

VISHNYAKOV, Ya.D.; UMANSKIY, Ya.S.

Occurrence of oriented porosities in metal during hardening. Fiz.  
met. i metalloved. 16 no.4:632-634 O '63. (MIRA 16:12)

1. Moskovskiy institut stali i splavov.

VISHNYAKOV, Ya.D.; KURDYUMOV, V.G.

Electron-microscope study of the dislocation structure of the alloy Co+5% Fe. Fiz. tver. tela 6 no.1:279-281 Ja '64. (MIRA 17:2)

1. Institut fiziki metallov, Moskva.

VISHNYAKOV, Ya.D.; UMANSKIY, Ya.S.

Characteristics of the dislocation structure in alpha-iron  
and iron : 50 % cobalt alloys. Izv. vys. ucheb. zav.; chern.  
met. 7 no.1:145-147 '64. (MIRA 17:2)

1. Moskovskiy institut stali i splavov.

L 01209-67 EWT(m)/EWP(w)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/JW

ACC NR: AP6032458

SOURCE CODE: UR/0129/66/000/009/0042/0045

AUTHOR: Vishnyakov, Ya. D.; Ivanov, A. N.; Mirskiy, L. M.; Kherodinashvili, Z. Sh. <sup>57</sup><sub>56</sub>  
BORG: Institute of Steel and Alloys, Moscow (Moskovskiy institut stali i splavov)TITLE: Effect of high-temperature thermomechanical treatment on the fine structure and mechanical properties of titanium alloys KSOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 9, 1966, 42-45TOPIC TAGS: titanium alloy, thermomechanical <sup>property</sup> ~~treatment~~, alloy thermomechanical treatment, alloy, ~~fine structure~~, ~~alloy~~ mechanical property/VT3-1 alloy, VT15 alloy

ABSTRACT: VT3-1 titanium alloy (2.4% Mo, 1.6% Cr, 5.9% Al, 0.5% Fe, 0.2% Si) and VT15 titanium alloy (7.8% Mo, 11.0% Cr, 3.2% Al, 0.2% F, 0.1% Si) were subjected to high-temperature thermomechanical treatment (HTMT) — deformation at 900—1000 and 800—900C, respectively, followed by rapid (200C/sec) cooling. Specimens were strained either by tension (VT3-1 alloy) or by upsetting (VT15 alloy). HTMT increased the strength and ductility of the alloys. For example, the VT3-1 alloy strength increased from 115 kg/mm<sup>2</sup> after conventional heat treatment to 142 kg/mm<sup>2</sup> after HTMT at 900C with a reduction of 26%. Higher reductions brought about no additional effect. Aging at 500C for 5 hr increased the strength of conventionally and thermomechanically treated alloy to 125 and 160 kg/mm<sup>2</sup> at an elongation of 12 and 15%, respectively. With the HTMT in the  $\beta$ -region (1000C), the strengthening effect was

Card 1/2

UDC: 620.17:669.295:621.789

L 01209-67

ACC NR: AP6032458

still higher because only  $\alpha'$ -phase was formed. With increasing deformation in HTMT, the size of the coherent dispersion regions decreased and the lattice microdeformations increased in both alloys. Subsequent tempering at 550C for 2 hr brought about no changes in the fine structure, which indicated a thermally stable configuration of the lattice defects formed with deformation and subsequent phase transformation. Also, no grain growth occurred in thermomechanically treated alloys reheated up to 900C; this ensures preservation of the advantages of HTMT at elevated temperatures. However, at temperatures above 600C, because of a higher diffusion in the structure with defects, the thermomechanically treated VT3-1 alloy softens more rapidly than conventionally heat treated alloy. Orig. art. has: 2 figures and 3 tables. [MS]

SUB CODE: 11/ SUBM DATE: <sup>16</sup> none/ ORIG REF: 005/ ATD PRESS: 5097

Card 2/2 blg

AFANAS'YEV, P., inzh.; BORODICH, M., inzh.; VISHNYAKOV, Ye., inzh.

Making wire-reinforced concrete girders on stands. Na stroi. Ros.  
3 no.5:37 Ny '62. (MIRA 15:9)  
(Beams and girders)

VISHNYAKOV, Ye.P.

Newly designed borer for the installation of SPM-16  
seismographs. Razved. 1 prom. geofiz. no. 42:39-40 '61.  
(MIRA 16:11)

GRODZENSKIY, V.A.; VISHNYAKOV, Ye.P.; MALOVITSKIY, Ya.P.

Apparatus for correlated recording of seismic vibrations and  
results of its use. Prikl. geofiz. no.37:67-94 '63. (MIRA 16:10)



VOYUTSKIY, V.S.; VISHNYAKOV, YE.P.

Installation for combined grouping of seismographs at seismic  
stations, Razved. i pron.geofiz. no.25:41-52 '58. (MIRA 12:4)  
(Seismometry--Equipment and supplies)

HEKLETSKIY, I.I.; GORBUNOV, V.A.; VISHNYAKOV, Ye.S.

determining the direction of the source of excitation of elastic vibrations. Razved. geofiz. no.4:3-10 '65. (MIRA 18:9)

VISHNYAKOV, YE. P.

VISHNYAKOV, Ye.P.

Temporary apparatus for grouping seismographs. Razved.i pron.  
geofiz. no.17:3-5 '57. (MIRA 10:12)  
(Seismometers) (Prospecting--Geophysical methods)

VOYUTSKIY, V.S.; SLUTSKOVSKIY, A.I.; VISHNYAKOV, Ye.P.

Industrial testing of seismic stations with speed filters. Razved.  
i prom.geofiz.no.17:21-32 '57. (MIRA 10:12)  
(Seismometry)

VISHNYAKOV, Ye.P.

Dissertations defended in the Scientific Research Institute of  
Geophysical Prospecting. Izv.AN SSSR. Ser.geofiz. no.9:1128  
S '56. (MLBA 9:12)

(Prospecting--Geophysical methods)

L 40317-66 EWI(1) GW

ACC NR: AP6005348 SOURCE CODE: UR/0413/66/000/001/0092/0092 32  
B

INVENTOR: Voyutskiy, V. S.; Vishnyakov, Ye. P.; Shnirson, M. B.; Lev, I. S.;  
Grodzenskiy, V. A.; Tabakov, A. P.

ORG: none

TITLE: Method of recording weak explosions and earthquakes. Class  
42, No. 177640

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1,  
1966, 92

TOPIC TAGS: earthquake, ~~earthquake recording~~, seismic ~~vibration wave~~,  
~~correlation function~~, explosion, ~~explosion recording~~ seismology

ABSTRACT: An Author Certificate has been issued for a method of recording  
weak explosions and earthquakes based on determination of the interrela-  
tion function of seismic vibrations. To improve the quality and reliability  
of measurements, the values of the function obtained for a number of  
receiving points arranged along the profile are summed up with the vary-  
ing time shifts corresponding to those predetermined by the location of  
the receiving points along the profile. [LD]

SUB CODE: 08/ SUBM DATE: 29Jan63/

Card 1/177640

UDC: 550.341

100 AND 4TH COVERS

PROCESSES AND PROPERTIES UNDER

CR

33

Solubility of [cellulose] xanthate. M. Shpak and Vishayakhina. *Izvestiya Vuzov (Artificial Fiber)* 6, 203-6(1963).—The tabulated results disclose a relation between the soly. of a viscose and the color intensity of the xanthate soln. compared with the color scale of the Pulfrich photometer. The viscoses obtained from xanthates with the color intensity of nos. 3.5-4.5 of the scale are quite or fairly sol. Paler or more intensely colored specimens of xanthate show distinctly variegated microstructure (presence of lignin up to 1.5% and mech. impurities).

ASB-56.8 METALLURGICAL LITERATURE CLASSIFICATION

S/179/60/000/03/014/039  
E191/E481

15.6000

AUTHORS: Vinogradov, G.V. and Vishnyakov, V.A. (Moscow)

TITLE: Abrasive Wear<sup>1b</sup> in Rolling Friction<sup>1b</sup>

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 3, pp 89-98 (USSR)

ABSTRACT: A four ball friction machine was used in the experimental study of the laws of abrasive wear of hardened steel with different lubricants under rolling friction at high contact pressures. The three lower balls remained free to roll along the groove of the supporting cup. The rolling speed of the lower balls was varied between 0.03 and 0.60 m/sec. The Hertz contact stress could reach 50000 kg/cm<sup>2</sup>. A constant temperature of the lubricant was maintained. A high viscosity oil containing an additive with surface activity, a high viscosity non-polar oil, a low viscosity oil with 1% oleic acid, a low viscosity non-polar liquid (Cetane) and plastic lubricants, were used. Quartz dust with a micro-hardness of about 1000 kg/cm<sup>2</sup> served as an abrasive with particle sizes between 6 and 40 microns. By measuring the electrical resistance across the bearing

Card 1/3



S/179/60/000/05/014/039  
E191/E481

Abrasive Wear in Rolling Friction

model, the conditions of lubrication were detected. With the help of a special contact in the supporting cup, the rpm of the upper ball and the rolling speed of each of the lower balls were recorded. Parallel tests were carried out with an actual ball-bearing which showed that conditions in the model were similar. The balls roll over an abrasive layer which constitutes a mixture of lubricant with abrasive. Each factor was varied singly for each set of tests. A repeatability of 10% was established. It was found that the abrasive particles are ground in the wear process down to a size equal to the depth of the projections of the rolling surfaces plus the thickness of the lubricating layer. In low viscosity liquids, a sedimentation process of the abrasive particles takes place so that the largest are deposited at the bottom of the cup outside the rolling track. Thus wear is smaller in spindle oil than in grease, although the grease possesses better lubricating properties. Lubricants thickened by the addition of high molecular weight polymers experienced in the friction machine a reduction of viscosity which shows the disintegration of

Card 2/3

S/179/60/000/03/014/039  
E191/E481

Abrasive Wear in Rolling Friction

the polymer presumably by very high gradients of the shear velocity. The same phenomenon has been found in gearboxes. Parallel tests with a pulley mounted on ball and roller bearings were carried out to show similar laws of abrasive wear. There are 10 figures, 1 table and 6 references, 5 of which are Soviet and 1 English. ✓

Card 3/3

VASILEVSKIY, I.M.; VISHNYAKOV, V.V.

Hodoscope system of pulse-fed counters. Prib. i tekhn. Eksp. no.2:  
58-63 Mr-Ap '60. (MIRA 13:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.  
(Nuclear counters)

83986

S/053/60/072/001/004/005  
B013/B060

26.2264

AUTHORS: Vishnyakov, V. V., Tan Syao-vey, Tyapkin, A. A.

TITLE: Low-voltage Halogen Counters 9

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol. 72, No. 1,  
pp. 133 - 152

TEXT: The authors studied the discharge mechanism in low-voltage halogen counters. They differ from ordinary self-quenched counters filled with organic vapors by the processes taking place in them. The characteristics of halogen counters under pulse feeding conditions were examined along with the part played by negative ions (Figs. 1 and 2). In addition, the authors studied semi-self-maintained discharge and its development in time (Fig. 3); the development of self-maintained discharge and the retardation of pulses (Figs. 4-6); discharge fluctuations near the threshold (Figs. 7 and 8). The particular character of the discharge development in time, depending on ionization on the expense of collisions of the second kind, explains a number of specific properties of low-voltage halogen counters. The particular character of such a

Card 1/3

83986

Low-voltage Halogen Counters

S/053/60/072/001/004/005  
B013/B060

discharge consists in that every ionization process is preceded by a certain diffusion time of the metastable neon atom (its collision with an impurity atom). The description of the discharge mechanism in halogen counters also conveys an explanation of the changes occurring in the properties of these counters on an increase of the halogen concentration. An augmented halogen addition leads to an increase in the critical voltage (Ref. 14). It was found that the specific properties of low-voltage halogen counters appear less and less marked with increasing halogen amount. These properties are characteristic of a discharge occurring as a result of the formation of metastable atoms of the initial gas and the ionization of impurity atoms brought about by the collision of the second kind. On a rise of the critical voltage in the counter an ionization of the gas occurs directly due to the electron impact. The part played by such an ionization becomes increasingly more important with rising voltage. For this reason, the mathematical description given in the present paper of the discharge in low-voltage halogen counters at a halogen pressure of some torrs is not applicable. At a sufficiently high halogen pressure, such a counter is transformed into a high-voltage

Card 2/3

83986

Low-voltage Halogen Counters

S/053/60/072/001/004/005  
B013/B060

counter, in which the discharge does not differ from that in an ordinary self-quenched counter. I. I. Glotov, L. S. Evg, are mentioned. There are 8 figures and 23 references: 9 Soviet.

Card 3/3

MATOV, K.; VISHNIAKOV, YU.

"Human diseases caused by Arthropoda" by Vasil A. Ganov.  
Reviewed by K. Matov, and IU. Vishniakov. Priroda Bulg  
12 no. 1: 120 Ja-F '63.

1. L'VOV, P. PASTUKHOVA, P. VISHNIAKOVA, A.
2. USSR (600)
3. Lumbering
4. Seedling plots in mechanized skidding.  
Les. prom. No. 11 - 1952.

9. Monthly List of Russian Acquisitions, Library of Congress, February, 1953. Unclassified.



URITSKAYA; VISHNYAKOVA; BORISOV; PINKHASOVICH; MURADOV; REBEL'MAN; OSERSKIY;  
PYATOV; BOKSERMAN; GORPISHCHENKO; YUREMENKO; ZHARKOV; POPOV; ROMANOVA;  
SIDORENKO; TODRIN; TIMOVYEVA.

Dmitrii Sergeevich Pavlov; obituary. Gaz. prom. no.1:56 Ja '58.  
(Pavlov, Dmitrii Sergeevich, 1904-1957) (MIRA 11:2)

VISHNYAKOVA, A.A.

USSR Chemical Technology. Chemical Products  
and Their Application

I-9

Fertilizers

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31302

Author : Nabiyeu M.N., Vishnyakova A.A.

Inst : Academy of Sciences Uzbek SSR

Title : Elimination of Hardening of Ammoniated Superphosphate by an Addition of Lignin

Orig Pub: Dokl. AN UzSSR, 1956, No 9, 31-34

Abstract: Report of the results of laboratory experiments on addition of air-dry lignin ( $H_2O$  19-22%,  $H_2SO_4$  0.9%) in an amount of 2-10%, to superphosphate prior to its ammonification. On addition of 10% lignin, the ammoniated superphosphate pro-

Card 1/2

USSR /Chemical Technology. Chemical Products  
and Their Application

I-9

Fertilizers

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31302

duced from apatite concentrate, as well as that  
obtained from Kara-Tau phosphorites, is rendered  
completely friable. Lignin is a useful additive  
since it is rapidly converted, in the soil, to  
humic acids which improve structure of the soil.

Card 2/2

VISHNYAKOVA, A.A.; NABIYEV, M.N., akad.

Effect of magnesium compounds on the composition and hygroscopicity  
of simple and ammoniated superphosphates. Izv.AN Uz.SSR no.11:25-35  
'56. (MIRA 14:5)

1. AN UsSR (for Nabiyeu)  
(Magnesium compounds) (Phosphates)

VISHNYAKOVA, A.A., Cand Chem Sci -- (diss) "<sup>effect</sup>Influence of  
magnesium compounds <sup>of</sup> on physicochemical properties of simple  
and ammonified superphosphate from phosphorites of Karatau."  
Tashkent, <sup>Publication House</sup> ~~Publication~~ of Acad Sci <sup>of</sup> Uzbek SSR, 1957. 28 pp  
with graphs (Acad Sci Uzbek SSR, Inst of Chemistry), 150 copies.  
(KL, 1-58, 115)

- 10 -

VISHNYAKOVA, A.A.; NABIYEV, M.N., akademik

Effect of magnesium salts on the hydrophylic properties of  
ammoniated and ordinary superphosphate. Izv. AN Uz.SSR Ser. khim.  
nauk no.2:5-12 '57. (MIRA 11:8)

1.An UzSSR (for Nabiyeu)  
(Phosphates) (Magnesium salts) (Hygroscopicity)

VISHNYAKOVA, S.S.

NABIYEV, M.N., akademik; FARMANOV, Z.N.; YISHNYAKOVA, A.A.

Ammoniation of superphosphate by ammonium compounds. Uzb. khim.  
zhur. no. 1:7-14 '58. (MIRA 11:7)

1. AN UzSSR (for NABIYEV). (Phosphates)  
(Ammonia)



NABIYEV, M.N., akademik; VISHNYAKOVA, A.A.; LUNEZHIEVA, M.S., red.izd-va;  
BARTSEVA, V.P., tekhn.red.

[Ammoniated superphosphate from Kara-Tau phosphorites] Ammoniziro-  
vannyi superfosfat iz fosforitov Karatau. Tashkent, Izd-vo Akad.  
nauk Uzbekskoi SSR, 1960. 176 p. (MIRA 13:11)

1. AN UzSSR (for NABIYEV).  
(Phosphates)

TUKHSANOV, E.; VISHNYAKOVA, A.A.; NABIYEV, M.N., akademik

Effect of oxidized coals on the process of chamber superphosphate maturing. Uzb.khim.zhur. 8 no.4:12-17 '64. (MIRA 18:12)

1. Institut khimii AN UzSSR. Submitted July 24, 1963.
2. AN UzSSR (for Nabiyeu).

KAMALOV, K.; VISHNYAKOVA, A.A.; IVANOV, V.P.; NABIYEV, M.N.; SADOVSKIY, K.D.;  
ROZENOVICH, V.A.; KALMANOVICH, L.A.

Development of the production technology for ammoniated super-  
phosphate on the basis of a granulation equipment. Uzb.khim.  
zhur. 9 no.1:58-61 '65. (MIRA 18:6)

1. Institut khimii AN Uzbekskoy SSR.

NABIYEV, M.N., akademik; VISHNYAKOVA, A.A.; BAZILEV, V.D.; AKMAYEV, Kh.M.;  
KAMILOV, A.; RASULEVA, Sh.; ARUTYUNOVA, N.M.

Increasing the degree of phosphate decomposition by a partial  
substitution of nitric acid for sulfuric acid and ammoniation of  
chamber superphosphate. Uzb.khim.zhur. no.4:3-10 '61. (MIRA 14:8)

1. Institut khimii AN Uzbekskoy SSR. 2. Akademiya nauk Uzbekskoy  
SSR (for Nabyev). (Phosphates)

NABIYEV, M.N., akademik; VISHNYAKOVA, A.A.; RAKHIMDZHANOVA, I.

System  $MgO - P_2O_5 - H_2O$  (solubility of magnesium nitrate  
in phosphoric acid at  $25^{\circ}C$ ). Uzb.khim.zhur. no.5:3-8 '61.  
(MIRA 14:9)

1. Institut khimii AN Uzbekskoy SSR. 2. AN Uzbekskoy SSR  
(for Nabiyev).  
(Phosphates) (Systems (Chemistry))

EXCERPTA MEDICA Sec 16 Vol 7/7 Cancer July 59

2610. **Dopan treatment of myeloid leukaemia and some malignant tumours (Russian text)** VISHNYAKOVA E. G. Inst. of Exp. Pathol. and Ther. of Cancer, Moscow *Vopr. Onkol.* 1958, 4/5 (569-572) Tables 2

Dopan was employed for the treatment of 7 patients with chronic myeloid leukaemia and of 18 patients with malignant tumours. The drug proved to be effective for the treatment of chronic myeloid leukaemia. In 6 cases the blood picture improved and the spleen decreased in size. Reticulosarcoma, chorionepithelioma, lymphosarcoma and cancer of the lungs and bile ducts were found to be insensitive.

KRASNIK, F.I.; VISHNYAKOVA, L.A.

Data on ornithosis infection in Leningrad. Trudy Len.inst.epid.  
i mikrobiol. 20:98-105 '59. (MIRA 16:1)  
(LENINGRAD. ORNITHOSIS)

VISHNYAKOVA, L.A.; MEYTN, B.I.; POLESITSKAYA, M.I.

Household outbreak of ornithosis connected with pigeons. Trudy  
Len.inst.epid.i mikrobiol. 23:267-272 '61. (MIRA 16:3)

1. Iz laboratorii osobo opasnykh infektsiy i rikketsiozov Lenin-  
gradskogo instituta epidemiologii i mikrobiologii imeni Pastera,  
Leningradskoy gorodskoy sanitarno-epidaniologicheskoy stantsii  
i Sanitarno-epidemiologicheskoy stantsii Smol'ninskogo rayona.  
(LENINGRAD—ORNITHOSIS) (PIGEONS AS CARRIERS OF DISEASE)



VISHNYAKOVA, L.A.; GLADKOVSKIY, A.P.

Duration of the preservation of complement-fixing antibodies following the recovery from ornithosis. Trudy Len. inst. epid. i mikrobiol. 25:219-224, '63.

(MIRA 17:1)

1. Iz otdela osobo opasnykh infektsiy Leningradskogo instituta epidemiologii i mikrobiologii imeni Pastera i Leningradskoy infektsionnoy bol'nitsy imeni Botkina.

FILATOV, I.F.; TOKAREVICH, K.N.; VISHNYAKOVA, L.A.; FRIDMAN, E.A.

Role of viral and rickettsial agents in the etiology of acute types of pneumonia. Trudy Len. inst. epid. i mikrobiol. 25:201-209 '63. (MIRA 17:1)

1. Iz otdela osobo opasnykh infektsiy i laboratorii gripa Leningradskogo instituta epidemiologii i mikrobiologii imeni Pastera.

GOL'DIN, R.B.; KRASNIK, F.I.; VISHNYAKOVA, L.A.

Experimental typhus fever infection and immunity in irradiated animals. Report No. 1: Course of typhus fever infection in cotton rats exposed to X-ray radiation. Trudy Len. inst. epid. i mikrobiol. 25:32-41 '63. (MIRA 17:1)

1. Iz Voenno-meditsinskoy ordena Lenina akademii imeni Kirova i otdela osobo opasnykh infektsiy Leningradskogo instituta epidemiologii i mikrobiologii imeni Pastera.

TOKAREVICH, K.N.; VISHNYAKOVA, L.A.; GLADKOVSKIY, A.P.; YAKOVLEV, N.N.

Outbreak of ornithosis of an occupational nature. Trudy Len. inst. epid. i mikrobiol. 25:185-191 '63. (MIRA 17:1)

1. Iz otdela osobo opasnykh infektsiy Leningradskogo instituta epidemiologii i mikrobiologii imeni Pastera i Leningradskoy infektsionnoy bol'nitsy imeni S.P. Botkina.

VISHNYAKOVA, L.A.

Materials on the evaluation of the results of complement fixation reaction in ornithosis in man. Trudy Len. inst. epid. i mikrobiol. 25:210-218 '63.

Study of the immunological structure of population in Leningrad in relation to ornithosis. Ibid.:225-232

Inhibitory complement fixation reaction in the study of ornithosis. Ibid.:233-244 (MIRA 17:1)

VISHNYAKOVA, N. I.

"Characteristics of Fertilization to Obtain Maternal Forms of Heredity."  
Cand Biol Sci, All-Union Order of Labor Red Banner Selection and Genetics Inst  
itute T. D. Lysenko, Odessa, 1955. (KL, No 12, Mar 55)

Sp: Sum. No 670, 29 Sept 55 - Survey of Scientific and Technical Dissertations  
Defended at USSR Higher Educational Institutions (15)

VISHNYAKOVA, M.K., inzh.

Increasing the traffic capacity of channel groups in automated  
networks. Sbor. LII ZHT no. 161:205-211 '58. (MIRA 11:12)  
(Telephone, Automatic)

DUBININ, M.M.; VISHNYAKOVA, M.M.; ZAVERINA, Ye.D.; ZHUKOVSKAYA, Ye.G.;  
LEONT'YEV, Ye.A.; LUK'YANOVICH, V.M.; SARAHOV, A.I.

Adsorption properties and secondary porous structure of adsorbents  
acting as molecular sieves. Report No.1: Industrial specimens of  
synthetic zeolites. Izv.AN SSSR Otd.khim.nauk no.3:396-406 Pr. '61.  
(MIRA 14:4)

1. Institut fizicheskoy khimii Akademii nauk SSSR.  
(Zeolites)



ACCESSION NR: AP4027716

S/0183/64/000/002/0043/0048

AUTHORS: Meos, A.I.; Vishnyakova, M.N.; Dumitrin, M.

TITLE: The action of modifiers in forming supermolecular structures of viscose fibers

SOURCE: Khimicheskiye volokna, no. 2, 1964, 43-48

TOPIC TAGS: viscose fiber, formation, supermolecular structure, modifier, cyclohexylamine, polyethyleneglycol, hydroxyethylated amine, zinc sulfate, mechanism, electron microscope, production condition, tire cord, fiber uniformity, fiber strength, pH control, structure forming zone, buffer, cellulose xanthate

ABSTRACT: The structures of viscose fibers obtained by adding modifiers (cyclohexylamine, polyethyleneglycol and hydroxyethylated amines) to the viscose were examined with an electron microscope in order to determine conditions most suitable for the production of uniform tire cord. A mechanism for the action of the modifiers is proposed. The structure of fibers which were most uniform were produced from viscose containing modifiers and an increased zinc

Card 1/3

ACCESSION NR: AP4027716

sulfate content and had low acidity in the settling bath; these structural elements were well formed and have smaller and more uniform diameters than fibers formed under other conditions. The proposed mechanism for the action of modifiers is that they help maintain the proper pH in the active structure-forming zone, forming onium compounds in an acid medium and destroying them in alkali. In the settling bath the zinc also acts as a buffer. The modifier acts as buffer on the surface and zinc acts on the internal half of the active structure forming zone. Besides acting as buffer, the modifier changes the solubility of the cellulose xanthate, forming an ample number of centers for the formation of structural elements which in turn leads to the formation of small diameter structural elements. It is concluded that the well-formed sections of macromolecules indicate that zinc xanthate is not formed in the structure-forming process; the zinc sulfate neutralizes the caustic in the viscose jets. Increasing the acidity of the settling bath accelerates the viscose fiber forming processes to such an extent that the buffering action of the modifier and zinc are suppressed and the structure forming zone is extremely small. Orig. art. has: 4 figures and 7 equations.

Card 2/3

ACCESSION NR: AP4027716

ASSOCIATION: LITLP im. S. M. Korova (Leningrad Institute for the

SUBMITTED: 28May63

DATE ACQ: 22Apr64

ENCL: 00

SUB CODE: MT

NR REF SOV: 007

OTHER: 005

Card

3/3

S/062/61/000/009/004/010  
B117/B206

AUTHORS: Dubinin, M. M., Vishnyakova, M. M., Zaverina, Ye. D.  
(Deceased), Zhukovskaya, Ye. G., and Sarakhov, A. I.

TITLE: Investigation of the adsorption properties and secondary  
pore structures of adsorbents having the effect of micro-  
filters. Communication 4. Granulated synthetic zeolites  
of the A-type

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye Khimicheskikh  
nauk, no. 8, 1961, 1387-1395

TEXT: The authors investigated the adsorption properties, the secondary  
pore structures of the grains and their apparent and gravimetric density.  
Granulated A-type zeolites obtained by Soviet scientists at the beginning  
of studies in the field of zeolite synthesis, were investigated. A number  
of specimens by Ya. V. Mirskiy (Mr) were used, during the production of  
which the pressure was repeatedly changed, and one specimen by  
B. A. Lipkind (Lp). The designation of the samples is composed of the  
abbreviated name of the producer and the specimen number given by him

Card 1/8

Investigation of the adsorption...

S/C62/61/CCG/COE/CO4/C10  
B117/B2C6

Two specimens each of granulated zeolites by the American firm of Linde (I) and (II) in the form of grains with 1/8" diameter were used for comparison. To the sodium form (NaA) belonged: Mr-296, Lp-202-B, Linde 4A (I), Linde 4A (II). To the calcium form (CaA) belonged: Mr-297, Mr-347, Mr-372, Mr-380, Linde 5A (I) and Linde 5A (II). The isotherms of sorption and desorption of benzene vapors were determined by sorption scales in vacuum. The specific method for experiments with zeolites was previously described by M. M. Dubinin (Ref. 3: Izv. AN SSSR. Otd. khim. n., 1961, 750). The isotherms determined had generally the same character as those mentioned by the authors, Ye. A. Leont'yev and V. M. Luk'yanovich (Ref. 2: Izv. AN SSSR. Otd. khim. n., 1961, 396). Adsorption isotherms of water vapors were measured by sorption scales in vacuum for direct comparison of the adsorption properties of granulated, completely dehydrated zeolites. The secondary pore structure of the grains was investigated by pressing in mercury, and according to the sorption method. Mercury porometry makes it possible to determine the distribution of the pore volumina according to their effective radii in the range of  $1 \cdot 10^6$  to  $15-25 \text{ \AA}$ . From the isotherms of capillary condensation of vapors

Card 2/8

Investigation of the adsorption...

S/062/63/000/008/004/010  
B117/B206

of substances, for which the pore structure of zeolite crystals (primary porosity) is inaccessible, sorption volumina or the summary pore volumina with effective radii below 100 Å might easily be found. From these data the total volume of the secondary pore structure may be calculated. In experiments with mercury, low- and high-pressure pore meters were used (Ref. 4: M. M. Dubinin, A. I. Sarakhov and G. A. Ryabikov, Zh. fiz. khimii 32, 1404, (1958); Ref. 5: M. M. Dubinin, M. M. Vishnyakova, Ye. G. Zhukovskaya, Ye. A. Leont'yev, V. M. Luk'yanov, A. I. Sarakhov, Zh. fiz. khimii 34, 2019 (1960)). Zeolite grains which were in equilibrium with the air humidity were applied. The main characteristics of the secondary pore structure of zeolite grains are listed in Table 3. Table 4 contains information on the volume of the secondary pore structure. When applying zeolite grains in practice, it is not the adsorptive power of the unit of mass of the grains which is of vital importance, but the unit of volume of the grain layer. Therefore, the correlation must be established between adsorption properties as well as apparent density of the zeolite granules and the volume of their secondary pore structure. This problem may be solved if composition of zeolite grains and volume of the secondary pores are known from experimental data. The calculated and experimental

Card 3/8

Investigation of the adsorption...

S/062/51/000/004/010  
B117/B206

characteristic features of A-type zeolite grains are compared with each other in Table 5. The values for the apparent grain density agree well in general. The deviations amount to a maximum of 13%. The calculated and experimental maximum adsorption volumes for water are similar for NaA grains. For most of the CaA grains of Soviet and American origin, the maximum adsorption volumes are below the values calculated from the crystal content. A part of the highly disperse zeolite crystals, i.e. in CaA grains, is obviously excluded from the adsorption process for yet unclarified reasons. The latter are being investigated at present. The comparison of the granulated A-type zeolites synthesized by Soviet scientists with corresponding American specimens showed that with respect to their adsorption properties they are only identical at the surface of secondary pores. This concerns the accessibility of the pore structure of the actual zeolite crystals for the adsorbable molecules, as well as the adsorption of bigger molecules. The zeolite grains investigated show strongly differential volumina of the secondary pore structure. That is the main reason for the fact that the apparent and gravimetric density and thus the adsorption properties of granulated zeolites are different for the units of volume of the grain layers. The authors thank B. A. Lipkind

Card 4/8

Investigation of the adsorption...

S/062/61/000/008/004/010  
B117/B206

and Ya. V. Mirskiy for supplying specimens and experimental data on apparent densities of the grains. There are 2 figures, 5 tables, and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The two references to English-language publications read as follows: D. W. Breck, W. G. Eversole, R. M. Milton, T. B. Read, T. L. Thomas, J. Amer. Chem. Soc. 78, 5963 (1956); R. M. Barrer, W. M. Meier, Trans. Faraday Soc. 54, 1072 (1958).

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, AS USSR)

SUBMITTED: December 12, 1960

Card 5/8



S/062/61/000/003/002/013  
B117/B208

**AUTHORS:**

Dubinin, M. M., Vishnyakova, M. M., Zaverina, Ye. D.,  
Zhukovskaya, Ye. G., Leont'yev, Ye. A., Luk'yanovich, V. M.,  
and Sarakhov, A. I.

**TITLE:**

Study of adsorption properties and structure of secondary  
pores of adsorbents having the effect of molecular sieves.  
Report 1. Industrial samples of synthetic zeolites

**PERIODICAL:**

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh  
nauk, no. 3, 1961, 396-406

**TEXT:** The authors studied some peculiarities of the adsorption properties  
of typical industrial samples of synthetic zeolites and the structure of  
their secondary pores. They used industrial samples from molecular sieves  
designed by Linde 4A (designated by MC-4A(MS-4A)), and 5A (designated by  
MC-5A (MS-5A)) in the form of 4-8 mm long grains with an average diameter  
of ~3.2 mm. Sorption isotherms and, in some cases, desorption isotherms  
of nitrogen vapors at -195°C, and water, benzene, and cyclohexane vapors  
at 20°C were determined. A similar apparatus as that described in Ref. 2

Card 1/4

S/062/61/000/003/002/013  
B117/B208

J

Study of adsorption properties...

(B. P. Bering, M. M. Dubinin, Ye. G. Zhukovskaya, A. I. Sarakhov, and V. V. Serpinskiy, Zh. fiz. khimii 31, 712, 1957) was applied. To study the structure of secondary pores of MS-4A and MS-5A grains, low- and high-pressure porosimeters were used. The latter was a redesigned device of the ПA-4 (PA-4) type (Ref. 5: T. G. Plachenov, V. A. Aleksandrov, and G. M. Belotserkovskiy, Metody issledovaniya struktury vysoko-dispersnykh i pristrykh tel, Izd. AN SSSR, M., 1953, str. 59). For the electron-microscopic examination of the structure of secondary pores, the method of single-stage carbon replicas was used. The pictures of carbon replicas of MS-4A and MS-5A taken by means of an У3М-100 (UEM-100) electron microscope showed no marked differences. A thorough analysis of stereophotographs indicates that there was no dense packing of the zeolite crystals in the grains. There are interstices of the order of magnitude of small crystals, i.e., some tenths of a micron or some thousandths of an angstrom. Strong enlargements show that the crystal surface is not amorphous. The studies of MS-4A and MS-5A disclosed that the potential adsorption theory could be applied to them. As the authors had not obtained any experimental data, they used the results obtained by N. V. Kel'tsev, for water vapor at 20° and 80°C and at equilibrium pressures  $p = 1$  and 25 mm Hg, which had been

Card 2/4

S/062/61/000/003/002/013  
B117/B208

Study of adsorption properties...

made available to them. The measured values of adsorption deviate from the calculated values by 3% at most. Eq. (1) expresses the temperature dependence of the adsorption isotherms satisfactorily:

$$(1) \quad a = (W_0/v) \exp \left[ -B \frac{T^2}{\beta^2} (\log p_s/p)^2 \right]$$

$W_0$  = limiting volume of the adsorption space, which is equal to the volume of the micropores of the adsorbent;  $B$  = constant dependent on the dimensions of the micropores, which determine the increase of the adsorption potentials;  $\beta$  = affinity factor of the characteristic lines;  $v$  = volume of 1 mM of the vapor liquefied at the experimental temperature  $T$ . When considering the structure of the secondary pores, it was found that it may be quantitatively described by the sorption and mercury methods of measuring the pores. The characteristics obtained for the pore structure of MS-4A and MS-5A are given in Table 4. There are 9 figures, 7 tables, and 13 references: 12 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences USSR)

Card 3/4

S/062/61/000/003/002/013  
B117/B208

Study of adsorption properties...

SUBMITTED: December 30, 1959

Legend to Table 4: Porosity of grains from Linde's molecular sieve;  
1) adsorbent;  $V_2$  = volume of secondary pores;  $V_{\Sigma} = V_1 + V_2$

Аdsorbent	$W_{N_2}$ , cm <sup>3</sup> /g	$W_{H_2O}$ , cm <sup>3</sup> /g	$V_1 = \bar{W}_{N_2}$ , cm <sup>3</sup> /g	$V_2$ , cm <sup>3</sup> /g	$V_{\Sigma}$ , cm <sup>3</sup> /g
MC-4A	—	0,233	0,233	0,302	0,535
MC-5A	0,219	0,202	0,210	0,323	0,533

Card 4/4

DUBININ, M.M.; VISHNYAKOVA, M.M.; ZAVERINA, Ye.D. [deceased];  
ZHUKOVSKAYA, Ye.G.; SARAKHOV, A.I.

Adsorption properties and secondary structure of adsorbents  
acting as molecular sieves. Report No.4: Granulated synthetic  
zeolites of type A. Izv. AN SSSR. Otd.khim.nauk no.8:1367-  
1395 Ag '61. (MIRA 14:8)

1. Institut fizicheskoy khimii AN SSSR.  
(Zeolites)

S/C76/60/034/009/015/022  
BO15/BO56

AUTHORS: Dubinina, M. M., Vishnyakova, M. M., Zhukovskaya, Ye. G.,  
Leont'yev, Ye. A., Luk'yanovich, V. M., and Sarakhev,  
A. I.

TITLE: Investigation of the Porous Structure of Solids by Sorption  
Methods. V. Application of Different Methods for Studying  
the Structure of Intermediate and Macro-pores of Active  
Coals

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 9,  
pp. 2019-2029

TEXT: A thorough investigation of the structure of intermediate pores,  
whose size is between micro- and macro-pores, of some typical kinds of  
coal (from the type AY-10 - AY-14 (AU-10 to AU-14)) with intermediate  
porosity is carried out by the method of capillary condensation of vapors  
(benzene or nitrogen), by pressing in mercury, or by electron microscopy.  
Data concerning the volumes of the micro- and intermediate pores of the  
investigated kinds of coal are given in a table and show that in all

Card 1/3

Investigation of the Porous Structure of Solids by Sorption Methods. V. Application of Different Methods for Studying the Structure of Intermediate and Macro-pores of Active Coals

S/076/60/034/009/015/022  
B015/B056

samples the volumes of the intermediate pores exceed those of the micro-pores by a multiple. The sorption and desorption experiments carried out with nitrogen vapors at  $-195^{\circ}\text{C}$  and benzene at  $20^{\circ}\text{C}$  a device with quartz scales. A detailed description of this device is given in Ref. 11. The sorption isothermal lines (Figs. 1-3) are all S-shaped and have a hysteresis, the beginning of which corresponds to the equilibrium pressure  $(p/p_s)_o = 0.175$  for benzene at  $20^{\circ}\text{C}$  and  $(p/p_s)_o = 0.45$  for nitrogen at  $-195^{\circ}\text{C}$ . For the purpose of determining the porous structure by the method of pressing-in mercury, two pore gauges of the type ПА-4 (PA-4) (Ref. 8) (one for low and one for high pressure) were used. For electro-microscopic examinations a УЭМ-100 (UEM-100) electron microscope was used, carbon replicas were recorded (Fig. 5), and pore diameters from 70 to 110 Å were found. The summational curves (Figs. 6-8) of the volume of the intermediate pores with respect to their effective diameters, which were calculated from the sorption isothermal lines for benzene and were measured

Card 2/3

Investigation of the Porous Structure of  
Solids by Sorption Methods. V. Application  
of Different Methods for Studying the Structure  
of Intermediate and Macro-pores of Active  
Coals

S/076/60/034/009/015/022  
B015/B056

by pressing in mercury, showed good agreement. In the case of the results obtained for nitrogen, less good agreement was found. The electron-microscopic values qualitatively confirm the sorption values and the measured values obtained by pressing in mercury. B. P. Bering and V. V. Serpinskiy are thanked for their interest in the present paper. There are 8 figures, 1 table, and 13 references: 12 Soviet and 1 US.

ASSOCIATION: Akademiya nauk SSSR Institut fizicheskoy khimii  
(Academy of Sciences USSR, Institute of Physical Chemistry)

SUBMITTED: December 24, 1958

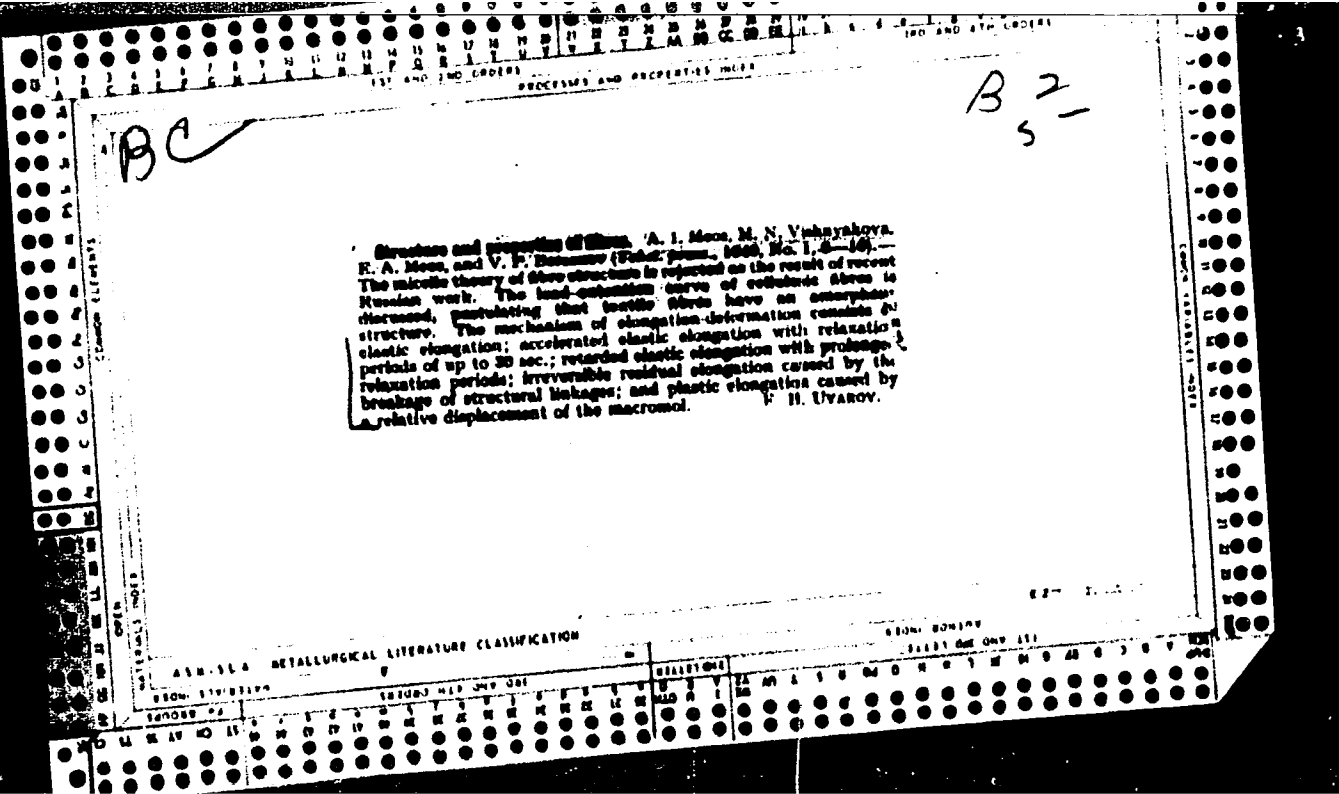
Card 3/3



DUBININ, M.M.; YISHNYAKOVA, M.M.; ZHUKOVSKAYA, Ye.G.; LEONT'YEV, Ye.A.;  
LUK'YANOVICH, V.M.; SARAKHOV, A.I.

Study of the porous structure of solids by sorption methods.  
Part 5: Use of different methods in the study of the structure of  
the intermediate pores and macropores of activated carbons.  
Zhur.fiz.khim. 34 no.9:2019-2029 S '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut fizicheskoy khimii.  
(Carbon, Activated)



MEOS, A.I.; VISHNYAKOVA, M.N.; DUMITRIU, M.

Effect of modifiers on the formation of the supermolecular  
structure of viscose fibers. Khim. volok. no.2:43-48 '64.  
(MIRA 17:5)

1. LITLP im. S.M. Kirova.

VISHNYAKOVA, M.N.; MEOS, A.I.

Study of the structure of capron fibers by means of an electron  
microscope. Khim.volok. no.5:20-24 '60. (MIRA 13:12)

1. Leningradskiy tekstil'nyy institut imeni S.M.Kirova.  
(Nylon)

MEOS, A.I.; VISHNYAKOVA, M.N.; BYKOVA, Ye.A.

Solution of cellulose and other polymeric materials.  
Trudy LTA no.91:27-31 '60. (MIRA 15:12)

1. Leningradskiy tekstil'nyy institut imeni Kirova.  
(Polymers) (Cellulose)  
(Solution (Chemistry))

MEOS, A.I., VISHNYAKOVA, M.N.

Electron-microscopic study of the supermolecular structure of some  
chemical fibers.

Report presented at the 13th Conference on High-molecular compounds  
Moscow, 8-11 Oct 62

137-58-4-8356

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 293 (USSR)

AUTHORS: Radchenko, R.P., Vishnyakova, M.P.

TITLE: On the Causes of Increased Hardness in Slabs of 1Kh18N9T Steel (O prichinakh povyshennoy tverdosti slyabov iz stali 1Kh18N9T)

PERIODICAL: Sb. tr. Kuznetskogo mezhobl. pravl. Nauchno-tekhn. o-va chernoy metallurgii, 1956, Vol 1, pp 66-71

ABSTRACT: When 6-t slabs of stainless 1Kh18N9T steel are planed before rolling to sheet, hard surface defects resistant to machining appear similar to sintered fish scale or rough washed scale rolled-in during the rolling process. Investigations showed that the cause of these defects is the carburization of a surface layer of the ingot due to welding-on of mold iron. If the temperature of the metal before pouring is at the optimum 1590-1600°C and the molds are in good condition, rejects due to excessive slab hardness should not occur.

I. B.

Card 1/1

1. Steel--Machining--Hardness factors
2. Steel--Hardening--Analysis
3. Steel--Surface properties

MANDEL'BAUM, D.I.; KONKIN, A.A.; VISHNYAKOVA, M.N.

Connection between the submicroscopic structure of natural and regenerated cellulose. Khim.volok. no.5:31-33 '60.  
(MIRA 13:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Mandel'baum, Konkina). 2. Leningradskiy tekstil'nyy institut imeni Kirova (for Vishnyakova).  
(Cellulose) (Viscose)



VISHNYAKOVA, M.N.; MEOS, A.I.

Electron microscopy method of investigating sulfite pulp and viscose  
fibers. Izv.vys.ucheb.zav.; tekhn.tekst.prom. no.4: 9-14 '58.  
(MIRA 11:11)

1. Leningradskiy tekstil'nyy institut imeni S.M. Kirova,  
(Electron microscopy) (Textile fibers, Synthetic) /

VISHNYAKOVA, M.N.; MEOS, A.I.

Investigating the structure of chemical fibers by electron  
microscopy. Izv. vys. ucheb. zav.; tekhn. tekst. prom. no.5:18-27  
'58. (MIRA 11:12)

Leningradskiy tekstil'nyy institut imeni S.M. Kireva.  
(Textile fibers, Synthetic--Testing) (Electron microscopy)

PLEKHANOV, P.S., kand. tekhn. nauk; RADCHENKO, R.P., kand. tekhn. nauk;  
VISHNYAKOVA, M.E., inzh.

Heating of rail steel ingots in regenerative pits. Stal' 25  
no.8:837-840 S '65. (MIRA 18:9)

1. Kuznetskiy metallurgicheskiy kombinat i Vsesoyuznyy nauchno-  
issledovatel'skiy trubnyy institut.

*kand.*

VISHNYAKOVA, M.S.; KAKURIN, S.N., dots., red.

[Lectures for the second part of a course in "Theoretical principles of radio engineering": LC-generators of sinusoidal oscillations with positive feedback] Lektsii po vtoroi chasti kursa "Teoreticheskie osnovy radiotekhniki": LC-generatory sinusoidal'nykh kolebaniy s polozhitel'noi obratnoi svyaz'iu. Moskva, Vses. zaokhnyi energeticheskii in-t, 1961. 84 p. (MIRA 17:8)

NOSKOV, A.I., kand. veter. nauk; OSHKINA, I.I., kand. veter. nauk;  
VISHNYAKOVA, N.N., uchenyy zootekhnik

Hygienic characteristics of silage. Veterinariia 41 no.1:95-97  
Ja '64. (MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy  
sanitarii.

VISHNYAKOVA, R.N.; LYSUNKINA, D.S.; SYRKIN, Ya.M.; Prinimali uchastiye:  
KARATANOVA, G.N.; KHOLODNYI, A.G.

Plugging cement for extra-deep oil and gas wells. Trudy IUzngi-  
protsementa no.4:108-126 '63. (MIRA 17:11)

SYRKIN, Ya.M.; VISHNYAKOVA, R.N.

Plugging cements for extra-deep wells. TSement 29 no.4:7-  
10 JI-Ag '63. (MIRA 16:11)

1. Yuzhgiprotsement.

VISHNYAKOVA, R.S. (Ivanovo (obl.), Letnyaya ul., d.70, kv.10);  
NECHAYEV, B.K.

Three cases of complications in intraosseous metal osteosynthesis  
of the hip. Ort. travm. i protez. 23 no.10:72-74 0 '52.  
(MIRA 17:10)

1. Iz travmatologicheskogo otdeleniya (rukovoditel'- dotsent  
L.S. Khavkin) Ivanovskogo oblastnogo gosspitalya invalidov  
Otechestvennoy voyny (nachal'nik - V.K. Shilov).



BOLGOV, Ivan Vasil'yevich; KOPYLOV, Yuriy Maksimovich; PASECHNIKOV,  
Nikolay Semenovich; VISHNYAKOVA, S.V., red.; BASOVA, M.S.,  
red.; PANOV, P.A., spets. red.; MUKHINA, Ye.S., tekhn. red.

[Operating tractors in winter] Eksploatatsia traktorov v  
zimnikh usloviakh. Moskva, Biuro tekhn. informatsii, 1963.  
38 p. (MIRA 16:9)

(Tractors--Cold weather operation)

PAUSHKIN, Ya.M.; VISHNYAKOVA, T.P.; SMIRNOV, A.P.

Exothermic catalytic pyrolysis of unsaturated and aromatic hydrocarbons. Neftekhimiia 1 no.4:514-520 J1-Ag '61.  
(MIRA 16:11)

1. Institut neftekhimicheskoy i gazovoy promyshlennosti imeni I.M. Gubkina.

MAGNITSKIY, Konstantin Pavlovich. Prinimali uchastiye: GOSUDAREVA, A.G.; PANITKIN V.A.; BELYAKOVA, N.G.; KAPUSTYANSKIY, A.N.; ZHUKOV, S.N.; NIKULINA, F.F.; BALABANOV, B.G.; VISHNYAKOVA, Ye., red.; KUZNETSOVA, A., tokhn. red.

[Control of the nutrition of field and vegetable crops] Kontrol' pitaniia polevykh i ovoshchnykh kul'tur. Moskva, Mosk. rabochii, 1964. 302 p. (MIRA 17:2)

1. Nauchnyye sotrudniki laboratorii kaliya Nauchnogo instituta po udobreniyam i insektofungitsidam (for Gosudareva, Panitkin, Belyakova, Kapustyanskiy, Zhukov, Nikulina, Balabanov).

GARF, B.A., kand.tekhn.nauk [translator]; MOTULEVICH, V.P., kand.tekhn.  
nauk [translator]; BAUM, V.A., prof., red.; VISKOVA, M.V., red.;  
RYBKINA, V.P., tekhn.red.

[High-temperature solar furnaces; collection of translations]  
Solnechnye vysokotemperaturnye pechi; sbornik perevodov. Pod red.  
V.A.Bauma. Moskva, Izd-vo inostr.lit-ry, 1960. 470 p.  
(Solar furnaces) (MIRA 13:11)

VISHNYAKOVA, T. N.

Vishnyakova, T. N.

"Investigation of the Anatomical Structure and Physical-Mechanical Properties of Spruce Wood of Various Forms on Spruce-Blueberry Soils." *Min. Higher Education USSR. Leningrad Order of Lenin Forestry Engineering Academy named S. M. Kirov. Leningrad, 1955* (Dissertation for the degree of Candidate in Agricultural Sciences)

SO: *Knizhnaya letopis'* No. 27, 2 July 1955

C. A.

Polymerization of oleic acid and its methyl ester in the presence of the molecular compound of boron trifluoride with phosphoric acid. A. V. Topchiev and T. P. Vishnyakova. *Doklady Akad. Nauk S.S.S.R.* 71, 493 (1950); *C. A.* 44, 8323c. --- Pure oleic acid (vacuum-distd. at 192-3° at 1-2 mm.),  $d_4^{20}$  0.8871, acid no. 108.9, Br no. 60.1,  $n_D^{20}$  1.4401, was polymerized in the presence of compls. of  $BF_3$  with the phosphoric acids at 100°, for 600 mins. duration, catalyst amts. of 5% based on acid used.  $BF_3 \cdot H_3PO_4$  (I) was the most active catalyst,  $BF_3 \cdot H_2P_2O_7$  the least active one. Polymerizations with I were conducted at 20, 60, and 100° with catalyst amts. varying from 1 to 28%; and with 240 mins. duration. The max. degree of polymerization at 20° with 28% I was 71.70%; the Br no. fell, for 3-20% I, from 58.08 to 41.42, and the mol. wt. increased from 290 to 455. The corresponding data for 60° (1.5 to 24% I) are 56.93 to 34.85 and 308 to 529; for 100° (3-20% I) 42.15 to 29.63, and 430 to 545. With 24% I the acid no. decreased, indicating participation of the  $CO_2H$  group. In all cases only dimers (unsatd.) were obtained, as indicated by the mol. wts. Some stearic acid was found in the polymerize. To study the effect of the carboxylic H on the polymerization, analogous expts. were conducted with *Me oleic*. I again proved to be most effective. The reaction did not go at 20°, at 60°, 5-20% I, the Br no. fell from 51.18 to 40.64 and the mol. wt. increased from 323 to 448; for 100°, same I, the data are 44.83 to 36.71 and 345 to 487. K. Lus

CA

Products of polymerization of oleic acid. A. V. Topchiev and T. P. Vishnyakova. *Doklady Akad. Nauk S.S.S.R.* 71, 685-B(1957).—Polymerization of Me oleate in the presence of  $\text{BF}_3 \cdot \text{H}_2\text{PO}_4$ , followed by extr. with abs. MeOH, yielded the polymerization product ( $\text{C}_{11}\text{H}_{20}\text{O}_2$ ),  $d_4^{20}$  0.913, Br no. 27.8. Sapon. yielded ( $\text{C}_{11}\text{H}_{20}\text{O}_2$ ),  $d_4^{20}$  0.926, Br no. 29.8. Since the ozonolysis of this oleic acid dimer gave mainly  $\text{C}_9\text{H}_{16}\text{CO}_2\text{H}$  and  $\text{C}_8\text{H}_{14}\text{CO}_2\text{H}$ , as well as traces of  $\text{C}_7\text{H}_{12}\text{CO}_2\text{H}$  and high-mol. materials, which were probably homeric dicarboxylic acids,  $\text{Me}(\text{CH}_2)_n\text{CH}[\text{CO}(\text{CH}_2)_m\text{CO}_2\text{H}][\text{CH}_2)_n\text{CO}_2\text{H}]$  and its isomer (since oxidation gave caprylic and capric acids), the structure of oleic acid dimer must be:  $\text{Me}(\text{CH}_2)_9\text{CH}:\text{C}(\text{CH}_2)_9\text{CO}_2\text{H}[\text{CH}_2)_9\text{Me}](\text{CH}_2)_9\text{CO}_2\text{H}$ . G. M. Kosolapoff

191740

USSR/Chemistry - Polymerization

Sep 51

"Polymerization of Oleic Acid and Its Methyl Ester in the Presence of Molecular Compounds of Boron Fluoride and Phosphoric Acids," A. V. Topchiliev, T. P. Vishnyakova, Moscow Petroleum Inst. Izvest. I. M. Gubkin

"Zhur Obshch Khim" Vol XXI, No 9, pp 1618-1625

Comparison of catalytic action of  $H_3PO_4$ ,  $(C_2H_5)_2O$ ,  $BF_3$ ,  $HPO_3$ ,  $BF_3 \cdot H_2PO_4$ ,  $BF_3 \cdot H_4P_2O_7$ .  $2BF_3$  showed  $H_3PO_4 \cdot BF_3$  to be most active catalyst for polymerization of oleic acid. Percent of polymerization (to dimer) was greater for oleic acid than for

191740

USSR/Chemistry - Polymerization (Contd) Sep 51

methyl oleate and increased in both cases with elevation of temp. Second dimer of methyl oleate; ozonized oleic acid polymer for the 1st time. Identified products.

191740

VISHNYAKOVA, T. P.



VIBINYAKOVA, T. P.; KURASHOV, M. V.; TOPCHIEV, A. V. (Acad.); PAUSHKIN, Ya. M.

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Translation W-22513, 24 Apr 52

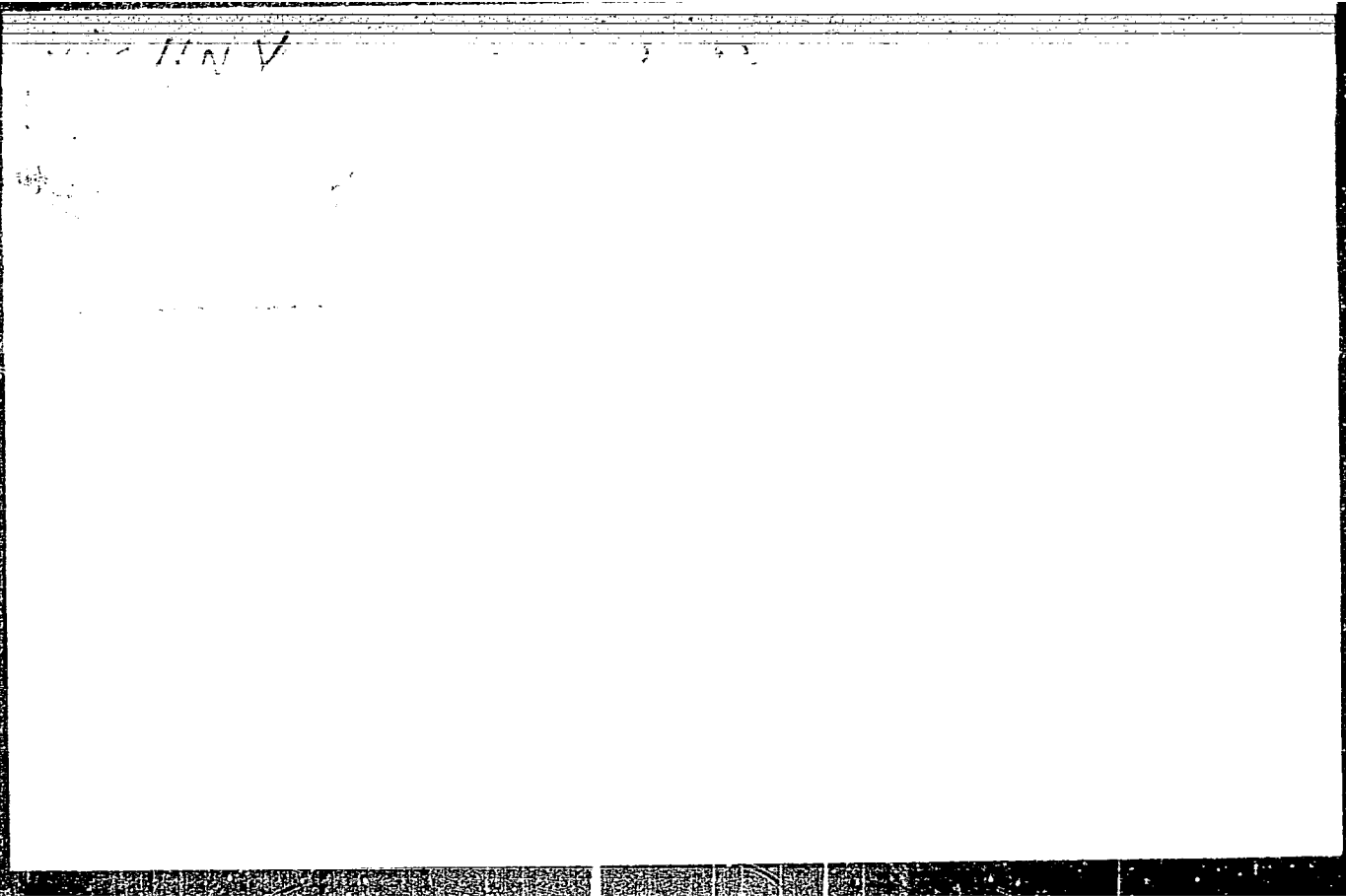
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"Principal Regularities of High-Temperature Thermal and Catalytic  
Pyrolysis of Hydrocarbons in Molten Metals and a Free Volume."

Report submitted at the Fifth World Petroleum Congress, 30 May -  
5 June 1959. New York.

23479  
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A004/A104

11.7100

AUTHORS: Paushkin, Ya. M.; Sychev, R. V.; Vishnyakova, T. P., and Shomov, A. K.

TITLE: The effect of the chemical composition and of additives on the fuel combustion in jet engines

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 9, 1961, 20, abstract 9I160 ("Sb. tr. Mezhevuz. soveshchaniya po khimii nefi, 1956", Moscow, Mosk. un-t, 1960, 293-314)

TEXT: The authors investigated in a laboratory combustion chamber with a fuel consumption of 1 gram/sec the effect of the chemical composition and additives on the fuel combustion in ram jet engines. The completeness of combustion (up to a value of 97-98%) and of the vaporized fuel exceed that of atomized fuel by 2-4% and grows with an increased content of aromatic hydrocarbons and with a decreased coefficient of air excess. When additives in quantities of 1-2% (the composition is not given) are used the scale formation is reduced from 2.5-3.5 to 1-2 m<sup>2</sup>/gram. Under pulsating combustion conditions an addition of 1% triethylaluminum cuts down the combustion time from 7-7.4 to 3.5-4 msec. The

Card 1/2

The effect of the chemical composition ...

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temperature and ignition delay of organic substances with nitric acid were investigated on a special installation. It is shown that the delay increases with a decrease in temperature. In the vapors of nitric acid spontaneously inflammable fuels (triethylamine, cyclohexane, etc.) ignite at lower temperatures and lower ignition delay than hydrocarbons, which do not ignite spontaneously with liquid nitric acid. There are 12 references. X

I. Barskiy

[Abstractor's note: Complete translation]

Card 2/2

VISHNYAKOVA, T. P.

PHASE I BOOK EXPLOITATION

SOV/3734

Paushkin, Yaroslav Mikhaylovich, and Tamara Petrovna Vishnyakova

Proizvodstvo olefinsoderzhashchikh i goryuchikh gazov iz neftyanogo syr'ya.  
(Producing Olefinic and Fuel Gases From Crude Oil) Moscow, Izd-vo  
AN SSSR, 1960. 233 p. Errata slip inserted. 1,800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut neftekhimicheskogo sinteza

Resp. Ed.: A.V. Topchiyev, Academician; Ed. of Publishing House: A.L.  
Bankvitser; Tech. Ed.: I.F. Kuz'min.

**PURPOSE:** This book is intended for technicians interested in the gasification and conversion of oil stock.

**COVERAGE:** This book deals with the gasification of heavy oil stock (fuel oil, cracking residues, and bottoms) and the conversion of natural gasoline and condensing gases into gases with propylene, ethylene, and hydrogen content. Modern units and processes for the gasification of liquid fuels are described. The authors point out Soviet interest in propylene and ethylene as raw

Card 1/6



## Producing Olefinic and Fuel (Cont.)

SOV/3734

materials for the production of ethyl alcohol and the synthesis of polymers. They also discuss the utilization of natural and waste gases for the production of synthetic products. No personalities are mentioned. References accompany each chapter.

## TABLE OF CONTENTS

Introduction	3
Ch. I. Methods of Chemically Converting Gases and Products From the Pyrolysis of Petroleum Crude	5
Production of stock for petrochemical synthesis	5
Hydrocarbon gases and hydrogen	5
Aromatic hydrocarbons (benzol, toluol, xylol)	9
Production of petrochemical products	11
Production of chlorine derivatives	11
Alkylation of benzol and its homologues and the chemical conversion of benzene homologues	14
Synthetic detergents	17
Production of plastics and synthetic rubber from petroleum crude	20
Production of alcohols from petroleum crude	23

Card 2/6

Producing Olefinic and Fuel (Cont.)	SOV/3734	
Production of sulfur, sulfuric acid and ammonia from petroleum crude		25
Bibliography		29
Ch. II. Stock for the Gasification Process		30
Bibliography		40
Ch. III. Theoretical Concepts of the High-Temperature Pyrolysis of Hydrocarbons		42
Thermodynamic concepts and mechanism of the high-temperature pyrolysis of hydrocarbons		42
Calculating the rate of chemical reactions taking place, in a stream during cracking		59
Methods of calculating gas composition under equilibrium conditions		62
Bibliography		78
Ch. IV. Pyrolysis of Hydrocarbon Stock and Tars		80
Pyrolysis of light stock (ethane, propane, butane, and natural gasoline)		80
Card 3/6		

## Producing Olefinic and Fuel (Cont.)

SOV/3734

Pyrolysis of distillate petroleum fractions (gas oils)	92
Dynamics of the change in the composition of the reaction products of the gasification process	97
Gasification of the n-cetane fraction	97
Gasification of $\alpha$ -methyl decalin	101
Gasification of the 200-300° C gas-oil fraction	102
Gasification of fuel oils and cracking residues	103
Pyrolysis of shale oils	126
Comparative data on the pyrolysis of petroleum and shale oils	130
Bibliography	133
Ch. V. Modern Installations for the Gasification of Liquid Fuels	134
Gasification installations for the production of domestic and industrial gases	134
Noncatalytic processes for the gasification of petroleum crude	135
The Pacific Coast process	136
The Jones process	136
The Hall process	138
The Hall process using duplex generator	147
Processes for the autothermal pyrolysis of hydrocarbons using air or steam-air blast	149
Installations for the autothermal pyrolysis of light hydrocarbons	150

Card 4/6

Producing Olefinic and Fuel (Cont.)

SOV/3734

The Dayton-Faber process	150
The Cooper-Gashe process	154
The Heim process	158
The Otto Company process	159
Catalytic gasification processes	171
Processes for the autothermal gasification of petroleum crude in the presence of a catalyst	172
The Sea Gas process	173
The ONIA-GEGI process	175
The ONIA-GEGI-DEMAG process	185
Gasification Installations for Producing Hydrogen	187
The Texaco process	187
The iron-steam method	191
The Otto process	193
Installations for the Production of Synthesis Gas	193
The Hercules Powder process	195
The ONIA process	196
The Standard Oil Process	198
Carburetion of water gas with gases obtained from fuel oils	202

Card 5/6