

KOTOV, M.P.

USSR/Chemical Technology. Chemical Products and Their Application--Synthetic fibers. I-26

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10090

Author : Yudin, A. V. and Kotov, M. P.  
Inst : Kiev Technical Institute of the Light Industry  
Title : Thermal Stability of Artificial Protein Fibers from Gelatin

Orig Pub: Tr. Kievsk. tekhnol. in-ta legkoy prom-sti, 1955 No 7, 3-18

Abstract: Artificial protein fibers prepared from the glutin-gelatin fraction can to a certain degree be considered as fibers of the collagen type, since the molecular chains forming the structure of both the collagen fibers and the above-mentioned protein fibers are related in structure, amino acid and elementary composition. The fibers used in the investigation were formed from a 40%

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USSR/Chemical Technology. Chemical Products and Their Application--Synthetic fibers. APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410017-3

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10090

Abstract: Aqueous protein solution; both plasticized and unplasticized as well as chromed fibers were studied. The thermal stability of the fibers has been determined together with the dependence of the melting temperature, flow point, and deformation of the fibers during polymerization on various factors. The introduction of a plasticizer (triethanolaminooleate) produces a lowering of the melting temperature, lowers the flow point, and decreases the maximum shrinkage. It has been established that the intermolecular bonds formed as a result of the chrome dyeing are stable at high temperatures up to the thermal decomposition of the protein (250-260°).

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KOTOV, M.P.

USSR/Chemical Technology. Chemical Products and Their Application--Synthetic fibers.

KOTOV, M.P.

About the book of A.V.Dumanskii "Bibliographic outline of the development of national colloidal chemistry." Reviewed by M.P.Kotov. Koll.zhur.18 no.4:511-512 J1-Ag '56. (MLBA 9:10)  
(Bibliography--Colloids) (Dumanskii, Anton Vladimirovich, 1880-)

KOTOV, M.P.

TURCHENKO, Yakov Ivanovich; KOTOV, M.P., prof., otvetstvennyy red.;  
SKVIRSKAYA, M.P., red.; KHOKHANOVSKAYA, T.I., tekhn.red.

[Main lines of the development of general, inorganic and physical chemistry in the Ukraine (the 19th century and the first half of the 20th century)]. Osnovnye puti razvitiia obshchei, neorganicheskoi i fizicheskoi khimii na Ukraine (XIX st. i pervaya polovina XX st.). Kiev, Izd-vo Kievskogo gos.univ.im.T.G.Shevchenko, 1957. 433 p. (MIRA 10:12)

(Ukraine--Chemistry--History)

*Kozlov, M.P.*

CHERNOV, Nikolay Vladimirovich, prof.; ARONINA, Yu.N., dots.; GAYDAROV, L.P., dots.; STRAKHOV, I.P., prof.; SHESTAKOVA, I.S., prof.; ~~KOZLOV, M.P.~~, prof., retsenzent; MIKHAYLOV, A.N., prof., retsenzent; RAZUMOVSKAYA, Ye.V., red.; KNAKNIN, M.T., tekhn.red.

[Chemistry of the leather and fur industries] Khimia kozhevennogo i mekhovogo proizvodstva. Pod boshchei red. N.V.Chernova. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1957. 456 p.  
(Fur) (Chemistry, Technical) (MIRA 11:3)  
(Leather industry)

KOTOV, M.P., prof.

Nature of the wear and wear resistance of rubber and leather.  
Izv. vys. ucheb.zav.; tekhnolog. prom. no.1:11-19 '58. (MIRA 11:6)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
(Leather research) (Rubber research)

LEDNEVA, A.M., inzh.; KOTOV, M.P., prof.

Tanning artificial protein fibers with solutions of sulfate-sulfite chromium complexes. Izv. vys.ucheb. zav.; tekhn.leg. prom. no.2:14-20 '58. (MIRA 11:6)

1.Kiyevskiy tekhnologicheskoy institut legkoy promyshlennosti.  
(Tanning) (Chromium compounds) (Fibers)

ZHILA, G.V., kand.khim.nauk; KOTOV, M.P., prof.

Effect of the concentration, duration, and temperature during  
thermolysis on the changes in specific viscosity of 0,5 o/o gelatin  
solution. Izv. vys.ucheb. zav.; tekhnolog. prom. no.2:21-25 '58.  
(MIRA 11:6)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
(Gelatin--Testing) (Thermal analysis)

GORONOVSKAYA, M.A., inzh.; KOTOV, M.P., prof.

Investigating elastic-plastic properties of chrome-tanned skins.  
Izv. vys.ucheb. zav.; tekhn.leg. prom. no.2:26-31 '58. (MIRA 11:6)

1.Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.  
(Hides and skins--Testing)



YUDIN, A.V., kand.khim.nauk; KOTOV, M.P., prof.; BOGDANOV, L.A., inzh.

Mechanical properties and water resistance of complex tanned  
protein fibers. Izv. vys.ucheb.zav.; tekhnolog. prom. no.2:32-39  
'58. (MIRA 11:6)

1.Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.  
(Tanning) (Fibers--Testing)

SHKARANDA, I.T., kand.tekhn.nauk; KOTOV, M.P., prof.; CHECHENEV, N.I.,  
kand.tekhn.nauk; MIKHANOSHA, Ye.S., inzh.

Making high-viscous gelatins of chrome-tanned shavings. Izv. vys.  
ucheb. zav.; tekhn.prom. no.2:40-46 '58. (MIRA 11:6)

1.Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
(Gelatin)

YUDIN, A.V., kand.khim.nauk; ~~KOTOV, M.P.~~, prof.; ZAYDES, A.L., inzh.

Radiological analysis of protein fibers obtained from glutin fractions of collagen. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.3:25-29 '58. (MIRA 11:10)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti. (Collagen) (Fibers--Testing) (Radiology, Industrial)

ZHILA, G.V., kand. khim. nauk; KOTOV, M.P., prof.

Investigating assymetry changes in gelatin molecules caused by the  
action of aqueous solutions of urea. Izv. vys.ucheb.zav.; tekhnolog.  
prom. no.4:14-21 '58. (MIRA 11:12)

1.Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.  
(Gelatin) (Urea)

KOTOV, M.P., prof.

Nature of the wear and wear-resistance processes of rubber and leather in shoes. Izv.vys.ucheb.zav.; tekhn.prom. no.6:18-25 '58. (MIRA 12:4)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti. (Boots and shoes--Testing)

SOV/58-59-5-10500

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 96 (USSR)

AUTHORS: Chuprina, L.F., Kotov, M.P.

TITLE: Technique for the Study of the Structural-Mechanical Properties of High Polymers by the Stretching Method

PERIODICAL: Tr. Kiyevsk. tekhnol. in-ta legkoy prom-sti, 1958, Nr 10, pp 46 - 49

ABSTRACT: An apparatus is described for studying the structural-mechanical properties of high polymers in films. This apparatus is a modification of that designed by S.Ya. Veyler, V.I. Likhtman, and P.A. Rebinder (Kolloidn. zh., 1949, Vol 11, Nr 8). In contrast to the latter, where deformation is effected by means of torsion, in the present apparatus the investigated sample is subjected to deformation by stretching. The elongation of the sample is effected with the aid of a lifting stage and registered by a microscope, which is displaced together with the stage. The stress in the sample is measured with the aid of a spring micro-dynamometer. The stretching of the spring is determined by the difference between the height of displacement of the lifting stage and the elongation of the sample. The apparatus makes it possible to study the kinetics of

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Technique for the Study of the Structural-Mechanical Properties of High Polymers by the Stretching Method

deformation in the case of a constant external force acting upon the sample (to this end the spring is made to stretch steadily in proportion to the deformation of the sample by manually twisting the screw of the lifting stage), as well as to study stress relaxation in the sample while constant elongation is maintained. The authors provide the curve depicting the variation of deformation with time under constant stress in the case of natural rubber.

A.V. Sidorovich

Card 2/2

CHERNOV, Nikolay Vladimirovich; ARONINA, Yuliya Naumovna; GAYDAROV, Leonid Petrovich; GOLOVTEYEVA, Alevtina Alekseyevna; STRAKHOV, Ivan Pavlovich; SHESTAKOVA, Irina Sergeyevna; YEGORKIN, N.I., prof., retsenezent; KOTOY, M.P., prof., retsenezent; PLEMYANNIKOV, M.N., red.; KHAKNIN, M.T., tekhn.red.

[Leather and fur technology] Tekhnologiya kozhi i mekha.  
Pod obshchei red. N.V.Chernova. Moskva, Gos.nauchno-tekhn.  
izd-vo lit-ry po legkoi promyshl., 1959. 719 p. (MIRA 13:2)

1. Kafedra tekhnologii kozhi i mekha Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti (for Chernov, Aronina, Gaydarov, Golovteyeva, Strakhov, Shestakova).  
(Leather) (Fur)

KOTOV, M.P., prof.; BULANZHE, I.N., dotsent, kand.khim.nauk

Optical method of investigating the violet modification of chromium chloride complexes. Izv.vys.uceb.zav.; tekhn.prom. no.2:47-53 '59. (MIRA 12:10)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti. (Chemistry, Technical) (Chromium chloride)



ANOKHIN, V.V., inzh.; KOTOV, M.P., prof.

Investigating deformation relaxation of collagen fiber models.

Izv.vys.ucheb.zav.; tekhnolog.prom. no.5:52-58 '59.

(MIRA 13:4)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.

Rekomandovana kafedroy tekhnologii iskusstvennogo volokna.

(Collagen)

AFANAS'YEV, O.O. [Afnas'iev, O.O.]; GORVITS, S.M. [Horvits, S.M.];  
IGNATOVA, L.P. [Ihnatova, L.P.]; KOROY, M.P.; NOVIK, G.B.  
[Novyk, H.B.]; ORLOV, I.V.; PHYSAKHZOH, L.B.; ROZENMAN, G.S.  
[Rozenman, H.S.]; SKATERNY, V.A.; TSITRIN, L.I.; CHECHENEV,  
M.I. [Checheniev, M.I.]; SHOSTAK, S.I.; NAZARENKO, N., red.;  
GORKAVENKO, L. [Horkavenko, L.], tekhn.red.

[Light industry of the Ukraine] Lehka promyslovist' Ukrainy.  
Kyiv, Derzh.vyd-vo tekhn.lit-ry URSR, 1960. 197 p.

(MIRA 14:4)

(Ukraine--Industries)

ZHILA, G.V., kand.khim.nauk; PAS'KO, S.P., inzh.; KOTOV, M.P., prof.

Tanning goatskins with tanning extracts manufactured with the use of naphthalene sulphonic acid as reducer. Report No.1. Izv. vys.ucheb.zav.; tekhn.prom. no.3:96-103 '60. (MIRA 13:8)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.  
(Tanning)

ANOKHIN, V.V., inzh.; KOTOV, M.P., prof.

Invariant characteristics of structural and mechanical properties of products of the chemical processing of gelatin fibers. Izv.vys.ucheb. zav.; tekhn.prom. no.5:30-39 '60. (MIRA 13:11)

1. Kiyevskiy tekhnologicheskoy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.  
(Gelatin)

KOTOV, M.P., prof.

Mechanism of the drum stuffing of Russian leather With melted  
stuffing. Izv.vys.ucheb.zav.; tekhn.prom. no.5:70-76 '61.  
(MIRA 14:12)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.  
(Leather)

DUKHOTA, V.A., inzh.; DUKHOTA, V.F., inzh.; SHKARANDA, I.T., kand.tekhn.  
nauk, dotsent; KOTOV, M.P., prof.

Utilization of chromium recovered from chrome liquor wastes. Izv.  
vys.ucheb.zav.; tekhn.prom. no.5:55-62 '61. (MIRA 14:12)

1. Kiyevskiy tekhnologicheskoy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.  
(Tanning)  
(Industrial wastes)  
(Chromium)

KOTOV, M.P., prof.

Reducing the surface size losses of chrome tanned leather occurring during the first drying. Report No.1. Izv.vys.ucheb.zav.; tekhn.lag.prom. no.1:79-90 '63. (MIRA 16:3)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.  
(Tanning)

KOTOV, M.P., prof.

Reducing the surface losses of chrome tanned leather in the first drying. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.3: 42-43 '63. (MIRA 16:7)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti. Rekomendovana kafedroy tekhnologii kozhi. (Tanning)



SOROKINA, N.S., kand. khimich. nauk, dotsent; BOGDANOV, L.A., inzh.;  
ANAN'YEVA, L.A., inzh.; KHARLASHKIN, V.I., inzh.; ZHILA, T.I.,  
inzh.; PIVOVAROVA, T.V., inzh.; KOTOV, M.P., prof.

Some problems in the cyanoethylation, carboxylation, alkylation  
and acylation of gelatin. Izv. vys. ucheb. zav.; tekhn. leg.  
prom. no.3:70-75 '63. (MIRA 16:7)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.  
(Gelatin) (Polymerization)

SHKARANDA, I.T., kand. tekhn. nauk, dotsent; KULINENKO, L.A., inzh.;  
KOTOV, M.P., prof.

Utilization of chromium obtained from waste chromium liquors.  
Izv. vys. ucheb. zav.; tekhn. leg. prem. no.3256-61 '63.  
(MIRA 16:7)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii gozhi.  
(Chromium) (industrial wastes)

KOTOV, M.P., prof.

Reducing the losses in surface dimensions of chrome tanned leather during the first drying. Report No.2: Fixation of the leather structure. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.2:83-92 '63. (MIRA 16:10)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti. Rekomendovana kafedroy tekhnologii kozhi.

SHKARANDA, I.T., kand. tekhn. nauk, dotsent; KOTOV, M.P., prof.;  
ERYKALOVA, I.N., inzh.

Investigating the counterflow tanning method. Izv. vys. ucheb.  
zav.; tekhn. leg. prom. no.2:103-109 '63. (MIRA 16:10)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii kozhi.

STRAKHOV, Ivan Pavlovich, prof.; ARONINA, Yuliya Naumovna, dots.;  
GAYDAROV, Leonid Petrovich, dots.; GOLOVTEYEVA,  
Alevtina Alekseyevna, dots.; CHERNOV, Nikolay Vladimirovich,  
prof.; SHESTAKOVA, Irina Sergeevna, prof.; KOTOV, M.P.,  
prof., retsenzent; KLOCHKOV, S.A., inzh., retsenzent;  
GRACHEVA, A.V., red.; PLEMYANNIKOV, M.N., red.

[Chemistry and technology of leather and fur] Khimiia i  
tekhnologiiia kozhi i mekha. Moskva, Legkaii industriia,  
1964. 621 p. (MIRA 18:2)

L 63838-65 EWI(m)/BPF(G)/ENP(Y)/ENP(L)/T RW/RM

ACCESSION NR: AP502051A

UR/0723/65/000/004/0040/0045 43

AUTHORS: Kotov, M. P. (Professor); Sorokina, N. S. (Candidate of chemical sciences, docent); Marchenko, L. N. (Engineer); Chernyshova, T. Ye. (Candidate of chemical sciences)

TITLE: Changes in physical and mechanical properties of mixed polyamide-polyester resins with various component ratios

SOURCE: IVUZ, Tekhnologiya legkoy promyshlennosti, no. 4, 1965, 40-45

TOPIC TAGS: resin, polyamide, adhesion, mechanical stress

ABSTRACT: This study presents data on the mechanical strength and adhesive properties of the resultant product when various amounts of pentapthalate (phthalic anhydride : pentaerythritol = 1 : 1) or technical alkyl resin (brand 1350, first group) are introduced into polyamide resin AK-50/50. The mixture was prepared in a mutual solvent at 180C in a stream of nitrogen. The films formed from 20% solution of this composition in ethyl alcohol were carefully dried at a constant relative humidity until the solvent was completely removed. It was found that introduction of 5 to 10% (by weight) of polyester results in lowering the melting temperature and increases the cohesive strength of the film, while the adhesive ability of the polyamide-polyester composition increases with addition of

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L 63838-65

ACCESSION NR: AP5020514

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40-50% of polyesters. Strength of the seam formed (either by means of film or by melt fusion) is practically the same. The improved mechanical properties and adhesive strength of the polyester-containing resins are explained by the formation of cross- and three-dimensional linkages between polymeric chains. Orig. art. has: 2 tables and 6 figures.

ASSOCIATION: Kiyevskiy tekhnologicheskyy institut legkoy promyshlennosti (Kiev Technological Institute of Light Industry) *11/55*

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NO REF SOV: 004

OTHER: 000

*11/55*  
Card 2/2

I 21727-66 EWT(m)/EWP(v)/EWP(j)/T LJP(a) LW/RM

Acc No AP6005403

(A)

SOURCE CODE: UR/0323/65/000/005/0039/0046

AUTHOR: Marchenko, L. N. (Engineer); Kotov, M. P. (Professor); Sorokina, N. S. (Candidate of technical sciences); Chernysheva, T. Ye. (Candidate of chemical sciences)

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B

ORG: Kiev Technological Institute of Light Industry (Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti)

TITLE: Investigation of the physical and mechanical properties of cements with polyamide, polyester, and phenolformaldehyde resin bases

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 5, 1965, 39-46

TOPIC TAGS: cement, polyamide resin, phenolformaldehyde resin, polyester, elasticity, adhesive, adhesion

15

ABSTRACT: New thermoplastic, rapid-setting, and elastic adhesive resins have been obtained with polyamide, polyester, and phenol-formaldehyde resin bases. These cement compositions (KTILOL) can be used for obtaining an adhesive-reinforcing seam for mechanized adhesive joining of parts of footwear and clothing. The effect was studied of the phenolformaldehyde resins on the properties of KTILOL cement. The effects of various polyester resins on the strength and

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ACC NR: AP6005403

elasticity of adhesive joints was analyzed. Compositions based on polyether resins having a 1:1 molar ratio of anhydride and alcohol with the acid number before the moment of gelatinization have greater adhesive-joint strength and less adhesive-seam thickness. Orig. art. has: 5 figures and 4 tables. [Based on author's conclusions] [NT]

SUB CODE: 11/      SUBM DATE: 18Jan65/      ORIG REF: 010/      OTH REF: 003/

Card 2/2 *MGS*

ACC NR: AP6029270 (A) SOURCE CODE: UR/0323/66/000/003/0038/0042

AUTHOR: Kotov, M. P. (Doctor of Technical Sciences, Professor); Sorokina, N. S. (Candidate of Chemical Sciences, Docent); Kharlashkin, V. I. (Engineer); Kuz'mina, V. I. (Engineer); Petrova, T. A. (Engineer); Bulgakov, P. M. (Engineer) 27 26

ORG: Kiev Technological Institute for Light Industry (Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti) 8 15

TITLE: Technological conditions for preparing and applying thermoplastic adhesive KTILOL-11 in beading parts of shoe uppers

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 3, 1966, 38-42

TOPIC TAGS: thermoplastic material, footwear, adhesive, water repellent lubricant / KTILOL-11 ADHESIVE

ABSTRACT: The new adhesive KTILOL-11 is prepared by mixing and heating to 190-200°C 50% polyamide 54 with 18-30% modified alkyd, 4-8% plasticizer KPT and 27-18% novolac type phenol-formaldehyde resin. The alkyd is previously modified by heating, with removal of water, to an acid number not over 30 and a melting point not below 60°. Such compositions containing no more than 24% alkyd and 6% plasticizer are suitable for making adhesive coated strands which can be coiled without sticking. The adhesive-coated threads of 1.0-1.2 x 10<sup>-3</sup> m diameter were made by passing cotton thread through the molten adhesive and through a die. Various waterproofing compositions were tried

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L 08137-67

ACC NR: AP6029270 /

to keep the threads from sticking during storage. A 5% solution of stearic acid in mixed solvent (5 parts by weight mineral oil, 95 kerosene) prevented sticking for two days; coating with mineral oil alone also helped somewhat. Other precautions in making the adhesive-coated strands: the resin composition should not be overheated during preparation; sufficient time for cooling the adhesive on the thread is needed-- the take-up spool should be not less than 2 meters from the die; optimum rate is 20-25 rev/min. L. N. Zavel'gel'skii, Senior Engineer of the "Burevestnik" factory took part in the work. Orig. art. has: 2 tables. .

SUB CODE: 11, 13/ SUBM DATE: '20Jan66/ ORIG REF: 004

Card 2/2 nst

ACC NR: AP7004042 (A) SOURCE CODE: UR/0323/66/000/005/0019/0023

AUTHOR: Marchenko, L. N. (Engineer); Sorokina, N. S. (Candidate of chemical sciences; Docent); Kotov, M. P. (Doctor of technical sciences; Professor)

ORG: Kiev Technological Institute for the Light Industry (Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti)

TITLE: Properties of copolymerized polyamide and phenolformaldehyde resins

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 5, 1966, 19-23

TOPIC TAGS: resin, polyamide, phenolformaldehyde, polymer, copolymerization, polyamide resin, phenolformaldehyde resin, cement, glue

ABSTRACT: Polyamide resins modified with various amounts of phenolformaldehyde novolak resins were investigated for use in glues for various materials including leather. It was shown that in glues containing 5-10% phenolformaldehyde resin, the property-composition curves pass a maximum which is explained as the chemical interaction of compounds followed by the formation of a branched polymer. Orig. art. has: 5 figures and 2 tables. [AM]

SUB CODE: 11/SUBM DATE: 25Nov65/ORIG REF: 007/OTH REF: 002/

Card 1/1

KOTOV, N.

Applying uniform norms in lumbering camps. Sots. trud 8 no.8:  
119-123 Ag '63. (MIRA 16:8)

1. Nachal'nik otdela truda i zarabotnoy platy Lobvinskogo  
lesopromyshlennogo khozyaystva.  
(Lumbering--Production standards)

KOTOV, N.; KASNAKOV, Iv.; BOTEV, Z.

A case of total atelectasis of the right lung after appendectomy. *Suvrem. med.*, Sofia 9 no.3:90-93 1958.

1. Iz bolnitsata na MVR- Plovdiv (Nachalnik: Penkov)  
(ATELECTASIS, etiol. & pathogen.  
right, after appendectomy (Bul))  
(APPENDIX, surg.  
postop. right atelectasis (Bul))

KOTCOV, N.

25(3) PHASE I BOOK EXPLOITATION SOV/AS72

USSR. Upravleniye po organizatsii i mekhanizatsii ucheta  
Mekhanizatsiya ucheta i vychislitel'nykh robot na promyshlennom pred-  
priyatii] sbornik statei (Mechanization of Accounting and Comput-  
ing Operations in an Industrial Establishment. Collection of Arti-  
cles) Moscow, Gosstatizdat, 1957. 125 p. 5,100 copies printed.  
Additional Sponsoring Agency: USSR Tsentral'noye statisticheskoye  
upravleniye.

Ed.: V.A. Ustiyants; Tech. Ed.: A.A. Koprulova.

PURPOSE: This book is intended for technical personnel servicing  
computers, tabulators, punch card machines, etc., and for those  
using this equipment.

COVERAGE: This collection of articles reviews various aspects of  
mechanical invoicing, use of key-operated calculators in account-  
ing, functions of interplant clearing houses, accounting of state  
taxes using business machines and computers, and operation of  
punch card machines. Technical features of computers and calcu-  
lating are discussed and some measures to improve reliability are  
outlined. No personalities are mentioned. There are 8 Soviet  
references.

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AVAILABLE: Library of Congress (RF5679.RB)

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KOTOV, H.

On their own. Za rul. 15 no.4:6-7 Ap '57.

(MLRA 10:6)

(Zhitomir--Juvenile automobile drivers)

KOTOV, N., polkovnik; KRAVCHUN, N., kapitan 2-go ranga

"Pedagogy; studies on the theory of and practice in the education  
and training of Soviet soldiers" by A.G.Bazanov. Reviewed by  
n.Kotov, N. Kravchun. Komm.Vooruzh.Sil 1 no.16:89-92 Ag '61.  
(MIRA 14:7)

(Military education)  
(Bazano, A.G.)



MITYUSHIN, N.A., kand.tekhn.nauk; KOTOV, N.F., kand.tekhn.nauk

Improving the design of bearing wooden roof elements and  
prolonging their life. Stroi.prom. 27 no.6:6-9 Je '49.  
(MIRA 13:2)

1. BTP Tsentral'nogo nauchno-issledovatel'skogo instituta promy-  
shlennykh sooruzheniy.  
(Roofs) (Building, Wooden)

KOTOV, N.F.

Using the results of radar studies of precipitation to improve  
the work of storm information stations. Trudy TSAO no.20:17-  
25 '58. (MIRA 12:1)

(Radar meteorology)

KOTOV, N.F.; NIKOLAYEV, P.N.

Radar technique of observing showers and storms. Trudy TSAO  
no.20:46-57 '58. (MIRA 12:1)  
(Radar meteorology)

KOTOV, N. I.

TABLE I BOOK REPRODUCTION  
Sov/NIT  
Sov/2-2-101

Language: *classy gofistobnyu observatorya*  
Voprosy fiziki oblakov (Problems in the Physics of Clouds) Leningrad, Gidrometcentr-izdat, 1960. 102 p. (Series: Izv. Trudy VOP. 102). Extra slip inserted. 1,150 copies printed.

Additional Sponsoring Agency: USSR, Gidromet Tsentr, Gidrometeorologicheskoye nauchnoye issledovaniye (Hydro-Meteorological Research Institute), Moscow, U.S.S.R. (Soviet papers) in: G. S. Shteynberg, ed., *Problemy fiziki oblakov i meteorologii* (Problems of Physics and Meteorology); 82 (Gosizdatkniga) V. 2, 1960, pp. 1-102. 10,000 copies printed.

Purpose: The publication is intended for the scientific workers in meteorology and aerology, as well as for graduate students in these fields.

Content: This is a collection of 6 articles published as No. 102 of the *Problemy fiziki oblakov* (Problems in the Physics of Clouds) Leningrad, Gidrometcentr-izdat, 1960. Individual articles are concerned with convective clouds and their water characteristics, the microstructure of convective clouds, water characteristics of thunderstorms, the process of the optimum ratio water vapor characteristics of thunderstorms, and precipitation. References accompany each article.

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Beljarsky, Ya. S., and M. P. Chirskova. Some Characteristics of the Conditions of the Atmosphere During the Formation of Cumulus and Cumulonimbus Clouds	3
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Rizdakov, G. T., and N. A. Eliseich. Characteristics of the Microstructure of Supercooled Clouds	50
Rizdakov, G. T., and Yu. B. Pletskan. On the Problem of Method in Determining the Characteristics of the Distribution of Droplet Sizes in Clouds	58
Kotov, N. I. Water Characteristics of Cumulonimbus and Thunderstorms	63
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24/24/101  
9-9-60

(4)

KOTOV, N.F.

Radar characteristics of showers and thunderstorms. Trudy  
GGO no.102:63-93 '60. (MIRA 13:6)  
(Radar meteorology) (Rain and rainfall)  
(Thunderstorms)

KOTOV, N.F.

Establishing the distinctive characteristics of showers and  
thunderstorms in radar observations. Trudy GGO no.120 '61.  
(MIRA 14:8)

(Radar meteorology)  
(Thunderstorms)  
(Rain and rainfall)

KOTOV, N.F.

New code for the network of radar storm service stations.  
Trudy GGO no.120:3-14 '61. (MIRA 14:8)  
(Radar meteorology)  
(Cipher and telegraph codes--Meteorology)

APPROVED FOR RELEASE: 08/23/2000 [KOTOV, N.F.] CIA-RDP86-00513R000825410017-

Some results of radar observations on the nature of motion of  
the seats of origin of showers and thunderstorms. Trudy  
GGO no.120:45-41 '61. (MIRA 14:8)  
(Radar meteorology)  
(Rain and rainfall)  
(Thunderstorms)

KOTOV, N.F.

Method for processing radar data of storm-warning stations. Trudy  
GGO no.12883-22 '62. (MIRA 16:2)  
(Radar meteorology)



KOTOV, N.F.; SMOLKINA, T.I.

Maps of the anomalies of shower activity in Leningrad Province.  
Trudy GGO no.128:35-56 '62. (MIRA 16:2)  
(Leningrad Province—Rain and rainfall)  
(Leningrad Province—Meteorology—Charts, diagrams, etc.)

KOTOV, N.F.

Radar measurements of the amount of storm rainfall over  
large areas. Trudy GGO no.159:3-34 '64.

(MIRA 18:12)

I 21974-66 EWT(1)/FCC/FSS-2 BB/GW/WR/JIT(CZ)

UR/2531/64/000/159/0003/0034

ACC NR: AT6008120

AUTHOR: Kotov, N.F. (Candidate of Physico-Mathematical Sciences)

ORG: None

TITLE: Radar determination of shower precipitation quantity over large areas

SOURCE: Leningrad, Glavnaya geofizicheskaya observatoriya. Trudy, no. 159, 1964.  
Voprosy radiometeorologii (Problems in radiometeorology), 3-34

TOPIC TAGS: ~~rainfall, shower, rainfall quantity, rainfall quantity measurement,~~  
~~precipitation~~ *meteorologic observation, meteorologic radar atmospheric*

ABSTRACT: This paper describes and develops radar techniques of shower and rain precipitation measurement over large areas. The method is based upon radar data on reflectivity and area of precipitation activity. Interest to this approach stems from the shortcomings of the conventional meteorological method using networks of local rain-catching recorders. These shortcomings are rooted in the spacial statistical independence of seasonal shower yields at distances of a few tens of kilometers. Diurnal precipitation yields become practically independent at distances of a few kilometers. Therefore, proper evaluation of shower yields (which comprise some 30% of the rainfall) by conventional means requires an exorbitant number of recording stations (e.g. one for every 5 - 10 km<sup>2</sup>). In the radar method, one station can gather shower and rain data

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ACC NR: AT6008120

over an area of several tens of thousands kilometers square. Feasibility of an adequate precision of measurement requires a reliable relation between precipitation process reflectivity,  $z$ , and its intensity,  $I$ . This paper develops optimized expressions for the relation between  $z$  and  $I$ , in the form

$$z = A.I.^\alpha \quad (1)$$

taking account of the incomplete sphericity of raindrops. Solving for  $I$ , and estimating the precipitation area from the radar PPI scope data with the added use of shower activity models etc leads to useable methodology. The deviation between conventional and radar method results is under 20%. Measurements can be made over an area enclosed by a 100 km radius from the station, for shower areas up to 78 km<sup>2</sup>. For practical purposes, the sum of areas of shower activity having a sufficient reflectivity threshold can be used as the basic quantity for the estimate of shower precipitation and distribution in time and over the territory. Several applications are listed and hints for future development given. Orig. art. has: 12 figures, 59 formulas and 8 tables.

SUB CODE: 04, 17    SUBM DATE: 00    ORIG REF: 000    OTH REF: 007

Card 2/2 nst

KOTOV, N. I.

20667 Mityushin, N.A. i Kotov, N. I. Put. usovershenstvovaniya i povysheniya  
dolgovechnosti derevyanykh nesushchikh konstruktsiy v pokrytiyakh. Stroit. prom-st',  
1949, No. 6, s. 6-9

SO: LETOPIS ZHURNAL STROY - Vol. 28, Moskva, 1949

KUTMAN, B.L., inzh.; KOTOV, N.I.

Investigating a new design for a controlling device for draft  
and blowing machines. Teploenergetika no.4:29-33 Ap '60.  
(MIRA 13:8)

1. Upravleniye energeticheskoy promyshlennosti Sovnarkhoza  
Permskogo ekonomicheskogo administrativnogo rayona.  
(Fans, Mechanical)

Автомат

BEIDA, N.I., inzhener; KOTOV, N.K.; BORISENKO, G.P.; MAL'TSEVA, Ye.M.

Effect of technological factors in rolling on the quality of bessemer  
steel rails. Stal' 16 no.10:897-900 O '56. (MLRA 10:9)

1. Zavod imeni Petrovskogo.  
(Rolling (Metalwork)) (Railroads--Rails)

KOTOV, N.K.

AFANAS'YEV, S.G., kand.tekhn.nauk; BEDA, N.I., inzh.; MITROFANOV, A.A.,  
RYZHKOV, P.Ya., inzh.; KOTOV, N.K., inzh.; FILIPPOV, S.N. [deceased].  
inzh.

Quality of converter rimmed steel produced with an oxygen blast.  
Kislород 10 no.4:5-13 '57. (MIRA 11:2)  
(Steel)



AUTHORS: Beda, N.I. and Kotov, N.K., Engineers

SOV/133-58-6-14/33

TITLE: In the Plant imeni Petrovskiy (Na zavode im. Petrovskogo)

PERIODICAL: Stal', 1958, Nr 6, pp 518 - 519 (USSR).

ABSTRACT: 1) An improvement in the technology of the converter process with top blowing with technically pure oxygen in order to increase the yield of good metal and stability of a basic lining. It was established during an investigation of 1 030 experimental heats that during blowing of mild converter rimming steel, the process can be carried out without the removal of slag. The sulphur and phosphorous content do not increase, the yield of metal increases and the duration of heat is decreased by 2.5 to 3 minutes. The stability of the chrome-magnesite lining is not affected. The results of experimental heats (336 heats) in which additions of iron ore in the course of blowing instead of water were made, indicated that the yield of metal increases (due to the reduction of ore) and the spraying out of metal decreases. The proportion of overheated melts (temperature above 1 630 °C) does not increase but the proportion of heats with the content of sulphur above 0.051% increases. The use of ore-lime briquettes was also tested. The yield of metal increases by 1 - 1.4%, the duration

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In the Plant imeni Petrovskiy

SCV/133-58-6-14/33

of heat decreases by 2 min., the content of sulphur and phosphorus remains unchanged, the proportion of overheated heats decreases by a factor of 2. The experiments are being continued. An investigation of the dependence of the sulphur content in blown metal on the sulphur content of pig established that in order to obtain sulphur in steel not higher than 0.04%, the pig iron should contain no more than 0.05% S, not less than 1.5% Mn and not more than 0.6 - 0.7% Si. As a result of these investigations, the output of the melting shop increased by 4% and mean life of lining increased 2-5 times. The costs of production of steel decreased by 30%.

2) An investigation of the quality of oxygen-blown converter metal in order to widen the field of its application.

The production of oxygen-blown converter metal in 1957 amounted to 45% of the total production of steel on works. In chemical composition, mechanical and technological properties, the metal completely corresponded to appropriate standards (ChMTU 5567-56, GOST 380-50, GOST 4231-48, etc). In the content of gases (nitrogen, oxygen and hydrogen), macro and micro-structure, weldability, impact strength at normal, after artificial ageing at + 20 °C and at negative temperatures

Card 2/4

In the Plant imeni Petrovskiy

SOV/133-58-6-14/33

(0 °, -20 °, -40 ° and -60 °C) rolled products from oxygen-blown converter metal were practically the same as from a corresponding open-hearth metal. On the basis of the investigation of properties of the oxygen-blown converter metal, new standards were developed and approved for rolled semis for telegraph wire from steel KTO9 (ChMTU-TsNIChM 1-57 instead of GOST 5567-56 and ChMTU-TsNIChM 2-57) and for crane mills from steel K62 (ChMTU-TsNIChM 3-57). The requirements in these standards do not differ from those for open-hearth metal.

3) An investigation of the durability of refractories and the development of technology of production of refractory bricks for lining top-blown converters operating with oxygen blast.

An increase in the durability of chrome-magnesite bricks was obtained by a rational method of firing, final temperature 1 700 °C soaking for 8 hours, from 1 520 °C the rise of temperature being 5-7 °C/hr. This method of firing increased the softening temperature under load to 1 670 - 1 680 °C. The service life of converter linings increased by a factor

Card 3/4

In the Plant imeni Petrovskiy

SOV/133-58-6-14/33

of 2.5 and the consumption of bricks per ton of steel decreased by a factor of 2. The work on further improvement of the refractory lining is being continued.

1. Steel--Production 2. Steel--Quality control 3. Furnaces  
Card 4/4 --Operation 4. Oxygen--Applications 5. Refractory materials--Effec-  
tiveness

AUTHORS: Beda, N.I. and ~~Kotov, N.K.~~, Engineers SOV/133-58-6-31/33

TITLE: In the Plant imeni Petrovskiy (Na zavode im. Petrovskogo)

PERIODICAL: Stal', 1958, Nr 6, p 575 (USSR).

ABSTRACT: An improvement in the technology of production of cast iron ingot moulds in order to increase their durability. In 1957, the consumption of ingot moulds on the works decreased by 3-5 kg/ton of steel. This was due to: a) casting of closed bottom ingot moulds with top edges bevelled and a cast belt in the form of a local thickening. The life of 436-ton ingot moulds increased from 45 to 65 castings; b) the use of a new type of ingot mould, 3.5-tons for killed metal, rolled into sheets. Ingot moulds are cast with longitudinal ribs on wide faces and a ring-like belt, protecting the mould from the formation of longitudinal and transverse cracks; c) successful mastering of the technology of casting durable ingot moulds using a mixture of blast furnace (50%) and cupola (50%) iron.

Card 1/1 1. Molds--Production 2. Cast iron--Applications 3. Cast iron--Casting

SOV 133-58-7-19/27

AUTHORS: Beda, N.I. and Kotov, N.K., Engineers

TITLE: At the Works imeni Petrovskiy (Na zavode im. Petrovskogo)

PERIODICAL: Stal', 1958, Nr 7, pp 641 - 642 (USSR)

ABSTRACT: 1) An investigation of conditions under which coefficients of consumption of metal in rolling mills can be decreased. On a rail mill, a decrease in the consumption of metal was obtained mainly in the rolling of square semis from rimming and tube metal. The economy was obtained due to the following measures: rational cutting of hot products rolled on mill 800; the use of ingots of weights appropriate to the weight of the semis rolled; introduction of 5-ton ingots of rimming metal in addition to 4.2-ton ingots; the use of an addition of a thermal mixture to the head part of rimming ingots ( $1/3$  scale and  $2/3$  calcined sand) and an improvement in the quality of the surface of ingots (by changing teeming conditions). A decrease of metal consumption in the production of round tube semis was obtained due to: shortening of ingot tops (450-mm instead of 600-mm with an increased conicity of their side faces (20% instead of 10%); thus decreasing the weight of ingots (from 4.36 ton to 4.27 tons) and the Card1/2 weight of the crop end (from 15.5 to 14.5%) without any

At the Works imeni Petrovskiy

SOV/133-58-7-19/27

deterioration of the macrostructure of tube semis; a decrease in the bottom crop end from 2 to 1% and a redistribution of a 1% bottom crop end between blooming shears (0.5%) and hot-cutting saws. Economies on other mills were obtained by measures similar to the above quoted. The economy in rolling sheets was due to the introduction of cold rolling.

2) An investigation of electrofacing of steel rolls with hard alloys.

On the basis of the results of an investigation a considerable improvement of the technology of an automatic hard facing of worn roll passes was obtained.

1. Metals--Processing    2. Rolling mills--Performance    3. Rolling mills--Maintenance

Card 2/2

S/133/61/000/007/005/017  
A054/A129

AUTHORS: Beda, N. I., Katov, N. K.

TITLE: News in brief

PERIODICAL: Stal', no. 7, 1961, 610

TEXT: 1) In the metallurgicheskiy zavod im. Petrovskogo (Metallurgical Plant im. Petrovskiy) tests are being carried out to replace bauxite by fluorite in the production of oxygen converter steel. Addition of 1.4 - 1.5 kg fluorite per ton of steel in rigid sack-bottom converters having a basic (magnesite-chrome) lining greatly accelerated the slag-formation in the first 3 - 5 minutes; it also promoted the blast and raised the basicity of the primary slag from 1.1 - 1.2 to 1.5 - 2.3. This improved operating conditions of the lining and increased its service life from 141 to 204 smeltings. The specific consumption of periclase-spinellide bricks could moreover be reduced from 16 to 11 kg/ton of steel. 2) 35ГC (35GS) steel is produced instead of the 25Г2C (25G2S) brand; the new steel contains 0.40% less manganese but it has the same mechanical properties as the steel it replaces. Manganese consumption could be reduced by 12 kg/ton of steel and the cost of the metal by 1.1 - 1.2 rubles/ton. 35GS steel is suitable for reinforcement wire 6 mm in diameter.

Card 1/1



S/133/61/000/007/008/017  
A054/A129

AUTHORS: Beda, N. I., Kotov, N. K.

TITLE: News in brief

PERIODICAL: Stal', no. 7, 1961, 615

TEXT: 1) In the metallurgicheskiy zavod im. Petrovskogo (Metallurgical Plant im. Petrovskiy) a ГУП-Co-0.5-1 (GUP-Co-0.5-1) type gamma defectoscope and a portable KC-7-0.13 (KS-7-0.13) container (165 kg) with radioactive cobalt is used on an industrial scale to study the metal structures and special parts of metal products, the welding seams of supporting steel struts, window frames, containers, etc., as well as large castings and heavy hammered products. 2) Three units were put into operation for the automatic electric surface-layer welding of large-size products, moreover apparatus for the vibrating-arc and electro-slag smelting. The technology for 19 various castings, a new nomogram for the velocities of surface-layer welding of circular products have been established. Suitable alloyed steels for substitution were selected, the conditions of forging and those of heat treatment after forging have been improved. Some of the products are surface-hardened. Due to the above modifications the service life of various exchangeable parts in-

Card 1/2

S/133/61/000/007/008/017  
A054/A129

News in brief

creased 2 - 10 times. 3) In cooperation with the Proyektno-konstruktorskiy tekhnologicheskii institut (Technological Institute for Design and Construction) some modifications have been made in the construction of the slag-ladle of open-hearth furnaces. In the supporting rings of the 11 m<sup>3</sup> capacity ladles elliptical apertures were made allowing a natural air flow. This ensures a more uniform heating and cooling of the side-wall surface of the ladle and increased its service life 1.5 times.

Card 2/2

S/133/61/000/007/017/017 .  
A054/A129AUTHORS: Beda, N. I., Kotov, N. K.

TITLE: News in brief

PERIODICAL: Stal', no. 7, 1961, 664

TEXT: 1) In the metallurgicheskii zavod imeni Petrovskogo (Metallurgical Plant imeni Petrovskiy) ways and means were found to lower the consumption coefficients of rolling processes. In 1960 a considerable saving in cast and rolled metal was effected by reducing the bottom crops by 1% and the head crops by 3%, by producing more light-weight sections and rolling with negative allowances, as well as by mounting an automatic reduction control device on the blooming mill in addition to two photoelectric pyrometers to control the temperature at the beginning and end of rolling and by applying more accurate roll-pass designs when rolling special sections. 2) Tests were carried out to improve the quality of tube steel. The causes of surface defects of tubings 90 mm in diameter rolled on 800-mm roll stands from 4.27-t carbon steel ingots were investigated. The output of first-class product was raised by 1% when the following measures were taken: rigid-bottom ingot molds were used with straight instead of curved edges, a flatter bottom

Card 1/2

BEDA, N.I.; KOTOV, N.K.

Research at the Petrovskii Metallurgical Plant. Stal' 22  
no.7:619 JI '62. (MIRA 15:7)  
(Bessemer process)

BEDA, N.I., inzh.; RYZHKOV, P.Ya., inzh.; GORYUCHKO, I.G., inzh.;  
MASHKOVA, A.K., inzh.; Primali uchastiye: LIFSHITS, S.I.;  
KOTOV, N.K.; KOSHCHAYEV, A.D.; CHUVICHKINA, N.K.; KOLPOVSKIY,  
N.M.; GOLOVKO, O.F.; LUDENSKIY, A.M.; SERBIN, I.V.; IVANOV, I.T.;  
ALEKSEYEVA, N.V.; MENDEL'SON, N.Ya.

Quality of pipe billets and pipes made of killed converter steel.  
Stal' 21 no.9:824-825 S '61. (MIRA 14:9)

1. Metallurgicheskiy zavod im. Petrovskogo i Truboprokatnyy  
zavod im. Lenina.

(Pipe, Steel)

BEDA, N.I.; KOTOV, N.K.

Research carried out at the Petrovskii Metallurgical Plant.  
Stal' 22 no.6:543 Je '62. (MIRA 16:7)  
(Dnepropetrovsk—Rolling(Metalwork))

BEDA, N.I.; KOTOV, N.K.

Research carried out at the Petrovskii Metallurgical Plant.  
Stal' 22 no.9:790 S '62. (MIRA 15:11)  
(Dnepropetrovsk--Metallurgical research)

SARANCHINA, G.M.; KOTOV, N.V.

Studying the Dzhilau deposit (Tajikistan). Vest. LGU 14 no.24:36-54  
'59. (MIRA 12:12)

(Dzhilau region (Tajikistan)--Petrology))

KOTOV, N.V.

Structure of the eastern part of the Chinor-Say intrusive. Vest.  
LGU 15 no.12:141-145 '60. (MIRA 13:6)  
(Zeravshan Range--Geology)



KOTOV, N.V.

Structural characteristics of the region of the Dzhilau gold-  
wolframium deposit. Trudy Len. ob-va est. 72 no.1:84-87 '61.  
(MIRA 15:3)

(Pendzhikent region--Geology, Structural)

KOTOV, N.V.

Some problems of the structure, geology, and petrology of granitoids  
in the western part of the Zeravshan Range. Sov.geol. 6 no.12;  
89-102 D '63. (MIRA 16:12)

1. Leningradskiy gosudarstvennyy universitet.

KOTOV, N.V.; PUSHKAREV, Yu.D.; VINGRADOV, D.P.

Geology, structure, and intrusive rocks of the former Urgut District.  
Vest. LGU 18 no.12:44-56 '63. (MIRA 16:8)  
(Zeravshan Range--Geology)

KOTOV, N.V.; VINOGRADOV, D.P.; PUSHKAREV, Yu.D.

Structure and petrology of the Akba-i-Dzhumon intrusion. Izv.  
AN SSSR. Ser. geol. 28 no.11:66-84 N'63. (MIRA 17:2)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova,  
Leningrad.

KOTOV, Nikolay Vladimirovich; SKORYNINA, N.P., red.

[Petrology of granitoid intrusions in the western part  
of the Zeravshan Range] Petrologiia granitoidnykh in-  
truzii zapadnoi chasti Zeravshanskogo khrebta. Leningrad,  
Leningr. univ. 1965. 156 p. (MIRA 18:12)

KOSOY, A.L.; KOTOV, N.V.

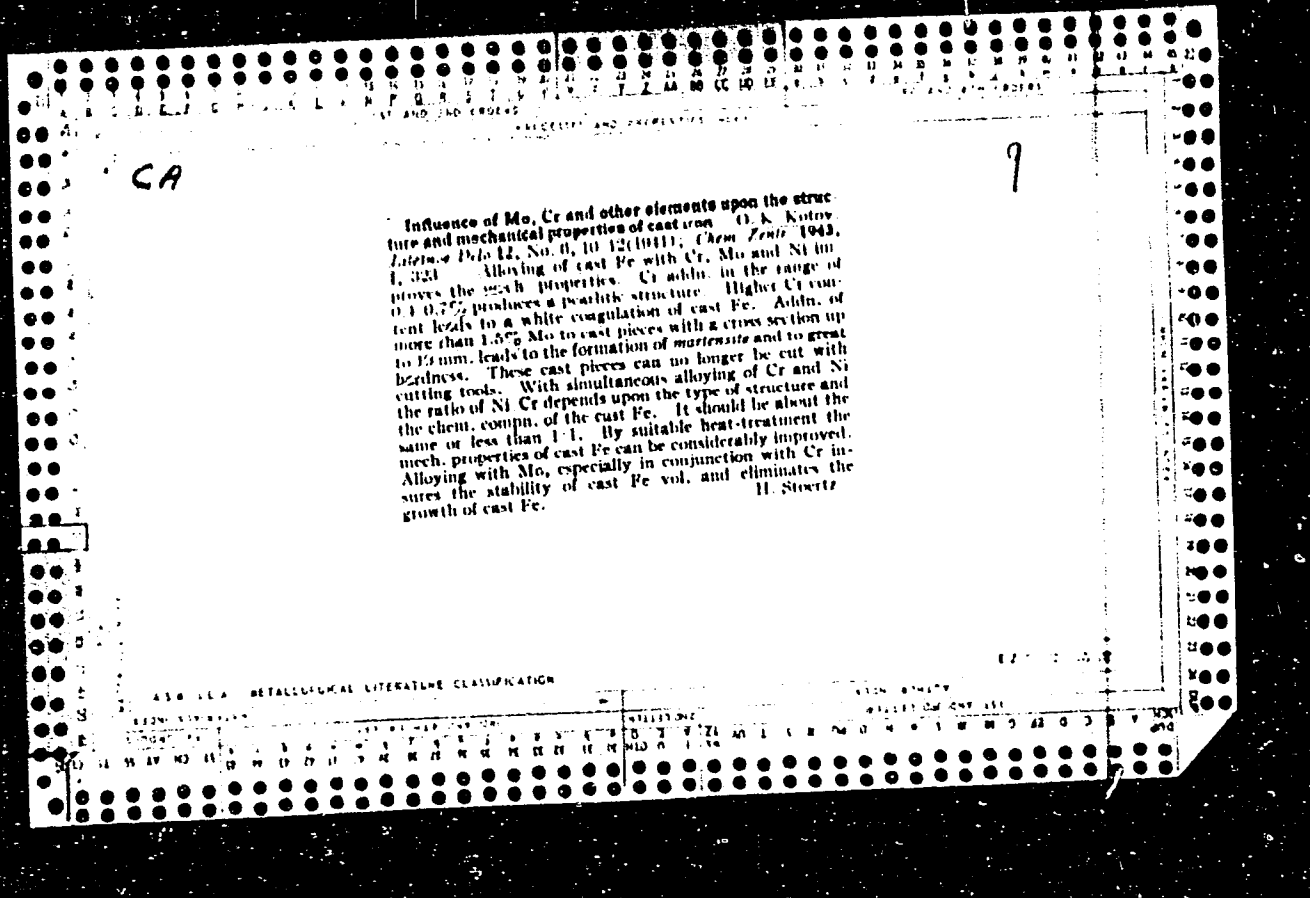
Structural state of potash feldspars in some porphyric and porphyroid  
igneous rocks. Vest.LGU 20 no.12:28-33 '65.

(MIRA 18:8)

GERLING, E.K.; PUSHKAREV, Yu.D.; KOTOV, N.V.

Behavior of some minerals during heating under the conditions of the increased argon pressure. Izv. AN SSSR. Ser.geol. 30 no.11:3-13 N '65. (MIRA 18:12)

1. Laboratoriya geologii dokembriya AN SSSR i Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova. Submitted July 7, 1965.





KOTOV, Or Kirillovich, kandidat tekhnicheskikh nauk; SAZONOV, A.G., inzhener,  
redaktor; VERINA, G.P., tekhnicheskij redaktor

[Efficient methods for the chemical and heat treatment of railroad  
rolling stock components] Ratsional'nye metody khimiko-termicheskoi  
obrabotki detalei podvizhnogo sostava. Moskva, Gos. transp. zhel-  
dor. izd-vo, 1956. 57 p. (MLRA 9:11)  
(Railroads--Rolling stock)

129-10-7/12

AUTHOR: Kotov, O.K., Candidate of Technical Sciences.

TITLE: Surface hardening of carbon steel by means of gas cementation. (Poverkhnostnoye uprochneniye uglerodistykh staley gazovoy tsementatsiye)

PERIODICAL: "Metallovedeniye i Obrabotka Metallov" (Metallurgy and Metal Treatment) 1957, No.10, pp.28-33 (U.S.S.R.)

ABSTRACT: The work described in this paper was carried out for the purpose of extensive investigation of the influence of chemical-heat treatment, namely, carburisation and high temperature gas nitro-carburisation on the mechanical properties of current grade carbon steels. Three steels were investigated with carbon contents of 0.11, 0.21 and 0.36%, the analyses of which are contained in Table 1, p.28. The results are plotted in 12 graphs, giving data on the carbon content in the surface layer, the strength, impact strength and fatigue strength and also the wear resistance of various specimens, carburised under differing regimes. The main purpose of the experiments was to test the suitability for gas carburisation of spindle oil fed into the furnace at the rate of 60 drops per minute. It was found that spindle oil was fully suitable as a carburising agent ensuring a eutectoidal carbon content in the surface layer and high mechanical strength values after

Card 1/2

APPROVED FOR RELEASE: 08/23/2000

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KOTOV, O. K.

25(1)

PHASE I BOOK EXPLOITATION

SOV/1808

Kotov, Or Kirillovich

Poverkhnostnoye uprochneniye detaley mashin khimiko-termicheskimi metodami (Chemical Heat Treatment Methods for Surface Hardening of Machine Elements) Moscow, Mashgiz, 1958. 166 p. Errata slip inserted. 4,000 copies printed.

Reviewer: Z.I. Regirer, Engineer; Ed.: F.V. Kulikov, Candidate of Technical Sciences; Ed. of Publishing House: Ye.Ya. Savel'yev; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on General Technical and Transport Machine Building: K.A. Ponomareva, Engineer.

PURPOSE: This book is intended for engineers and technicians working in metallurgy and heat treatment of metals and may also be useful to machine designers.

COVERAGE: The experiments described in this book were performed by the author in the Thermal Laboratory of the Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta (All-Union Scientific Research Institute of Rail Transport) with the assistance

Card 1/5

18(7)

SOV/159-58-3-21/31

AUTHOR:

Kotov, O.K.

TITLE:

Increasing the Strength of Steel Parts by Thermo-Chemical Methods

PERIODICAL:

Nauchnyye doklady vysshey shkoly, Mashinostroyeniye i priborostroyeniye, 1958, Nr 3, pp 149-157 (USSR)

ABSTRACT:

This report was read at the inter-vuz scientific-technological conference at MVTU imeni Baumana. The peculiarities of the case-hardening process were investigated by the Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznoderozhnogo transporta (All-Union Scientific Research Institute of RR Transport). The case-hardening process was performed in a ShTsN-45A furnace installed for final adjustment at the plant "Aremz". Presently there are two principal directions in developing the case-hardening process: 1) The effort made in increasing the process temperature from 900-930° to 100-1,100°; 2) The application of more active carburizing materials permitting a carbon and nitrogen saturation without ammonia addition. Further

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the saturation of the surface layer by gases, oxygen and hydrogen, whose influence must have an effect on the structure and mechanical properties of the diffusion layer. The results of these investigations are shown by graphs and tables. Steel of types St 3, St 5, 12KhN3A were used. The author shows that during the case-hardening process a saturation will occur with oxygen and hydrogen in the surface layers of steel products. The investigation method is described in detail. The case-hardening was performed at 930-1,050° using spindle oil, tri-ethanol amine and a solid carburizing material. Tri-ethanol amine was selected because it contains carbon, nitrogen, oxygen and hydrogen which are set free at high temperatures. The gas analysis was performed according to the method described in the monograph of Yu.A. Klyachko, A.G. Atlasov and M.M. Shapiro. The quantitative gas analysis was conducted at TsNII MPS by R.A. Savel'yev by the vacuum melting method at a temperature of 1,680°C and 10<sup>-4</sup> mm mercury column. The author shows

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these investigation results in five graphs. He arrives at the following conclusions: 1) Case-hardening at 1,050° provides the same values of the mechanical properties of steel as at 930°. 2) Hardening carbon steels directly from the furnace with case-hardening heating produces the best values of mechanical properties, while alloyed steel is repeatedly heated or hardened after normalization. 3) Case-hardening at 1,050° compared to gas case-hardening at 930-950° increases the productivity of the process. 4) The application of tri-ethanol-amine provides the simultaneous saturation with carbon and nitrogen without the addition of ammonia. 5) It was established that when using a gaseous or solid carburizing agent in the case-hardening process an oxygen and hydrogen saturation will occur together with other elements. The distribution of oxygen and hydrogen in the diffusion layer is analogously to the carbon distribution. The

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maximum content is at the surface with a gradual reduction towards the center of the steel products. There are 2 photographs, 7 graphs, 4 tables and 1 Soviet reference.

SUBMITTED: February 2, 1958

ASSOCIATION: Doklad pročitán na mezhdvusoovskoy nauchno-tekhnologicheskoy konferentsii v Moskovskom vysshem tekhnicheskóm uchilishche imeni Baumana.

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*Kotov, O.K.*

AUTHOR: Kotov, O. K. Candidate of Technical Sciences 129-58-5-5/17

TITLE: Surface Hardening of Carbon Steels by Means of High Temperature Gas Nitro-cementation (Poverkhnostnoye uprochneniye uglerodistykh staley vysokotemperaturnoy gazovoy nitrotsementatsiyey)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 5, pp 16-20 (USSR)

ABSTRACT: The aim of the investigation was to study the influence of the process of high temperature gas nitro-cementation on the mechanical properties of ordinary carbon steels. Carbon steels "St.3" and "St.5" were used in the experiments, the compositions of which were:  
St.3 - 0.20% C, 0.55% Mn, 0.03% Si, 0.043% S, 0.053% P, 0.15% Cr, 0.05% Ni;  
St.5 - 0.35% C, 0.65% Mn, 0.26% Si, 0.043% S, 0.033% P, 0.12% Cr.  
The tensile strength was tested on specimens of 10 mm dia., 100 mm long, the bending strength on specimens of 10 mm dia. 200 mm long, the impact strength on 10 x 10 x 55 mm Mesnager notched specimens of "St.3" and non-notched specimens of "St.5" and, Card 1/3 finally, the fatigue strength was tested on 10 mm and

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Surface Hardening of Carbon Steels by Means of High Temperature  
Gas Nitro-cementation

50 mm dia. specimens. Nitro-cementation was effected in a Ts-35 furnace using spindle oil which was fed into the furnace at a rate of 60 to 70 drops per minute and ammonia at a rate of 0.5-1 litre/min. If the rate of feeding of the oil was lower, the carbon concentration in the surface layer was not high enough. The nitrogen concentration along the depth of the layer as a function of the regime of nitro-cementation is graphed in Fig.2. In Fig.3 the dependence is graphed of the depth of the nitro-cementated layer on the duration of the process at various temperatures. Fig.4 gives the tensile strength as a function of the duration of the cementation process. Fig.5 gives the dependence of the tensile strength on the tempering temperature. Figs. 6 and 7 give the fatigue limit of two steels. Fig.8 gives data of the wear resistance of specimens after gas cementation and nitro-cementation, obtained by means of Skoda-Savin test apparatus. Fig.9 gives the epures of the residual axial stresses of "St.5" after nitro-cementation for the tempering temperatures of 200°C and of 400°C as obtained by the author and

Card 2/3 G. P. Meshchaninova. It is concluded that high temperature

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Surface Hardening of Carbon Steels by Means of High Temperature  
Gas Nitro-cementation

gas nitro-cementation represents a further improvement of the process of gas nitro-cementation; the additional saturation with nitrogen increases the speed of diffusion and eliminates the formation of soot-like deposits. The main advantage of high temperature gas nitro-cementation is that the mechanical properties and particularly the fatigue strength are increased. A strength increase of up to 20% was detected as a result of increasing the tempering temperature from 100°C to 400°C. The wear resistance of the nitro-cemented steels is also higher than that of other case hardened steels. High frequency surface hardening increases the fatigue limit by 83%, gas cementation increases it by 93%, whilst high temperature nitro-cementation increases it by 172% compared to the respective values after normalisation annealing. This very high increase of the fatigue limit is attributed to the deeper penetration of the residual compression stresses.

Card 3/3 There are 9 figures and 7 references, 6 of which are Soviet, one English.

ASSOCIATION: TsNII MPS

AVAILABLE: Library of Congress.

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