, Infrared)

YERMOLENKO, I. N.

AUTHORS: Yermolenko, I. N., Zhbankov, R. G., Ivanov, V. I., Lenshina, N. Ya., Ivanova, V. S., 62-2-27/28

TITLE: The Investigation of Some Oxidation Reactions of Cellulose by the Method of Infrared Spectroscopy (Issledovaniye nekotorykh okislitel'nykh reaktsiy tsellyulozy metodom infrakrasnoy spektroskopii)

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 2, pp. 249-251 (USSR)

ABSTRACT: In the present paper the authors use the hitherto known methods and investigation results in the field of adsorption spectroscopy for the purpose of finding out the directions of reaction with subsequent formation of functional groups in the complicated structure of the respective oxidation products of cellulose. The modifications in the infrared spectra connected with the formation of carboxyl- and carboxyl-groups have hitherto been determined. The presence of carboxyl groups was judged according to the adsorption band at 5,57μ (oscillation C=O). This method is, however, not reliable. It is well-known that the adsorption band at 7μ depends exclusively on the velocity of de-

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formation of the CH_2-groups. Consequently the oxidation-transformation of the carbon atom can be estimated according to the modification of the intensity of adsorption (according to the wave length). Monocarboxyl cellulose contains so-called loss-carboxyls. The band at 11μ is not connected with carboxyl groups. The authors also investigated the oxidation of C_6 with the action of N_2O_4 in the elementary member of the macromolecule of cellulose in dependence on the general accumulation of carboxyls (see figure 4). The adsorption band at 11μ characterizes the occurrence of aldehyde-groups in dialdehyde cellulose in a bound form.There are 4 figures, and 1o references, 6 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry imeni N.D. Zelinskiy AN USSR (Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR)

SUBMITTED: March 7, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Cellulose-Oxidation reduction reactions 2. Infrared spectroscopy-Applications

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.; KAPUTSKIY, F.N.

Diagram of the oxidation of cellulose by nitrogen oxides.
Dokl. AN BSSR 2 no.11:461-464 D '58. (MIRA 12:8)

1.Predstavleno akademikom AN BSSR N.F. Yermolenko.
(CELLULOSE) (NITROGEN OXIDE) (OXIDATION)

5(4), 5(3) SOV/62-58-12-19/22

AUTHORS: Yermolenko, I. N., Zhbankov, R. G., Lenshina, N. Ya., Ivanova, V. S., Ivanov, V. I.

TITLE: Spectroscopic Investigation of the Consumption of Hydroxyl Groups of Cellulose on the Action of Nitrogen Dioxide (Spektroskopicheskoye issledovaniye raskhoda gidroksil'nykh grupp tsellyulozy pri deystvii na neye dvuokisi azota)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1495-1496 (USSR)

ABSTRACT: In this brief report the authors mention the transformations of hydroxyl groups of cellulose in their oxidation by means of nitrogen vapors. Cotton cellulose was oxidized under static conditions (Ref 5). The change of the hydroxyl groups during the course of reaction was determined according to the spectroscopic method in the infrared range. The absorption spectra were taken according to the earlier described method (Ref 6) by means of the infrared spectrograph IKS-11 with an NaCl prism. It was found that the reaction takes a quasihomogeneous course. In the first stage mainly those products are accumulated which form due to the oxidation of primary hydroxyl groups and

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Spectroscopic Investigation of the Consumption of Hydroxyl Groups of Cellulose on the Action of Nitrogen Dioxide

in the second stage those products that form due to the oxidation of primary and secondary hydroxyl groups. The results obtained agree with the other papers (Refs 1,4). There are 2 figures and 7 references, 6 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii imeni N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy Academy of Sciences, USSR) Institut fiziki i matematiki Akademii nauk BSSR (Institute of Physics and Mathematics, Academy of Sciences, Belorussian SSR)

SUBMITTED: June 2, 1958

AUTHORS: Yermolenko, I.N., Zhlankov, K.G. SOV-69-58-4-6/16

TITLE: Spectroscopic Study of the Sorption of Metallic Cations by Oxidized Cellulose (Spektroskopicheskoye issledovaniye sorbtsii kationov metallov okislennymi tsellyulozami)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 4, pp 429-435 (USSR)

ABSTRACT: Cellulose products contain variable quantities of cations which influence the viscosity, resistance, electric insulation properties, thermal stability, etc. of the material. The sorption of cations by cellulose is therefore of great importance. In the article, the interaction of oxidized cellulose with diluted salt solutions containing a mixture of cations is investigated, as well as the differences in the sorption on carboxyls located at various positions in the macromolecule chain. The sorption of cations under industrial conditions takes place usually from solutions formed at contact with details of the apparatus (Cu, Fe), from the water of the water main (Ca, Fe), etc. The content of carboxyl groups was determined by the calcium acetate method, of aldehydes by the iodometric method, and of carbonyl groups by the hydroxylamine method. The absorption spectra were taken by an infra-red recording spectrometer IKS-II. In Figure 1, the spectra of

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Spectroscopic Study of the Sorption of Metallic Cations by Oxidized Cellulose

a specimen of dicarboxyl cellulose (Curve 1) and of oxidized cellulose (Curve 2) treated with a 0.001 N solution of calcium acetate are represented. The sorption from this diluted solution is very active. For investigating the influence of the cation concentration sorption of uranyl cations from uranyl nitrate solutions of various concentrations by dicarboxyl cellulose was carried out. Figure 2 shows that considerable changes of the solution concentration affect only slightly the degree of sorption which indicates a high sorption energy. In the field of 7-8 μ in the cellulose spectrum, absorption lines are located at 1,360, 1,340, and 1,325 cm^{-1} corresponding to primary hydroxyls and decreasing in value during oxidation of the cellulose. In Figure 3, the absorption spectra of unoxidized cellulose are represented as well as those of monocarboxyl cellulose containing 12 % COOH, and of oxidized cellulose treated with Ag^{+}, Ca^{2+}, Pb^{2+}, and UO_2^{2+}. During cation sorption, a considerable increase of the absorption value in the given field of the spectrum is observed. The absorption spectrum for dialdehyde cellulose containing 12 % CHO is given in Figure 4. There are no considerable changes in this field

Spectroscopic Study of the Sorption of Metallic Cations by Oxidized Cellulose

of the spectrum. A comparison between the Figures 3 and 5 shows that for the sorption of lead and calcium on dicarboxyl cellulose greater differences are observed in the absorption field of the carboxylate groups (1,400-1,350 cm^{-1}) than in the sorption of these caticns on monocarboxyl cellulose. There are 6 diagrams and 30 references, 6 of which are Soviet, 17 English, 3 Finnish, 2 German, 1 French, and 1 Hungarian.

ASSOCIATIONS: Institut fiziki i matematiki AN BSSR (Institute of Physics and Mathematics of the Belorussian SSR Academy of Sciences) Belorusskiy gosudarstvennyy universitet (Belorussian State University)

SUBMITTED: December 20, 1957

1. Cellulose--Absorptive properties 2. Cellulose--Spectrographic analysis 3. Metal ions--Spectrographic analysis

AUTHORS: Yermolenko, I. N., Pavlyuchenko, M. M. 79-28-3-37/61

TITLE: The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products (Kinetika okisleniya tsellyulozy dvuokis'yu azota po dannym spektrov pogloshcheniya produktov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 722-728 (USSR)

ABSTRACT: Not regarding the many publications dealing with the oxidation of cellulose with NO_2 the kinetics of this reaction has, to a great extent, not been investigated sufficiently and the formed hypotheses of the mechanism of the processes have not been proved. The application of new methods, in particular of the spectral methods, enabled the authors to find a great number of new and very interesting facts connected with the mechanism of the reaction. By means of the spectral investigations of the organic nitrites, their solutions, their nitrogen oxides in free and adsorbed state, of nitric acid and nitrous acid, of the oxidized cellulose,

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The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products

previous to and after a vacuum treatment, as well as by heating and the effect of the solvents the authors showed that in the macromolecular reaction, products formed in the oxidation of cellulose with NO_2, besides the groups containing carboxy and carbonyl groups, a cellulose nitrite is formed in considerable quantities. In order to determine its content in the oxidation products the value of the optical density at λ 365 mμ was made use of; the carboxyl groups were determined according to the modification of the optical density at λ 250 mμ, the carbonyl groups at λ 280 mμ (Refs. 5, 19). Thus the amount of cellulose nitrite found by the authors already earlier in oxidation products of cellulose with NO_2 was determined. It was shown that with the duration of oxidation the amount of the nitrite passes through a maximum. A maximum accumulation velocity of the carboxyles corresponds to the maximum amount of nitrite in the oxidation product. The character of the reaction process depends on the temperature. A rise of temperature reduces the amount of the carboxyl groups as well as of the nitrite. This way the cellulose nitrite discovered by

The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products

79-28 3-37/61

the authors was recognized as an intermediary product in the oxidation process of cellulose with NO_2 .

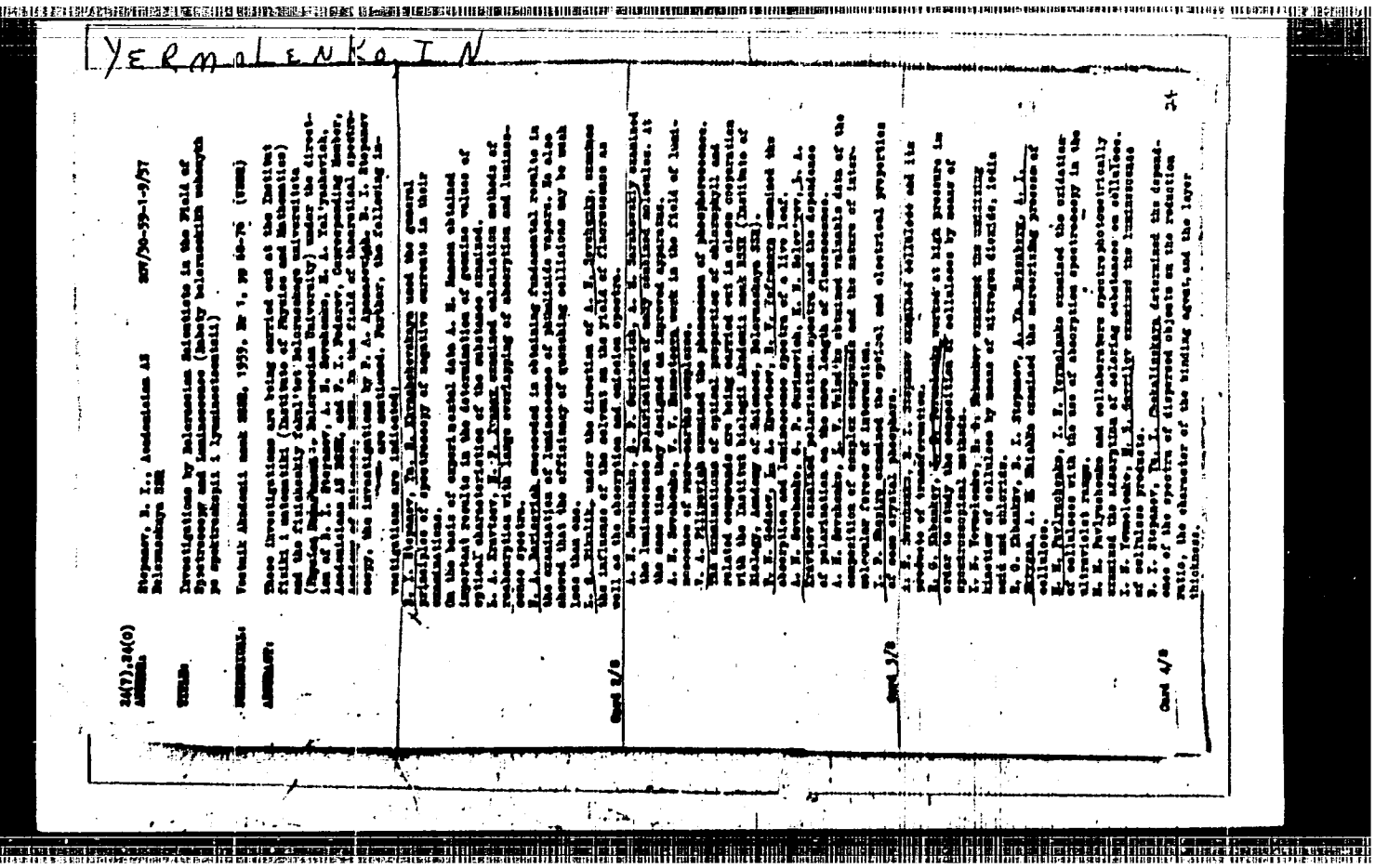
There are 6 figures and 3o references, 16 of which are Soviet.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet i Institut fiziki i matematiki Akademii nauk Belorusskoy SSR (Belorussian State University and Institute for Physics and Mathematics, AS Belorussian SSR)

SUBMITTED: January 14, 1956.

AVAILABLE:

Card 3/3



YERMALENKO, I. N.

24(7),24(0)
AUTHOR:

TITLE:

PERIODICAL:

ABSTRACT:

Card 1/3

Card 2/3

Card 3/3

Card 4/3

YERMOLENKO, Igor' Nikolayevich; PAVLYUCHENKO, M.M., red.; MARIKS, L., red.izd-va; VOLOKHANOVICH, I., tekhn.red.

[Spectroscopy in the chemistry of oxidized celluloses] Spektroskopiia v khimii okislennykh tsellyuloz. Minsk, Izd-vo Akad.nauk BSSR, 1959. 291 p. (MIRA 13:2)

1. Chlen-korrespondent AN BSSR (for Pavlyuchenko).
(Cellulose) (Spectrochemistry)

YERMOLENKO, I.N.; GUSEV, S.S.

Methods for the measurement of the infrared spectra of cellulose materials. Vysokom. soed. 1 no.3:466-473 Mr '59. (MIRA 12:10)

1. Institut fiziki i matematiki AN BSSR.
(Cellulose--Spectra)

YERMOLENKO, I.N.; GUSEV, S.S.

Quantitative determination of COOH and H_2O in cullulose by infrared spectroscopy. Vysokom.soed. 1 no.10:1462-1468 O '59. (MIRA 13:3)

1. Institut fiziki i matematiki AN BSSR.
(Cellulose--Spectra)

YERMOLENKO, I.N.; CHURKINA, L.A.

Acting of nitrogen oxides on cellulose dissolved in phosphoric acid in connection with the production of fire-resistant polymers. Dokl. AN BSSR 3 no.1:11-15 Ja '59. (MIRA 12:3)

1.Predstavlene akademikom AN BSSR N.F. Yermolenko.
(Cellulose) (Textile fibers, Synthetic)

YERMOLENKO, I.N.; ZHBANKOV, R.G.

Sorption of iron by cellulose materials. Dokl. AN BSSR 3 no.5:202-204 My '59. (MIRA 12:10)

1.Predstavlena akademikom AN BSSR B.I. Stepanovym.
(Iron) (Cellulose) (Sorption)

YERMOLAYEVA, Ye.Ye.

SAPOZHNIKOV, D.I.; YERMOLAYEVA, Ye.Ye.

Varvara Aleksandrovna Brilliant-Lerman; obituary. Bot.zhur. 39 no.6: 940-943 N-D '54. (MLRA 8:2)

1. Botanicheskiy institut im. V.L.Komarova Akademii nauk SSSR, Leningrad.
(Brilliant-Lerman, Varvara Aleksandrovna, 1888-1954)

YERMOLAYEVA, Ye. Ye.

Daily and seasonal course of photosynthesis and the accumulation of dry substance in potatoes, tomatoes and makhorka. Trudy Bot. inst. Ser.4 no.11:208-224 '56. (MLRA 9:9)
(Photosynthesis) (Potatoes) (Tomatoes) (Tobacco)

Ye Ya YERMOLAYEVA

USSR/Cultivated Plants - Potatoes. Vegetables. Melons. etc. M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15634

Author : Ye.Ya. Yermolayeva

Inst : The Botanical Institute of the Academy of Sciences USSR.

Title : The Effect of Large Phosphorous Dosage on Tomato Cold Resistance.
(Vliyaniye vysokikh doz fosfora na povysheniye kholodostoykosti tomatov).

Orig Pub : Dokl. AN SSSR, 1956, 111, No 5, 1130-1133

Abstract : At the Botanical Institute of the Academy of Sciences USSR the effect of phosphorous dosage was studied in the Gruntovyy Gribovskiy variety at lowered temperatures with an eye toward several physiological processes in the tomato. The experiment was set in soil cultures according to the schema: double rate of P, double rate

Card 1/2

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YERMOLAYEVA, Ye.Ya.

Effect of carbon dioxide concentration of photosynthesis in cultivated plants. Trudy Bot.inst.Ser. 4 no.13:46-63 '59. (MIRA 13:3)
(Photosynthesis) (Potatoes) (Tomatoes)

NIKOLAYEVA, Ye.Ya.; FILIPPOVICH, L.N.; SHILOVA, M.A.

Translocation of assimilates in Perilla at different stage of development[w.s.i.E.]. Trudy Bot. inst.Ser.4 no.14:73-88 '60.
(MIRA 14:3)

(Plants, Motion of fluids in)

KOZLOVA, N.A.; YERMOLYAYEVA, Ye.Ya.

Use of biologically active substances in plant protection.
Trudy Len. ob-va est. 74 no. 1:49-52 '63. (MIRA 17:9)

YERMOLAYEVA, Z.V.

EXCERPTA MEDICA Sec.4 Vol.10/3 Microbiology Mar 57

527. ERMOLYEVA Z. V., SUKHAREVA M.E., BLUMENTAL K. V. and ISKRZHITSKAYA A. I. *The use of biomycin and streptomycin with ekmolin in experimental infection and in clinical cases in the fight against diphtheria carriers (Russian text) PEDIATRIJA 1955, 5/6 (40-44)

Diphtheria bacilli showed in in-vitro tests their susceptibility toward biomycin and streptomycin with a lesser degree to ekmolin, and the highest susceptibility to the combination of biomycin, streptomycin and ekmolin. This would indicate a synergistic action of all 3 antibiotics. The therapeutic tests also showed the highest effect in the combination of all 3 antibiotics even when used in smaller dosage. Oral administration of biomycin with ekmolin caused in diphtheria carriers a rapid elimination of the bacilli from the throat. Anigstein - Galveston, Tex. (XX,4,6,7,17)

YERMOL'YEVA, Z.V.; VAYSBERG, G.Ye.; GIVENTAL', N.I.; LIKINA, T.N.

Ciine in association with other antibiotics in acute radiation sickness in mice. Antibiotiki 5 no.4:37-41 Jl-Ag '60. (MIRA 13:9)

1. Laboratoriya novykh antibiotikov pri kafedre mikrobiologii TSentral'nogo instituta usovershenstvovaniya vrachey.
(ANTIBIOTICS) (RADIATION SICKNESS)

YERMOL'YEVA, Z. V.; FURER, N. M.; VAYSBERG, G. Ye.; RAVICH, I. V.; NEMIROVSKAYA. B. V.

"New antibiotic preparations and other biologically active compounds of natural origin."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

Dept of Microbiology & Lab of New Antibiotics, Cent Inst for Post-Graduate Training, Moscow.

YERMOL'YEVA, Z. V.; ERAUDE, A. I.; VEDMINA, Ye. A.; FURER, N. M.; VAYSBERG, G. Ye.

"The problems of antibiotica, interferon, bacterial polysaccharides and the resistance of microorganisms."

report presented at 4th Intl Cong, Hungarian Soc of Microbiologists, Budapest, 30 Sep-3 Oct 64.

Inst of Advanced Medical Education, Moscow.

ROZHDESTVENSKAYA, V.I.; NEBYLITSYN, V.D.; BORISOVA, M.N.; YERMOLAYEVA-TOMINA, L.B.

Comparative study of various indexes of the strength of the nervous system in man. Vop. psikhol. 6 no.5:41-56 S-O '60. (MIRA 13:11)

1. Institut psikhologii APN RSFSR, Moskva.
(Nervous system)

YERMOLAYEVA-TOMINA, L.B.

Individual distinctions in the concentration of attention and the strength of the nervous system. Vop.psikhol. 6 no.2:84-95 Mr-Ap '60. (MIRA 13:7)

1. Institut psikhologii APN RSFSR, Moskva.
(Attention) (Nervous system)

YERMOL'CHENKO, YE. Z.

1. YERNOL'CHENKO, YE.Z.; RABOVSKIY, M.G.; POPOV, G.M., ENG.

2. USSR (600)

4. Steel - Heat Treatment

7. Gradual annealing of a steel strip without oxidizing its surface. Prom.energ. 9 no.10, 1952.

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

YEMOL'CHENKO, Ye. Z.

YEMOL'CHENKO, Ye. Z. and RABOVSKIY, M. G. Combined Hardening of Steel Tape without Surface Oxidation (Stupenchataya Zakalka Stal'noy Lenty bez Okisleniya Yeye Poverkhnosti), pp. 7-8 - 1952.

The use of a furnace with an inclined heat chamber is suggested in order to eliminate air circulation and oxydation of steel surfaces before hardening in a lead bath. This suggestion won one of the fourth prizes at the Seventh All-Union Contest on Power Economizing. (Drawings).

SO: PROMYSHLENNAYA ENERGETIKA, No. 10, Oct. 1952, Moscow (1502270)

RYBAKOVA, L.M.; YERMOL'CHIK, S.Z.

Porosity development in copper under the effect of cyclic heat treatment. Fiz. met. i metalloved. 9 no.5:733-740 My '60. (MIRA 14:4)

1. Institut mashinovedeniya AN SSSR.
(Copper—Metallography)
(Thermal stresses)

RYBAKOVA, L.M.; YERMOL'CHIK, S.Z.

Investigating the substructure od copper annealed at various temperatures. Fiz.met.i metalloved. 15 no.3:439-443 Mr '63. (MIRA 16:6)

(Copper--Metallography) (Annealing of metals)

ACC NR: AT7003566 (N) SOURCE CODE: UR/3240/66/000/001/0088/0096

AUTHORS: Kotlyar, I. V.; Yermol'chik, V. N.

ORG: Kaliningrad Technical Institute for the Fish Industry and Management (Kaliningradskiy tekhnicheskiy institut rybnoy promyshlennosti i khozyaystva)

TITLE: On intrinsic stability calculations for gas turbine installations

SOURCE: Kharkov. Politekhnicheskiy institut. Energeticheskoye mashinostroyeniye, no. 1, 1966. Teploobmen i gazodinamika (Heat transfer and gas dynamics), 88-96

TOPIC TAGS: gas turbine, gas compressor, combustion chamber, stability criterion, vibration

ABSTRACT: The intrinsic stability of a gas turbine installation which consists of three turbines, two compressors, and two combustion chambers is analyzed. Without considering a regenerator, the study leads to 28 linearized equations that describe the free vibrations of the gas turbine installation. The stability criterion is defined by the quantity Y_j, given by

$$Y_j = \frac{\Delta \Pi_j}{\Delta \omega_j} = -R_j \frac{d\omega_j}{d\omega_j dt},$$

where

$$R_j = \frac{1}{2\Pi_{j0}}.$$

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ACC NR: AT7003566

is the rotor time, I_j is the moment of inertia, and ΔM_j is the excess moment generated on the j-th shaft. Two extreme values are obtained for the stability criterion, one for each compressor shaft. These are:

$$1)\ Y_{1a} = A_1 \text{ at } R_2 \to \infty\ (\Delta n_2 \to 0)$$

$$2)\ Y_{1a} = A_1 - \frac{E_1 E_2}{A_2} \text{ at } R_2 \to 0\ (\Delta M_2 \to 0)$$

and

$$3)\ Y_{2a} = A_2 \text{ at } R_1 \to \infty\ (\Delta n_1 \to 0)$$

$$4)\ Y_{2a} = A_2 - \frac{E_1 E_2}{A_1} \text{ at } R_1 \to 0\ (\Delta M_1 \to 0)$$

A specific example is selected and the coefficients in the above 20 equations are evaluated. The results are then given in tabular form. Orig. art. has: 39 equations, 1 figure, and 1 table.

SUB CODE: 21, 20/ SUBM DATE: none/ ORIG REF: 001

Card 2/2

YERMOLENKA, N.F.

LEVITMAN, Kh.Ya.; YERMOLENKA, N.F.

Amperometric determination of copper in galvanic vats used for nickel, zinc, and cadmium plating. Vestsi AN BSSR, Ser. fiz.-tekh. nav. no.4: 133-137 '56. (MLRA 10:6)

(Copper) (Conductometric analysis)

YERMOLENKA, N.N.

TARASENKA, V.R., kandydat gistarychnykh navuk; ZHUNINA, L.A., kandydat tekhnichnykh navuk; YERMOLENKA, N.N., kandydat tekhnichnykh navuk.

("Glass manufacture in ancient Russia" by M.A. Bezborodov. Reviewed by V.R. Tarasenka, L.A. Zhunina, N.N. Ermolenka). Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.1:161-163 '57. (MLRA 10:6)
(Glass manufacture--History) (Bezborodov, M.A.)

YERMOLENKO, A.F.; NAUMOV, B.S.

Shortcomings in the organization of construction. Avtom., telem. i sviaz' 9 no.5:17 My '65. (MIRA 18:5)

1. Nachal'nik sluzhby signalizatsii i svyazi Yugo-Zapadnoy dorogi (for Yermolenko). 2. Nachal'nik tekhnicheskogo otdela sluzhby signalizatsii i svyazi Zakavkazskoy dorogi (for Naumov).

YERMOLENKO, A.F.

Participation of the students of a technical school in practical projects. Avtom.telem. i sviaz' 4 no.11:12 N '60. (MIRA 13:11)

1. Predsedatel' Gosudarstvennoy kvalifikatsionnoy komissii tekhnikuma imeni N.Ostrovskogo.
(Railroads--Employees--Study and teaching)
(Kiev--Technical education)

YERMOLENKO, A.F.

Mechanized devices for repairing communication lines. Avtom., telem. i sviaz' 5 no.10:23-24 O '61. (MIRA 14:9)

1. Nachal'nik sluzhby signalizatsii i svyazi Yugo-Zapadnoy dorogi.
(Telephone lines) (Telegraph lines)

YERMOLENKO, A.F.

The workers of the Zhmerinka railroad district work like all true Communists should. Avtom., telem.i sviaz' 6 no.4:20-22 Ap '62. (MIRA 15:4)

1. Nachal'nik sluzhby signalizatsii i svyazi Yugo-Zapadnoy dorogi.

(Railroads--Employees) (Railroads--Signaling)

YERMOLENKO, A.F.

Efficient work of volunteer design workers. Avtom., telem. i svias' 6 no.9:31-32 S '62. (MIRA 15:9)

1. Nachal'nik slushby signalizatsii i svyazi Yugo-Zapadnoy dorogi. (Railroads--Employees)

YERMOLENKO, A.I., professor

Large results of rectocolopexy according to the author's method. Khirurgiia 32 no.6:38-40 Je '56. (MLRA 9:10)

1. Iz gospital'noy khirurgicheskoy kliniki (dir. - zasluzhennyy deyatel' nauki prof. A.V.Smirnov) LSGMI.
(COLON, surg.
recto-colopexy, method)
(RECTUM, surg.
same)

YERMOLENKO, A.I., professor; KURBANGALEYEV, S.M., professor; EL'BERG, G.A., [redacted] meditsinskikh nauk

Seventieth birthday of Aleksandr Vasil'evich Smirnov. Vest.khir. 78 no.2:154-155 F '57. (MLRA 10:3)
(SMIRNOV, ALEKSANDR VAIL'YEVICH, 1886-)

YERMOLENKO, A.I., Prof., FARBERMAN, V.I., kand.med.nauk., SITKEVICH, V.Yu.

Current picture of the patients in a septic surgery department and polyclinic. Sov.med. 22 no.11:109-113 N'58 (MIRA 11:11)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. A.V. Smirnov) Leningradskogo sanitarno-gigiyenicheskogo instituta.
(HOSPITALS,
septic surg., department (Rus))
(OUTPATIENTS SERVICES,
surg. (Rus))

YERMOLENKO, A.I.

Late results of Ermolenko's rectocolopexy in rectal prolapse.
Trudy LSGMI 39:333-346 '58. (MIRA 12:8)

1. Kafedra gospital'noy khirurgii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav.kafedroy - z.d.n., prof.A.V.Smirnov).
(RECTUM, dis.
prolapse, rectocolopexy (Rus))

Yermolenko, A. P.

67630

SOV/19-59-15-82/312

AUTHORS: Perel'man, Ye.G., Ladygina, A.A., Yermolenko, A.P., [redacted], A.B., and Kreshitskiy, [redacted]

TITLE: High-Strength Steel for Welded Constructions

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 15, p 29 (USSR)

ABSTRACT: Class 18d, 1_10. Nr 121466 (597636/22 of 18 April 1958). A high-strength steel containing nickel, chrome, silicon, manganese, vanadium, and tungsten. To improve the strength of the steel, the silicon and chrome content is increased to 1.5% and the percentage of components is as follows: carbon - 0.16 to 0.32%, silicon - 0.80 to 1.50%, nickel - 0.80 to 1.50%, vanadium - 0.10 to 0.25%, manganese - 0.50 to 0.80%, chrome - 0.80 to 1.50%, and tungsten - 0.50 to 1.20%; the sulfur and phospher content - not higher than 0.025%.

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YERMOLENKO, A.P.; KOROLEVA, N.V.; KOROLEV, N.V.; LEONOV, Yu.V.

Quenching of hardened ferritic-austenitic chro[illegible]-nickel steel. Metalloved. i term. obr. met. no. 12:51-55 D '55. (MIRA 18:12)

SOV/133-59-1-20/23

AUTHORS: Yermolenko, A.P., Candidate of Technical Sciences and Konstantinov, N.I., Engineer

TITLE: The Use of Steel 38KhRA for the Manufacture of Large Parts (Primeneniye stali 38KhRA dlya izgotovleniya krupnogabaritnykh detaley)

PERIODICAL: Stal', 1959, Nr 1, pp 85 - 87 (USSR)

ABSTRACT: Structural steel 38KhA possesses a low hardenability due to which parts of a cross-sectional area above 150 mm, manufactured from this steel, have lower and unstable mechanical properties. As an increase in hardenability can be obtained by alloying with boron, an investigation was carried out as to the applicability of boron steel 38KhRA (GOST 4543-57) for manufacturing machine parts of a cross-sectional area up to 200 mm. The experimental 38Kh/A steel was produced in a 10-ton basic electric furnace, tapped into 2 ladles to one of which boron was added. Final deoxidation was done in the ladle according to two modifications: 1) aluminium (0.5 kg/t) was placed into the ladle before tapping, then when the ladle was 1/3 full, ferrotitanium (0.013%) and a 20% ferroboron was added (0.0035%); the metal retained in the ladle for 8 minutes and then teemed into ingots; 2) as above,

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but without the addition of ferrotitanium. Chemical compositions of the steels obtained, their hardenability (Figure 1) and mechanical properties (Table 1) are given. It was found that with the exception of hardenability mechanical properties of boron steels, deoxidised with and without titanium, did not differ so that in subsequent heats only deoxidation with aluminium was used. Further heats were done in a 35-ton basic open-hearth furnace. Deoxidation was effected by placing 300 kg of 45% ferrosilicon on the bottom of the ladle and when it was 1/3 full aluminium was added (0.5 kg/t) followed by ferroboron (0.0035%). Steel was retained in the ladle for 8 minutes and then teemed into 1.5-ton ingots. Ingots were rolled into billets for shafts for turbo-boring machines. The comparison of hardenability of the steel without and alloyed with boron is shown in Figure 2 and mechanical properties before and after hardening in Tables 2 and 3, respectively. On the basis of the results obtained, steel 38KhRA is recommended for the manufacture of shafts of turbo-boring machines as well as a replacement

The Use of Steel 38KhRA for the Manufacture of Large Parts

for steels 38KhA and 40Kh for manufacturing parts of a cross-sectional area of up to 200 mm, when due to the low hardenability of these steels their impact strength is below that required.
There are 2 figures and 3 tables.

YERMOLENKO, Mariya Nikitichna; TORKAYLO, I., red.

[Prospects for the specialization and distribution of cattle growing] Perspektivy spetsializatsii i razmeshchenila skotovodstva. Minsk, Urozhai, 1965. 79 p. (MIRA 19:1)

YEMOLENKO, A.S., aspirant

Morphology of the spinal ganglia in hypertension. Zdrav. Turk. 3 no.6:20-24 N-D '59. (MIRA 13:5)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. O.Ya. Reshabek) Turkmenskogo gosudarstvennogo meditsinskogo institut im. I.V. Stalina.

(HYPERTENSION) (NERVES, SPINAL)

YERMOLENKO, A.S., aspirant

Morphological condition of the nerve elements in various parts of the skin of persons dying from hypertension. Zdrav. Turk. 4 no. 3:20-26 My-Je '60. (MIRA 13:10)

1. Iz kafedry patanatomii (zav. - prof. O.Ya. Reshabek) Turkmenskogo gosudarstvennogo meditsinskogo instituta im. I.V. Stalina.
(SKIN—INNERVATION) (HYPERTENSION)

REZHABEK, O.Ya., prof.; YERMOLENKO, A.S., aspirant

Morphological changes in the radix posterior nervorum spinalium in persons dying from hypertension. Zdrav. Turk. 4 no.4:28-32 Jl-Ag '60. (MIRA 13:9)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. O.Ya.Rezhabek) Turkmenskogo gosudarstvennogo meditsinskogo instituta im. I.V.Stalina.
(NERVES, SPINAL) (HYPERTENSION)

YERMOLENKO, A. S. Cand Med Sci -- "Morphological state of the nervous elements of various parts of the skin of persons who have died of hypertension." Ashkhabad, 1961 (Stalinabad State Med Inst im Abuali Ibn-Sino). (KL, 4-61, 208)

S/048/61/025/012/011/022
B117/B104

AUTHORS: Yermolenko, A. S., and Shur, Ya. S.

TITLE: The nature of the coercive force in alloys of the "Alnico" type

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1479 - 1483

TEXT: Alloys of the system Fe-Ni-Al differ from other age-hardening alloys used for permanent magnets so far as their maximum coercive force is not due to quenching the material from the temperature of the single-phase state and subsequent tempering (treatment of type I) but rather to cooling at a certain critical rate and tempering (treatment of type II). The difference between the two types of treatment was studied in the present paper, basing on studies of magnetic properties of monocrystals of an alloy containing 24% Co, 14% Ni, 8% Al, 3% Cu, 51% Fe. The disk-shaped specimens were 0.35 mm thick and 6 mm in diameter. Their surfaces coincided with the crystal plane (100) with an error of up to 2°. The heat treatment was made in an argon atmosphere. A rotary magnetometer was

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The nature of the coercive...

used to measure the magnetic characteristics. The coercive force was measured at room temperature by the usual ballistic method. The variation in coercive force and torque amplitudes was measured at 625°C in a field of 16,600 oe, according to the tempering time. The coercive force of specimen no. 2 (treatment of type II) rapidly reaches its maximum value of 430 oe and remains practically constant beyond this value. After tempering specimen no. 1 (treatment of type I) for 60 hours, its coercive force reaches a value of 90 oe at 625°C which can, however, be increased by additional tempering at 700°C and subsequent annealing at 625°C. After a 54-hour tempering, both specimens exhibit identical torque amplitudes which even increase in no. 1 if the process is continued. In specimen no. 1, the torque amplitudes are negative in the entire field and slightly dependent on the field. In no. 2, the amplitudes are positive in fields of less than 8000 oe and negative in stronger fields. After a 60-hour tempering at 625°C the amplitudes are positive in the entire field. In the present case, the shape of the torque characteristics was related to the presence of two types of anisotropy in the specimen: (1) crystallographic magnetic anisotropy and (2) an anisotropy related to the form of

precipitates (anisotropy of the stray fields). During the decay the last-mentioned type plays an ever more important role: the characteristics are shifted from the negative to the positive range. After a 60-hour tempering at 625°C the torque characteristics for both specimens have practically identical amplitudes over a wide range of fields, whereas the coercive forces differ from each other by a factor of nearly 5. Investigation of the saturation magnetization I_s and of the coercive force in the temperature range, where these characteristics change reversibly, has shown that both specimens agree as to I_s and temperature dependence. This indicates that independent of the type of treatment, the phases resulting from decay are of identical or similar composition. Great differences in the relative amounts of the phases are also unlikely. After tempering the specimens for 60 hours, rotational hysteresis as a function of the strength of the external field exhibited the same character as ordinary hysteresis in an alternating magnetic field. The large differences in the coercive force of the specimens, produced by the two types of treatment, are attributed to a definite distribution of grains

The nature of the coercive...

according to their coercive force. The special advantage of the treatment of type II is that a structure with almost equal grain sizes can be obtained. The grain size corresponds to the coercive force. The authors thank L. V. Smirnov for the growing of monocrystals, and L. M. Magat for having determined their orientation. There are 5 figures and 9 references: 4 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Wohlfarth, E. P., Philos. Mag., Suppl., 8, 87 (1959); Clegg, A. G., McCaig, M., Proc. Phys. Soc. London, B, 70, 817 (1957); Nesbitt E. A., Williams H. J., Bozorth R. M., J. Appl. Phys., 25, 1014 (1954); Fisher J. S., Hollomon J. H., Turnbull D., J. Appl. Phys., 19, 775, (1948).

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

18.1142

41516
S/126/62/014/003/003/022
E021/E435

AUTHORS: Yermolenko, A.S., Shur, Ya.S.

TITLE: The mechanism of thermomagnetic treatments of high-coercive alloys of the alni and alnico types

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.3, 1962, 348-357

TEXT: The aim of the work was to investigate the influence of the initial structural state, temperature, time and other conditions during isothermal treatment in a magnetic field on the formation of uniaxial magnetic anisotropy of the alloys. Single crystals of alnico (14% Ni, 24% Co, 8% Al, 3% Cu, 51% Fe) and alni (26% Ni, 14% Al, 3% Cu, 57% Fe), prepared from a melt produced in a high frequency vacuum furnace, were used. After prolonged heating near the melting point, the bars contained coarse crystals. Single crystalline discs with diameter 5 to 6 mm and 0.4 to 0.5 mm thick were cut from the bars in the (100) and (110) planes. After various heat treatments (in an argon atmosphere) both with and without a magnetic field, values of the mechanical torque and the coercive force along and perpendicular to the

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direction of the magnetic field were determined at room temperature. The mechanical torque was measured in fields of 4700, 9200, 13700 and 19400 oersteds. Curves were obtained characterizing the total anisotropy of the crystals.
Results: the uniaxial anisotropy during thermomagnetic treatment of the alloys forms independently of the initial structural state at all temperatures below the Curie point of the strongly magnetic phase provided diffusion occurs during the process. During their process of growth, the shape anisotropy of the precipitates, forming during decomposition of Fe-Ni-Al alloys, increases; the cause being that this leads to a decrease in the magnetostatic energy and additionally it may also be due to the anisotropy of the energy of the surface tension between two phases. Thermomagnetic treatment of the alloys results in the orientation of the precipitates with their long axes along the direction of the magnetic field. This orientation may occur both during nucleus-formation of the precipitate and at later stages of decomposition of the solid solution. In the latter case reorganization of the structure of the alloys occurs both by changes in form of the

precipitate and by growth of some particles at the expense of others. There are 8 figures and 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: June 11, 1962

Card 3/3

S/126/62/014/003/016/022
E073/E420

AUTHORS: Shur, Ya.S., Magat, L.M., Yermolenko, A.S.

TITLE: On the relation between the crystal structure and the magnetic properties of alnico

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.3, 1962, 458-461

TEXT: So far, the nature of the structural transformations which lead to a reversible change in the magnetic properties of alnico has not been resolved and the authors considered it of interest to try to observe these transformations by accurate measurement of the lattice parameters and a determination of the average distance between defects from the positions of the satellites on the X-ray spectra. Specimens in the form of discs and plates cut from single crystals in the plane (100) of the alloy (24% Co, 14% Ni, 8% Al, 3% Cu, remainder Fe) were used in studying the temperature dependence of the coercive force and the saturation magnetization by means of a rotary magnetometer. It was found that these properties do not depend on the preceding heat treatment but are determined solely by the last tempering temperature, which

On the relation between ...

indicates that the magnetic properties of coherent defects and of the matrix change reversibly with changing temperature. Regardless of the previous heat treatment, tempering at 560°C led to the same value of the lattice parameters. Further heating to higher temperatures brings about an increase in the lattice parameter which approaches the value pertaining to a specimen quenched from 1250°C; tempering at 560 to 750°C leads relatively quickly to a certain state of the solid solution for each temperature regardless of the previous heat treatment. It is concluded that when cooling from 1250°C at a critical rate defects form which are coherently interconnected with the matrix and are distributed more or less periodically; the lattice parameter of the solid solution decreases somewhat which probably occurs owing to defects in the γ_2 phase. Due to these structural changes, the coercive force increases. Tempering at 560°C leads to a further change in the state of the solid solution and to a redistribution of the components between the matrix and the coherent defects. The obtained data indicate that the reversible changes in the saturation magnetization and the

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E073/E420

On the relation between ...

coercive force of alnico are due to reversible changes in the state of the matrix and coherent defects corresponding to the equilibrium phases β_2 and β; the irreversible changes in the coercive force are due to irreversible growth of coherent defects. There are 1 figure and 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: July 11, 1962

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ACCESSION NR: AP4013090 S/0126/64/017/001/0031/0039

AUTHORS: Yermolenko, A. S.; Shur, Ya. S.

TITLE: Magnetic structural analysis of high coercivity Alnico alloy

SOURCE: Fizika metallov i metalloved., v. 17, no. 1, 1964, 31-39

TOPIC TAGS: Alnico alloy, magnetic structure, coercivity, saturation magnetisation, crystallographic anisotropy, uniaxial anisotropy, tempering, annealing, quenching, rotary magnetometer

ABSTRACT: The temperature dependence of saturation magnetisation, coercive force, and constants of crystallographic and induced anisotropy of Alnico alloy was investigated. The specimen was obtained by melting the alloy (24% Co, 14% Ni, 8% Al, 3% Cu, and the rest Fe) in a high-frequency furnace in vacuum. The saturation magnetisation was investigated by Sucksmith's method (W. Sucksmith. Proc. Roy. Soc. 1939, A170,551). The specimens were prepared in the form of parallelepipeds of dimensions 5 x 0.7 x 0.7 mm. The thermal treatment of the specimen was performed in an atmosphere of argon or under vacuum in a specially designed apparatus which enabled the quenching of the specimen in water, then chilling it at a desired rate. The relative error in the measurement of the saturation magnetisation did not

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ACCESSION NR: AP4013090

exceed 1%. The temperature dependence of the constants of anisotropy and the coercive force was studied with the aid of a rotary magnetometer. For this experiment the specimen was prepared in the form of a disk 6 mm in diameter and 0.5 mm thick. The constant of anisotropy was obtained by a harmonic analysis of the torque curves. Ballistic methods were used for measuring small values of the coercive force and for studying its angular dependence. The effect of heating the specimen up to 600C and then cooling it was to increase the constant of anisotropy at room temperature. It was found that at high coercive states (final tempering at 560C) the alloy showed two phases sharply distinguished by their saturation magnetization, I_{s1} - about 1600 gauss and I_{s2} - about 100 gauss. The constant of uniaxial anisotropy could be computed from the formula $K_u = \frac{1}{2}(I_{s1} - I_{s2})^2 (N_b - N_a) v_1 v_2$, where N_a and N_b are magnetisation factors and v_1, v_2 are relative phase volumes. The values computed from this and the experimental values agree. The nature of structural change and the mechanism of formation of highly coercive states are discussed. Orig. art. has: 7 figures and 3 formulas.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals, AN SSSR)

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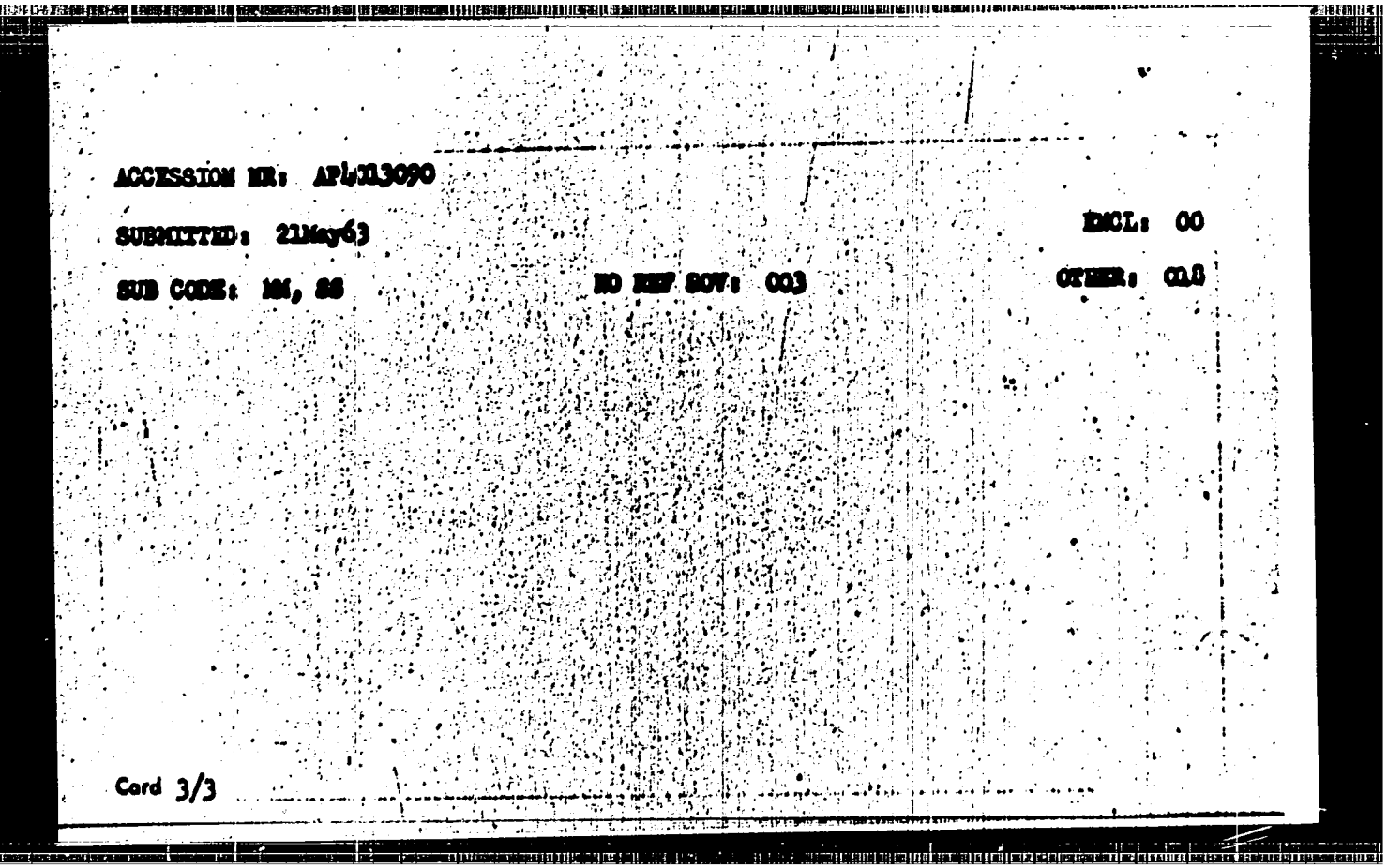

ACCESSION NR: AP4013090

SUBMITTED: 21May63 ENCL: 00

SUB CODE: MM, SS NO REF SOV: 003 OTHER: 000

Card 3/3

EWT(m)/EWP(t)/ETI IJP(c) JD/HW

SOURCE CODE: UR/0048/66/030/006/1046/1049

AUTHOR: Yermolenko, A.S.

ORG: Institute of Metal Physics, Academy of Sciences, SSSR (Institut fiziki metallov Akademii nauk SSSR)

TITLE: Contribution to the theory of magnetic annealing of high-coercitivity alloys of the Ticonal type [Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July 1965 in Svordlovsk]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1046-1049

TOPIC TAGS: ferromagnetic material, iron base alloy, aluminum containing alloy, nickel containing alloy, cobalt containing alloy, titanium containing alloy, annealing, magnetic field, magnetic anisotropy

ABSTRACT: The author and collaborators (Fiz. metallov i metallovedeniye, 18, 540 (1964) have previously concluded that, contrary to the early opinion of L.Neel (Compt. rend., 225, 109 (1947)), it is not only the magnetostatic energy during the magnetic anneal that determines the orientation of the anisotropic hard magnetic inclusions in high-coercitivity alloys of the Alnico and Ticonal type, but that elastic energy also contributes to the shape anisotropy and the orientation of the inclusions. The effect of elasticity should be much greater in Ticonal than in Alnico, owing to the greater difference in Ticonal between the lattice parameters of the two phases. To explore

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L 08763-67
ACC NR: AP6029130

this conclusion the author has investigated the effects of different heat treatments in a magnetic field on the cubic and uniaxial anisotropies and the retentivity of Tigonal single crystals (34Co-14Ni-7Al-4Cu-5Ti-0.2S-35.8Fe) and has compared the results with the corresponding data on Alnico. Specimens quenched in the absence of a magnetic field had a small positive cubic anisotropy. When the specimens were annealed in a magnetic field parallel to a [101] axis they showed not only uniaxial anisotropy, but also a large negative cubic anisotropy. When the annealing field was inclined as much as 20° to the nearest [101] axis, the easy magnetization axis of the specimen was in the [010] direction, and was not inclined toward the direction of the annealing field, as in the case of Alnico. When the annealing field was applied in the direction of a diagonal axis ([011]) the specimen showed no uniaxial anisotropy, but had a large (negative) cubic anisotropy. It is concluded that in Ticonal, the effect of elasticity is predominant in determining the shape anisotropy and orientation of the inclusions. There is a footnote acknowledging that the crystals were grown under the direction of L.V.Smirnov. Orig. art. has: 2 tables.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 001 OTH REF: 008

Card 2/2 bc

YERMOLENKO, A.B.; MELKISHEVA, E.N.; SHUR, Ya.S.

Dependence of the effect of thermomagnetic treatment on the orientation of the magnetic field in single crystals of the alnico-type alloys. Fiz. met. i metalloved. 18 no.4:540-552 O '64. (MIRA 18:4)

1. Institut fiziki metallov AN SSSR.

BELOUSOV, A.D., doktor tekhn.nauk, prof.; YERMOLENKO, A.V., inzh.

Study of the thermal resistances of multilayer elements.
Trudy NIISF no.1:18-21 '62. (MIRA 15:11)
(Heat--Transmission)

GREKOV, I.A., gornyy inzh.; ANTIPOV, V.A., gornyy inzh.; YERMOLENKO, A. Ye., gornyy inzh.

Reorganization of mining operations in the mines representing capital assets in an important potentiality for the improvement of technical and economic indices. Ugol' 36 no.8:30-33 Ag '61. (MIRA 14:9)

1. Trest Shakhterskantratsit kombinata Stalinugol' (Donbass).
(Coal mines and mining)

ANTIPOV, V.A., inzh.; YERMOLENKO, A.Ye., inzh.; POGREBNOY, V.M., inzh.

Fire extinction at the Donets Basin mine "Anna." Bezop.truda v prom. 6 no.6:7-8 Je '62. (MIRA 15:11)

1. Shakhterskiy trest ugol'nykh predpriyatiy kombinata Rostovugol' Ministerstva ugol'noy promyshlennosti SSSR.
(Donets Basin--Mine fires)

IVANOV, S.T.; YERMOLENKO, E.A., elektromekhanik

Converter instead of a buzzer. Avtom., telem. i sviaz' 9 no.11:33-34 N '65. (MIRA 18:12)

1. Starshiy elektromekhanik Kotel'nikovskoy distantsii Privolzhskoy dorogi (for Ivanov).

YEMMOLENKO, G.N., ekonomist

Analyzing the factors of overhead cost reduction and the reduction of the cost of glass. Stek. i ker. 22 no.6:35-37 Je '65. (MIRA 18:6)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR.

YEMOLENKO, G.N., inzh.

Pay more attention to questions of economic analysis. Stek. i ker. 20 no.6:33-35 Je '63. (MIRA 16:6)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR.
(Glass manufacture--Accounting)

Yermolenko, I.

YERMOLENKO, I., inzh.

Standard plans for prefabricated one- and two-story apartment houses. Gor. i sel'. stroi. no.11:11-12 N '57. (MIRA 11:1)
(Architecture--Designs and plans)
(Apartment houses)

YERMOLENKO, I.

Hand-operated pneumatic lubricant grease pump. Avt. transp. 37 no.10:54 O '59. (MIRA 13:2)

1.Glavnyy mekhanik Krasnodarskogo avtotresta.
(Automobiles--Lubrication)

YERMOLENKO, I., inzh.; KOTSYUBA, M., inzh.

Modernization of the M-2407 machine tool for boring cylinders. Avt.transp. 4 no.8:49-50 Ag '62. (MIRA 16:4)
(Drilling and boring machinery—Technological innovations)

YERMOLENKO, I.; MAKAROV, G., inzh.-konstruktor

Operating stands for tire dismounting. Avt.transp. 40 no.2:20-22 F '62. (MIRA 15:2)

1. Krasnodarskoye upravleniye avtotransporta. 2. Glavnyy mekhanik Krasnodarskogo upravleniya avtotransporta (for Yermolenko). (Motor vehicles--Tires)

YERMOLENKO, I., inzh.; KOTSYUBA, M., inzh.

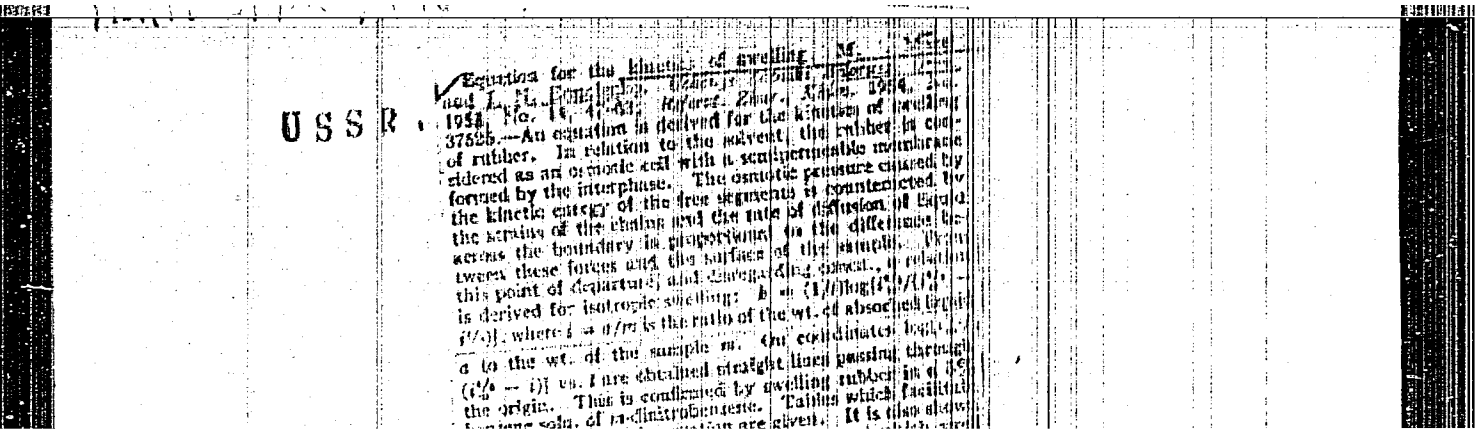
Mechanized lubrication in automotive transportation units.
Avt. transp. 41 no.9:17-22 S '63. (MIRA 16:10)

1. Krasnodarskoye avtoupravleniye.

YERMOLENKO, I. N.

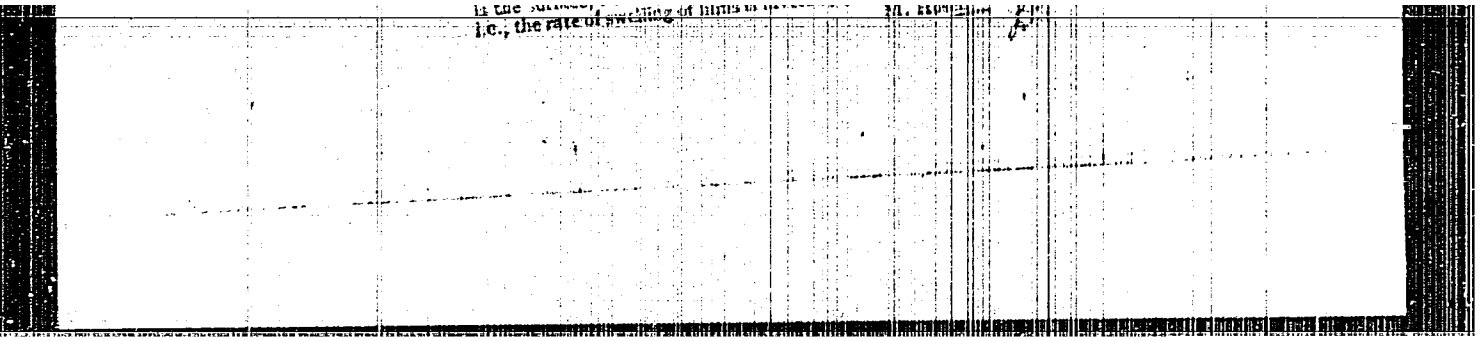
Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

New methods of determination of swelling of mycels. I. N. Ermolenko and M. I. Massal. Colloid J. (U.S.S.R.) 14, 421-2(1952)(Engl. translation).—See C.A. 47, 1467i.
H. L. H.



USSR

Equation for the kinetics of swelling [illegible]
and L. G. Feng [illegible] Zhur. Fiz. Khim., 1954, 28, No. 10, 1747-53; Referat. Zhur. Khim., 1954, No. 19, Abstr. No. 37526.—An equation is derived for the kinetics of swelling of rubber. In relation to the solvent, the rubber is considered as an osmotic cell with a semipermeable membrane formed by the interphase. The osmotic pressure caused by the kinetic energy of the free segments is counteracted by the strain of the chains and the rate of diffusion of liquid across the boundary is proportional to the difference between these forces and the surface of the sample. From this point of departure and [illegible] is derived for isotropic swelling: $k = (1/t)\log[f^0/(f^0 - f)]$, where $f = v/r$ is the ratio of the wt. of absorbed liquid to the wt. of the sample, v, the coordinates $\log[f^0/(f^0 - f)]$ vs. t are obtained straight lines passing through the origin. This is confirmed by swelling rubber in [illegible] Tables which facilitate [illegible] soln. of m-dinitrobenzene. [illegible] are given. It is also shown



APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001962820003-0"

YERMOLENKO, I. N.; MAZEL', M. I.; ERMOLENKO, N. F.

Vulcanization

Role of a polar component of mixed media in the swelling of vulcanizates. Dokl. AN SSSR. 89, No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. UNCLASSIFIED.

YERMOLENKO, I. N.

YERMOLENKO, I. N. --"Spectral Chemical Investigation of Oxidation of Cellulose." *(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Belorussian State U imeni V. I. Lenin, Minsk, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Candidate in Chemical Sciences

PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Kinetics of the oxidation of cellulose by nitrogen dioxide. (MIRA 10:1)
Uch.zap.BGU no.24:138-148 '55.
(Cellulose) (Nitrogen dioxide)

YERMOLENKO, I. N.

USSR/Chemistry of High Molecular Substances. F

Abs Jour : Referat Zhurnal Khimiya, No 6, 1957, 19419.

Author : R.G. Zhbankov, I.N. Yermolenko.
Inst : Academy of Sciences of White-Russian SSR.
Title : Infrared Spectra of Cellulose Materials in Shape of Transparent Films Produced From Filaments Under High Pressure.

Orig Pub : Izv. AN BSSR. Ser. Fiz.-Tekhn. N., 1956, No 1, 15-24.

Abstract : The authors record the imperfrections of methods of the study of infrared spectra of cellulose materials, which methods are based on the application of immersion liquids and other substances, permitting to obtain transparent compounds, as well as the imperfections of the study of cellulose in its reclaimes form. The authors developed a method of preparing films of fibrous cellulose compounds by their compression under the pressure of up to 40,000 kg/cm. The study of spectra of such films showed that their

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YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.

Oxidation of cellulose. Uch.zap. BGU no.29:36-59 '56.
(MIRA 11:11)

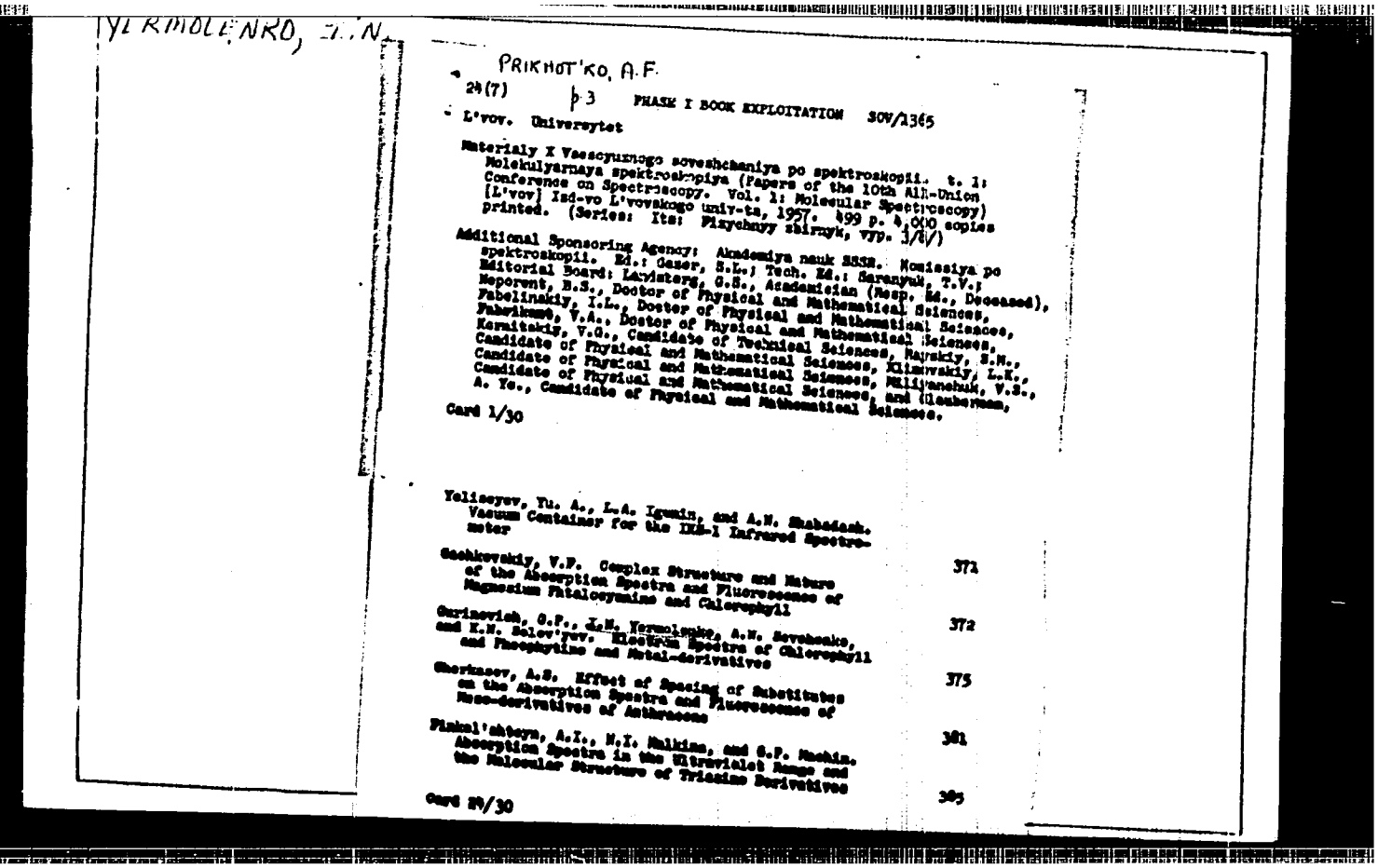
(Cellulose) (Oxidation)

PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Spectrum analysis of products formed during alkaline destruction of oxidized cellulose. Uch.zap. BGU no.29:60-71 '56.
(Cellulose--Spectra) (MIRA 11:11)

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.

Acid hydrolysis of oxidized cellulose. Uch.zap. BGU no.29: 72-86 '56. (MIRA 11:11)
(Cellulose) (Hydrolysis)



YERMOLENKO, Ye. N.

PRIKHOT'KO, A.F.

24(7) p 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya 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: Pisychnyy shornyk, vyp. 1/6/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Gaser, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Lavinterg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabelinskiy, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Marshak, S.M., Candidate of Physical and Mathematical Sciences, Nazarskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., A. Ye., Candidate of Physical and Mathematical Sciences, and Glauberman,

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Yermolenko, I. N.

51-3-6/14

AUTHORS: Gurinovich, G. P., Yermolenko, I. N., Sevchenko, A. N. and Solov'yev, K. N.

TITLE: Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin. (Nekotoryye opticheskiye svoystva khlorofilla i metalloproizvodnykh feofitina.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.237-245. (USSR)

ABSTRACT: Absorption and polarized luminescence spectra of chlorophyll, chlorophyllide, pheophytin and metal derivatives of pheophytin were studied. Chlorophyll was obtained from leaves of nettle. Chlorophyllide was produced by fermentation of Heracleum leaves. Pheophytin was prepared by a method described earlier (Refs.4, 5). Metal derivatives of pheophytin were produced by adding to an alcohol solution of pheophytin dry salts of metals (mainly acetates). These solutions were kept at room temperature for 20 hours and then heated at 50°C for 2 hours. Spectra of polarization of luminescence of the solutions of chlorophyll, chlorophyllide, pheophytin, and absorption spectra of the same three substances are

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Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin.

given in Fig.2. Figs.3 and 4 show absorption spectra of the solutions of pheophytin, silver pheophytinate, zinc pheophytinate (all in Fig.3) and pheophytinates of copper and cadmium (Fig.4). Fig.5 gives the spectra of polarization of luminescence of the solutions of pheophytinates of cobalt, nickel and zinc, as well as absorption spectra of the solutions of the same three substances. A hypothetical energy level scheme for a chlorophyll molecule is given in Fig.6. The authors conclude that in the substances studied each absorption band has its own electron transitions. The fundamental bands of absorption and emission are of dipole nature. Both the system of electron levels and probabilities of transitions between them are quite different in chlorophyll from those in the remaining substances studied. In particular essential differences occur between absorption and polarization spectra of pheophytin and chlorophyll respectively. On introduction of metallic atoms into the

Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin.

pheophytin molecule its structural characteristics become similar to those of chlorophyll. This seems to indicate that the structures of molecules of metal derivatives of pheophytin and of chlorophyll are similar. Luminescence yield of chlorophyll (Figs.7, 8, 9) and its derivatives was found to depend on viscosity of the solvent. With the increase of viscosity the luminescence yield decreases. The authors thank Professor T. N. Godnev for his interest and advice. There are 9 figures, 2 tables and 17 references, 11 of which are Slavic.

SUBMITTED: January 3, 1957.

AVAILABLE: Library of Congress

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GURINOVICH, G.P.; YERMOLENKO, I.N.; SHVCHENKO, A.N.; SOLOV'YEV, K.N.

Electron spectra of chlorophyll and metal derivatives of pheophytin. Fiz. sbor. no.3:375-381 '57. (MIRA 11:8)

1. Institut fiziki i matematiki AN Belorusskoy SSR.
(Chlorophyll--Spectra) (Pheophytins--Spectra)

YARMOLENKO, I.M. [Armolenka, I.M.]; PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.]

Swelling of oxidized cellulose in water. Vestsi AN BSSR. Ser. fiz.-tekhn. nav. No.2:67-75 '58. (MIRA 11:10)
(Cellulose)

YERMOLENKO, I.N.; ZHBANKOV, R.G.

Studying the dyeing of oxidized cellulose by infrared spectroscopy. Inzh.-fiz.zhur. no.2:94-98 F '58. (MIRA 13:1)

1. Institut fiziki i matematiki AN BSSR, Belorusskiy gosudarstvennyy universitet, Minsk.
(Dyes and dyeing--Cellulose) (Spectrum, Infrared)

YERMOLENKO, I. N.

AUTHORS: Yermolenko, I. N., Zhbankov, R. G., Ivanov, V. I., Lenshina, N. Ya., Ivanova, V. S., 62-2-27/28

TITLE: The Investigation of Some Oxidation Reactions of Cellulose by the Method of Infrared Spectroscopy (Issledovaniye nekotorykh okislitel'nykh reaktsiy tsellyulozy metodom infrakrasnoy spektroskopii)

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 2, pp. 249-251 (USSR)

ABSTRACT: In the present paper the authors use the hitherto known methods and investigation results in the field of adsorption spectroscopy for the purpose of finding out the directions of reaction with subsequent formation of functional groups in the complicated structure of the respective oxidation products of cellulose. The modifications in the infrared spectra connected with the formation of carboxyl- and carboxyl-groups have hitherto been determined. The presence of carboxyl groups was judged according to the adsorption band at 5,57μ (oscillation C=O). This method is, however, not reliable. It is well-known that the adsorption band at 7μ depends exclusively on the velocity of de-

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formation of the CH_2-groups. Consequently the oxidation-transformation of the carbon atom can be estimated according to the modification of the intensity of adsorption (according to the wave length). Monocarboxyl cellulose contains so-called loss-carboxyls. The band at 11μ is not connected with carboxyl groups. The authors also investigated the oxidation of C_6 with the action of N_2O_4 in the elementary member of the macromolecule of cellulose in dependence on the general accumulation of carboxyls (see figure 4). The adsorption band at 11μ characterizes the occurrence of aldehyde-groups in dialdehyde cellulose in a bound form.There are 4 figures, and 1o references, 6 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry imeni N.D. Zelinskiy AN USSR (Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR)

SUBMITTED: March 7, 1957

AVAILABLE: Library of Congress

Card 2/2

1. Cellulose-Oxidation reduction reactions 2. Infrared spectroscopy-Applications

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.; KAPUTSKIY, F.N.

Diagram of the oxidation of cellulose by nitrogen oxides.
Dokl. AN BSSR 2 no.11:461-464 D '58. (MIRA 12:8)

1.Predstavleno akademikom AN BSSR N.F. Yermolenko.
(CELLULOSE) (NITROGEN OXIDE) (OXIDATION)

5(4), 5(3) SOV/62-58-12-19/22

AUTHORS: Yermolenko, I. N., Zhbankov, R. G., Lenshina, N. Ya., Ivanova, V. S., Ivanov, V. I.

TITLE: Spectroscopic Investigation of the Consumption of Hydroxyl Groups of Cellulose on the Action of Nitrogen Dioxide (Spektroskopicheskoye issledovaniye raskhoda gidroksil'nykh grupp tsellyulozy pri deystvii na neye dvuokisi azota)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1495-1496 (USSR)

ABSTRACT: In this brief report the authors mention the transformations of hydroxyl groups of cellulose in their oxidation by means of nitrogen vapors. Cotton cellulose was oxidized under static conditions (Ref 5). The change of the hydroxyl groups during the course of reaction was determined according to the spectroscopic method in the infrared range. The absorption spectra were taken according to the earlier described method (Ref 6) by means of the infrared spectrograph IKS-11 with an NaCl prism. It was found that the reaction takes a quasihomogeneous course. In the first stage mainly those products are accumulated which form due to the oxidation of primary hydroxyl groups and

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Spectroscopic Investigation of the Consumption of Hydroxyl Groups of Cellulose on the Action of Nitrogen Dioxide

in the second stage those products that form due to the oxidation of primary and secondary hydroxyl groups. The results obtained agree with the other papers (Refs 1,4). There are 2 figures and 7 references, 6 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii imeni N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy Academy of Sciences, USSR) Institut fiziki i matematiki Akademii nauk BSSR (Institute of Physics and Mathematics, Academy of Sciences, Belorussian SSR)

SUBMITTED: June 2, 1958

AUTHORS: Yermolenko, I.N., Zhlankov, K.G. SOV-69-58-4-6/16

TITLE: Spectroscopic Study of the Sorption of Metallic Cations by Oxidized Cellulose (Spektroskopicheskoye issledovaniye sorbtsii kationov metallov okislennymi tsellyulozami)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 4, pp 429-435 (USSR)

ABSTRACT: Cellulose products contain variable quantities of cations which influence the viscosity, resistance, electric insulation properties, thermal stability, etc. of the material. The sorption of cations by cellulose is therefore of great importance. In the article, the interaction of oxidized cellulose with diluted salt solutions containing a mixture of cations is investigated, as well as the differences in the sorption on carboxyls located at various positions in the macromolecule chain. The sorption of cations under industrial conditions takes place usually from solutions formed at contact with details of the apparatus (Cu, Fe), from the water of the water main (Ca, Fe), etc. The content of carboxyl groups was determined by the calcium acetate method, of aldehydes by the iodometric method, and of carbonyl groups by the hydroxylamine method. The absorption spectra were taken by an infra-red recording spectrometer IKS-II. In Figure 1, the spectra of

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a specimen of dicarboxyl cellulose (Curve 1) and of oxidized cellulose (Curve 2) treated with a 0.001 N solution of calcium acetate are represented. The sorption from this diluted solution is very active. For investigating the influence of the cation concentration sorption of uranyl cations from uranyl nitrate solutions of various concentrations by dicarboxyl cellulose was carried out. Figure 2 shows that considerable changes of the solution concentration affect only slightly the degree of sorption which indicates a high sorption energy. In the field of 7-8 μ in the cellulose spectrum, absorption lines are located at 1,360, 1,340, and 1,325 cm^{-1} corresponding to primary hydroxyls and decreasing in value during oxidation of the cellulose. In Figure 3, the absorption spectra of unoxidized cellulose are represented as well as those of monocarboxyl cellulose containing 12 % COOH, and of oxidized cellulose treated with Ag^{+}, Ca^{2+}, Pb^{2+}, and UO_2^{2+}. During cation sorption, a considerable increase of the absorption value in the given field of the spectrum is observed. The absorption spectrum for dialdehyde cellulose containing 12 % CHO is given in Figure 4. There are no considerable changes in this field

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of the spectrum. A comparison between the Figures 3 and 5 shows that for the sorption of lead and calcium on dicarboxyl cellulose greater differences are observed in the absorption field of the carboxylate groups (1,400-1,350 cm^{-1}) than in the sorption of these caticns on monocarboxyl cellulose. There are 6 diagrams and 30 references, 6 of which are Soviet, 17 English, 3 Finnish, 2 German, 1 French, and 1 Hungarian.

ASSOCIATIONS: Institut fiziki i matematiki AN BSSR (Institute of Physics and Mathematics of the Belorussian SSR Academy of Sciences) Belorusskiy gosudarstvennyy universitet (Belorussian State University)

SUBMITTED: December 20, 1957

1. Cellulose--Absorptive properties 2. Cellulose--Spectrographic analysis 3. Metal ions--Spectrographic analysis

AUTHORS: Yermolenko, I. N., Pavlyuchenko, M. M. 79-28-3-37/61

TITLE: The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products (Kinetika okisleniya tsellyulozy dvuokis'yu azota po dannym spektrov pogloshcheniya produktov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 722-728 (USSR)

ABSTRACT: Not regarding the many publications dealing with the oxidation of cellulose with NO_2 the kinetics of this reaction has, to a great extent, not been investigated sufficiently and the formed hypotheses of the mechanism of the processes have not been proved. The application of new methods, in particular of the spectral methods, enabled the authors to find a great number of new and very interesting facts connected with the mechanism of the reaction. By means of the spectral investigations of the organic nitrites, their solutions, their nitrogen oxides in free and adsorbed state, of nitric acid and nitrous acid, of the oxidized cellulose,

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previous to and after a vacuum treatment, as well as by heating and the effect of the solvents the authors showed that in the macromolecular reaction, products formed in the oxidation of cellulose with NO_2, besides the groups containing carboxy and carbonyl groups, a cellulose nitrite is formed in considerable quantities. In order to determine its content in the oxidation products the value of the optical density at λ 365 mμ was made use of; the carboxyl groups were determined according to the modification of the optical density at λ 250 mμ, the carbonyl groups at λ 280 mμ (Refs. 5, 19). Thus the amount of cellulose nitrite found by the authors already earlier in oxidation products of cellulose with NO_2 was determined. It was shown that with the duration of oxidation the amount of the nitrite passes through a maximum. A maximum accumulation velocity of the carboxyles corresponds to the maximum amount of nitrite in the oxidation product. The character of the reaction process depends on the temperature. A rise of temperature reduces the amount of the carboxyl groups as well as of the nitrite. This way the cellulose nitrite discovered by

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the authors was recognized as an intermediary product in the oxidation process of cellulose with NO_2 .

There are 6 figures and 3o references, 16 of which are Soviet.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet i Institut fiziki i matematiki Akademii nauk Belorusskoy SSR (Belorussian State University and Institute for Physics and Mathematics, AS Belorussian SSR)

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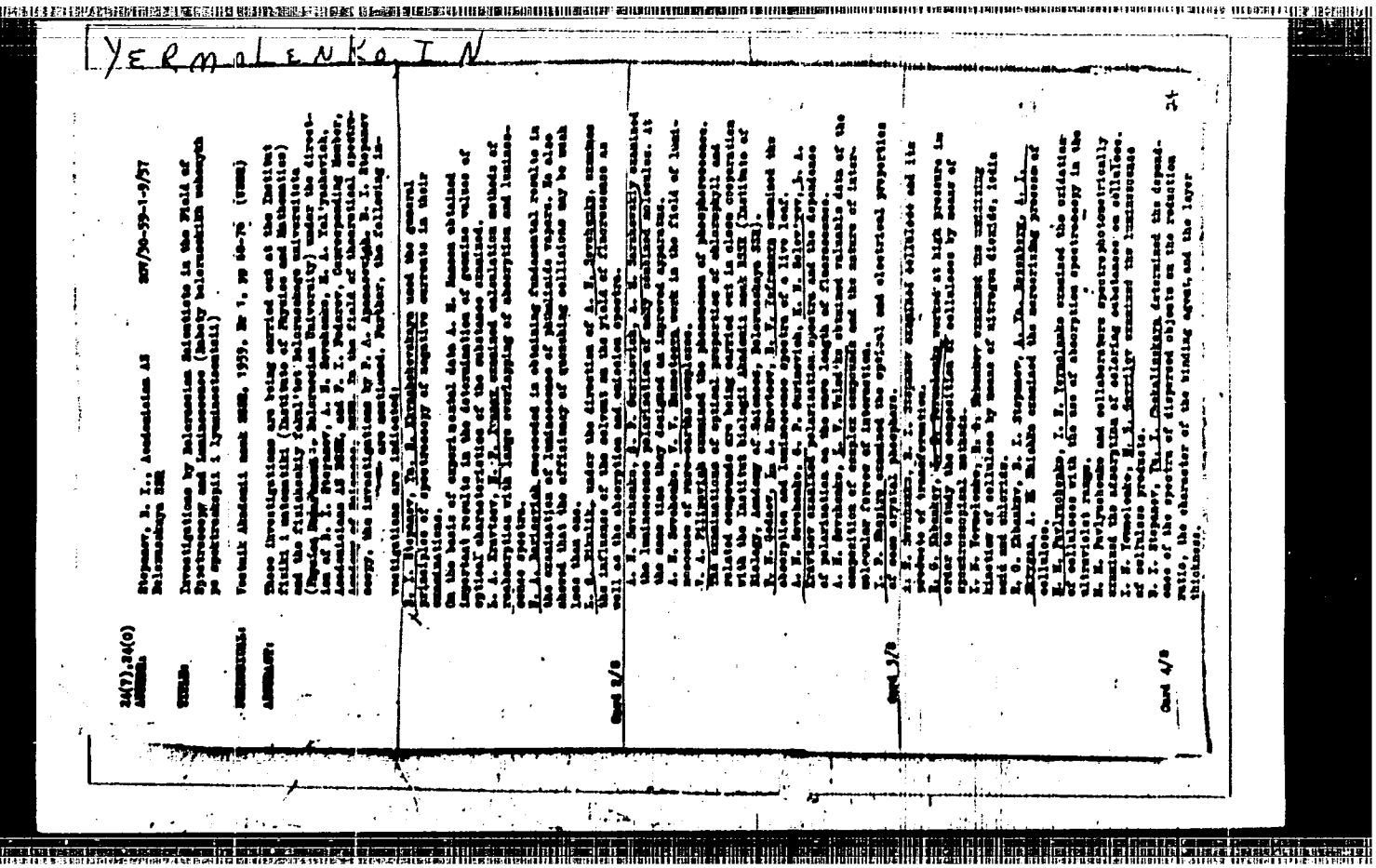

YERMALENKO, I. N.

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AUTHOR:

TITLE:

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ABSTRACT:

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YERMOLENKO, Igor' Nikolayevich; PAVLYUCHENKO, M.M., red.; MARIKS, L., red.izd-va; VOLOKHANOVICH, I., tekhn.red.

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