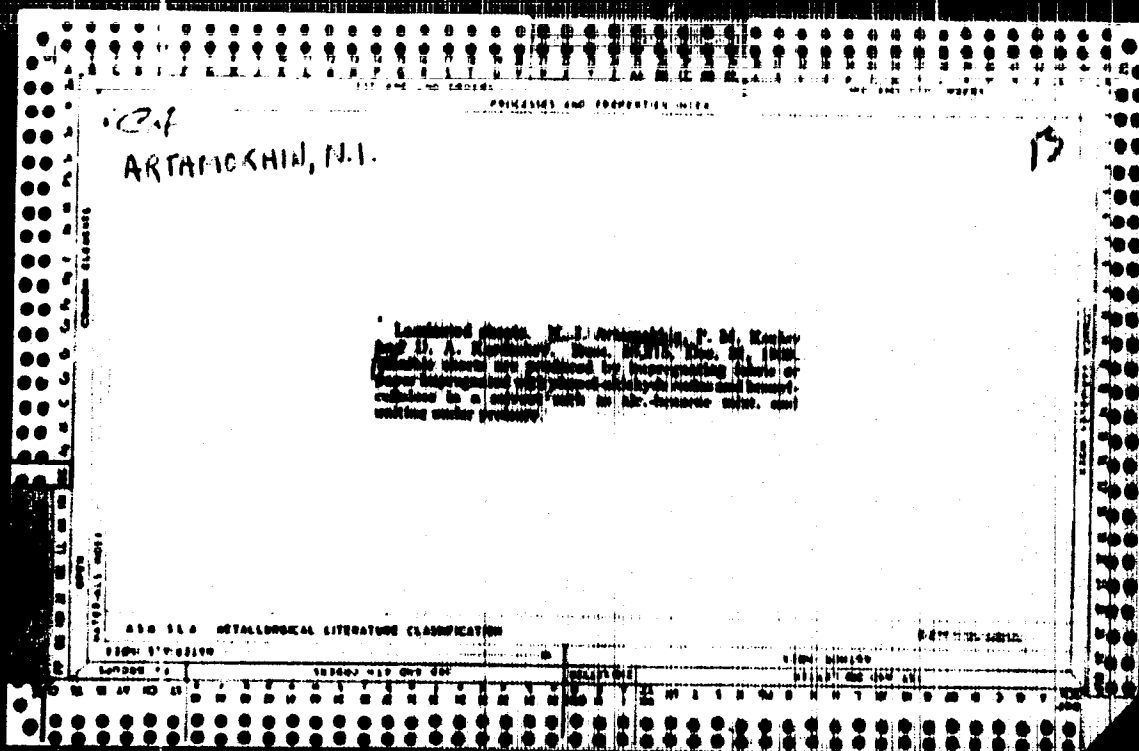


KUTYURIN, V.M.; ARTAMKINA, I.Yu.

Determining the purity of chlorophyll. Fiziol.rast. 9 no.4:493-  
496 '62. (MIRA 15:9)

1. Institut geokhimi i analiticheskoy khimii AN SSSR, Moskva.  
(CHLOROPHYLL)



8/122/60/000/005,008/017  
A151/A130

AUTHORS: Artamokhin, N. I.; Sharonova, M. S.  
TITLE: Glues application in machine industry  
PERIODICAL: Vestnik mashinostroyeniya, no. 5, 1960, 35-40

TEXT: The article gives a brief general information on the existing industrial glue grades developed by the Soviet scientific research institutes, i.e., their physical and mechanical properties, application, preparation of material surfaces for gluing, the basic gluing techniques. 30 glue trade names indicate applications for wood and various plastics including ftoroplast-3 and ftoroplast-4. General recommendations are given concerning the choice of glue, e.g., that grounding with БФ-2 (BF-2) glue on metal surfaces makes possible connections of metal with other materials without heating; an underlayer of ПУ-2 (PU-2) coated on special НО-68-1 (NO-68-1) rubber ensures firm bond with many other materials, though without this ground this resin cannot be joined with the available glues; underlayer of ВИАМ-Ф9 (VIAM-F9) protects wood from acidous components in phenol-formaldehyde glues, etc.; glues can be affected by materials containing alkaline matters; glues for metals must not contain corrosive matters.

Card 1/2

Glues application in machine industry

S/122/60/000/005/008/017  
A161/A130 ✓

The 30 glue grades indicate only possible exclusive applications (as connecting rubber with polyethylene or silicate glass, etc.), but in general rubber can be glued by many special glue grades. It is stressed that skill and care are necessary for good glue joints. There are 3 tables.

Card 2/2

ARTAMOKHIN, N.I., inzh.; SHARONOVA, M.S.

Using adhesives in the manufacture of machinery. Vest. mash. 40  
no.5:36-40 My '60. (Adhesives) (MIRA 14:4)

MAMONTOV; GORSHKOV; MASLAKOV; POKROVSKAYA; KLEVANTSOV, P.I.; MOSKALEV;  
YANKOVSKIY; DUSHUK; BUDKEVICH; KOVAL'CHUK, U. Ya.; GRISHANOV;  
ARTAMONOV, TRIFONOV; SHIYANOV, I.A.

Railroad workers assume greater responsibilities. Put' 1  
put.khoz. 5 no.2:3-4 P '61. (MIRA 14:3)

1. Nachal'nik Kalachinskoy distantzii puti Omskoy dorogi (for Mamontov).
2. Zamestitel' sekretarya partorganizatsii, stantsiya Kalachinskaya, Omskoy dorogi (for Gorshkov).
3. Predsedatel' mestkoma, stantsiya Kalachinskaya Omskoy dorogi (for Maslakov).
4. Sekretar' komsovol'skoy organizatsii, stantsiya Kalachinskaya Omskoy dorogi (for Pokrovskaya).
5. Nachal'nik Shadrinskoy distantzii puti Iuzhno-Ural'skoy dorogi (for Klevantsov).
6. Nachal'nik Orshanskoy distantzii puti Belorusskoy dorogi (for Moskalev).
7. Sekretar' partbyuro, g. Orsha (for Yankovskiy).
8. Predsedatel' mestkoma, g. Orsha (for Dushuk).
9. Sekretar' komiteta komsovola g. Orsha (for Budkevich).
10. Nachal'nik shebenochnogo zavoda, stantsiya Orlova Sloboda, Donetskoy dorogi (for Koval'chuk).
11. Nachal'nik Kamyshlovskoy distantzii puti Sverdlovskoy dorogi (for Grishanov).
12. Sekretar' partbyuro, stantsiya Kamyshlov Sverdlovskoy dorogi (for Artamonov).
13. Predsedatel' mestkoma, stantsiya Kamyshlov Sverdlovskoy dorogi (for Trifonov).
14. Nachal'nik rel'sosvarochnogo predpriyatiya No. 9, Riga (for Shiyanov).

(Railroads--Employees)

ARTANCHOV, A.

Production brigades on the collective farm. Kolkh. proizv. 12 no. 4, 1952.

SO: MLRA, August 1952.

ARTAMONOV, A.

Practice in applying the legislation on preferential benefits  
in the Far North. Sots. trud 8 no.8:157-159 Ag '69.

(MIRA 16:8)

(Russia, Northern--Norwage payments)



ARTAMONOV, A. A.

$T_{\text{calc}} = T_{\text{obs}} + D^{\text{th}}(M) \cdot \dots$   
 The cartographic expression of expected variations of temperature from the point  $i$  for the  
 period in the formula:

$$D^{\text{th}} = F_{\text{calc}} - F_{\text{obs}}$$

(used. The use of these formulas will be in the future in the study of the climate of the  
 stations for Moscow. Subject headings: 1. Temperature forecasting; 2. Temperature variations;  
 Moscow, U.S.S.R. - I. I. D.

AV

3(5)

SOV/12-91-2-20/21

AUTHOR: Artamonov, A.A.

TITLE: The Recommencement of the Work of the Meteorological Committee of the Moscow Branch of the Geographical Society of the USSR

PERIODICAL: Izvestiya Vsesoyuznogo geograficheskogo obshchestva, 1959, Nr 2, p 203 (USSR)

ABSTRACT: The author describes the proceedings at the 1st meeting of the Moscow Branch, where papers by G.M. Tauber were read on "Meteorological Conditions in the Antarctic" (recorded during his visit in 1956 to 1957 and his previous expeditions). The following members took part in the discussions: Kh.P. Pogosyan; I.A. Klenin; B.L. Dzardzheyevskiy; R.P. Usmanov and L.A. Zhdanov. At the meeting of the Branch on December 17th, a paper by Kh.P. Pogosyan on "Atmospheric Streams (winds) and Cyclonic Activities" was read.

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SOV/12-91-2-20/21

The Recommencement of the Work of the Meteorological Committee  
of the Moscow Branch of the Geographical Society of the USSR

The paper attracted a large attendance including  
such experts on this matter as B.P. Alisov and  
V.A. Belinskiy.

Card 2/2

*Artamonov, A.A.*

**AUTHOR:** Artamonov, A.A., Dotsent

3-58-2-21/53

**TITLE:** Intervuz's Scientific and Methodical Conferences (Meshduvuzovskiye nauchnyye i metodicheskiye konferentsii) The Second Conference on Radio-electronics (Vtoraya konferentsiya po radioelektronike)

**PERIODICAL:** Vestnik Vyshey Shkoly, 1958, # 2, pp 74 - 76 (USSR)

**ABSTRACT:** This second conference began in September 1957 in Saratov. Over 140 reports were submitted to the 400 participants at the general meetings and in the numerous sections (on electronics, electrodynamics, radioastronomy and radiospectroscopy, diffusion of radio waves, semiconductors and their application in radio sets).

M.D. Devyatkov, Member-Correspondent of the USSR Academy of Sciences showed the intensive development of UHF electronic devices intended to work in a broad frequency band.

Reports were also delivered on the fluctuating phenomena in electronic and gas-discharging devices including the physics of these phenomena, and gas discharges of ultrahigh frequencies. S.A. Akhmanov, G.F. Antonov, N.P. Tikhomirova, and I.T. Trofimenko (MGU), who spoke on fluctuating phenomena in auto-oscillating (UHF) systems. Yu.V. Gorokhov, and I.T. Byzovoy (MGU), dealt with effects of gas discharge on hollow

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3-58-2-21/33

Intervuz's Scientific and Methodical Conferences. The Second Conference on Radio-electronics

resonators. A.M. Aleskovskiy (Saratov University) spoke on the distribution of electrons by speed in a decomposing plasma. V.M. Niconov (Gor'kiy University) told of the fluctuations of frequency and amplitude of oscillations in a klystron generator.

The reports delivered in the Section on Electrodynamics were generally concentrated on theoretical and experimental research of the propagation of electromagnetic waves in impeding systems of different kinds. The following were given: "Dispersion Properties of Some Pin Impeding Systems (V.M. Dashenkov - Saratov University), "Interference Method of Cold Researches on Impeding Systems" (A.I. Shtyrov - Saratov University), "On the Measurement of the Impedance of Contact in Quasi-Cylindrical Impeding Systems" (A.V. Gaponov - Gor'kiy University), "On Diffraction Problems Having Substantial Significance for the Analysis of Directed Antenna Diagrams" (Ye.N. Vasil'yev and S.M. Verevkin - Moscow Power Engineering Institute).

In the Section on Radioastronomy and Radio-spectroscopy, the report of V.V. Zheleznyakov (Gor'kiy University) "On the Theory of a Sporadic Radio Radiation of Jupiter" aroused much

Card 2/4

5-58-2-21/33

Intervuz's Scientific and Methodical Conferences. The Second Conference on Radio-electronics

interest.

G.G. Getmantsev (Gor'kiy University) concentrated his report on the origin of cosmic non-thermal radio radiation. The scientific collaborators of the MGU, A.M. Prekhorov, V.N. Zverev and L.S. Korniyenko, reported on their research work on the fine and superfine spectrum structure of the electronic para-magnetic resonance of chrome and iron ions in the lattice of aluminum oxide.

In the Section on Radio Wave Propagation the most significant lectures were those on the propagation of ultra-short waves in the troposphere, and on the influence of solar activity on the ionosphere. These reports were read by A.A. Semenov, Ch.Ts. Tsydypov (Moscow University); M.N. Yeryushev, N.A. Savich-Krymakaya (Astrophysical Observatory of the USSR Academy of Sciences) and N.G. Denisov (Gor'kiy University)

The Section on Semiconductors and Their Use in Radiosets concentrated its attention on the questions of devising engineering methods in designing various radio circuits with semiconducting devices as well as circuits for transient pro-

Card 3/4

3-58-2-21/33

Intervuz's Scientific and Methodical Conferences. The Second Conference on Radio-electronics

cesses. A part of the lectures delivered to this section dealt with the technology of manufacturing useful semiconducting materials (L.S. Berman from the Institute of Semiconductors of the USSR Academy of Sciences; Z.I. Kir'yashkina - Saratov University; V.V. Pasynkov and Ya.I. Panova - Leningrad Electro-Engineering Institute)

The conference pointed out that notwithstanding the successes achieved in research, the work of vuzes in the field of radio-electronics has fallen behind. The scientists must develop a number of important problems of modern electronics: the scientific foundations for making new electrovacuum devices, questions of experimental radioastronomy, the tropospheric propagation of ultra-short waves, etc. The conference further recommended that a number of "problem laboratories" be organized in those vuzes where scientific-research work in this direction is being successfully carried on.

It is intended to convene the 3rd conference in Khar'kov in September 1959.

ASSOCIATION: Ministerstvo vysshogo obrazovaniya SSSR (USSR Ministry of Higher Education)  
AVAILABLE: Library of Congress  
Card 4/4

SHYNDMAN, A. K.; ROZENBERG, B. A.; ARTAMONOV, A. A.

Vinylpyridines and the polymers derived from them. Khim.  
prom. no.3:181-187 Nr 63. (MIRA 16:4)

1. Donetskoye otdeleniye Instituta organicheskoy khimii  
Akademii nauk UkrSSR.

(Pyridine) (Polymers)



KAZARINOVA, N.F.; BABIN, Ye.P.; SOLOMKO, K.A.; KOTELNITS, M.I.;  
ARTAMONOV, A.A.; SHEYNKMAN, A.K.

Preparation of 4-ethylpyridine. Zhur.prikl.khim. 36 no.3:  
649-654 My '63. (MIRA 16:5)

(Pyridine)

ACCESSION NR: AR4032170

8/0058/64/000/002/G014/G014

SOURCE: Ref. zh. Fiz., Abs. 2G95

AUTHORS: Artamonov, A. A.; Goryachev, V. N.; Yepishava, P. G.

TITLE: Determination of the concentrations of free sodium atoms on the cathode of a dc carbon arc

CITED SOURCE: Dokl. VI Nauchn. konferentsii Novokuznetskogo ped. in-ta po fiz.-matem. naukam. Novokuznetsk, 1963, 103-105

TOPIC TAGS: sodium atom concentration, dc carbon arc, free sodium on cathode, cathode sodium deposit, arc plasma contamination, spectral analysis

TRANSLATION: The formation of free Na on the cathode of a dc carbon arc was investigated. Samples with different NaCl content were placed in a hole in the anode. The cathode was sharpened to a cone.

Card 1/2

ACCESSION NR: AR4032170

The distance between the electrodes was maintained constant. It is established that the concentration of sodium deposited on the cathode depends on the NaCl content in the anode, the arc current, and the time of its combustion. The sodium penetrates into the cathode to a depth 1--1.5 mm, and with increasing arc combustion time and arc current it begins to enter the arc plasma, something that must be allowed for when performing a spectral analysis. Z. Kobina.

DATE ACQ: 31Mar64

SUB CODE: PH

ENCL: 00

Card 2/2

ARTAMONOV, A.A.; ROSENBERG, B.A.; SHEYKMAN, A.K.

Pyridylethylation reaction. Reakts. i metod. iskl. exp. podd.  
14:173-298 '64. (SIRA 1863)

ART. MONOV, A.A.; BALANDIN, A.A., akademik; MARUKYAN, G.M.; KOTEL'NETS, M.I.

Isolation of 4-vinylpyridine from a mixture of pyridine bases.  
Dokl. AN SSSR 163 no.2:359-361 J1 '65. (MIRA 18:7)

1. Donetskij filial Vsesoyuznogo nauchno-issledovatel'skogo instituta  
khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv i  
Institut organicheskey khimii im. N.D. Zelinskogo AN SSSR.

ARTAMONOV, A.A.; BALANDIN, A.A., akademik; BODNARCHUK, R.D.

Catalytic synthesis of p-aminostyrene. Dokl. AN SSSR 164  
no.2:327-330 S '65. (MIRA 18:9)

1. Donetskij filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta khimicheskikh reaktivov i osobo chistykh  
khimicheskikh veshchestv i Institut organicheskoy khimii im.  
N.D. Zelinskogo AN SSSR.

ART. MONOV, A.G.

Broaches with a shortened shaft. Stan. 1 instr. 36 no. 2142 P '65.  
(MIRA 18:3)

ARTAMONOV, A.I., inzh.-mayor

Multiplying apparatus. Vest.protivovozd.obor. no.9:25-28 S 16h.  
(Electronic analog computers) (MIRA 14:8)



I 46673-64 EWP(m)/EWT(l)/EEC(k)-2/EWP(k)/T LJP(c) RTW/TC/WW  
ACC NR: AF6020720 SOURCE CODE: UR/0421/66/000/003/0020/0023

AUTHOR: Artamonov, A. K (Moscow); Arkhipov, V. N. (Moscow); Starchenko, G. Ye.  
(Moscow)

ORG: none

TITLE: Relaxation and radiation behind a direct shock discontinuity

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 3, 1966, 20-23

TOPIC TAGS: shock wave analysis, shock wave physics, air flow, nitrogen, light radiation, gas relaxation

ABSTRACT: The problem is formulated as follows: An equilibrium supersonic air stream is incident on a stationary direct shock discontinuity. The translational and rotational energies behind the shock waves are at their equilibrium values, and the processes of vibrational and electronic excitation, dissociation, and ionization (assumed to be single) are not in equilibrium. The electron and heavy-particle temperatures are assumed equal. Radiation due to  $N_2 \rightarrow N_2^*$  transitions are taken into account, and other secondary processes are neglected. The chemical reactions taken into account are listed. Vibrational relaxation of  $O_2$  and  $N_2$  is taken into account. Calculations based on the equations of motion of the mixture and various rate constants taken from other papers yield plots of the distribution of various parameters (density, temperature, electron mass fraction, excited- and unexcited-component mass fractions, radiant-energy distribution) for air and for nitrogen. The results agree well with experimental data on the summary radiant fluxes from the nonequilibrium zone.

742  
B

Card 1/2

L 46673-65

ACC NR: AF6020720

behind the shock wave. The authors thank L. B. Krivonoz for help. Orig. art. has:  
6 figures, 6 formulas, and 1 table. 2

SUB CODE: 20/    SUBM DATE: 10Jul65/    ORIG REF: 003/    OTH REF: 013

Card 2/2 hs

PINKIN, A.K.; SANKIN, S.D.; SHEMYATKIN, N.A.; ~~ARTAMONOV, A.N.~~ redaktor;  
CHICHERIS, A.H., tekhnicheskiv redaktor

[Adjusting forms and printing on DPI and DPP machines] Pripravka  
form i pechatanie na mashinakh DPI i DPP. Moskva, Gos.izd-vo  
"Iskusstvo," 1957. 29 p. (MLWA 10:10)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye poligraficheskoy  
promyshlennosti. 2. 1-ya Gruztskovaya tipografiya Glavpoligrafproma  
imeni A.A.Zhdanova (for Pinkin, Sankin, Shemyatkin)  
(Printing)

ARIAMONOV, A.M., insh.

Mounted equipment used in Trust No.110 of the Volgograd  
National Economic Council. Mkh. stroi. 20 no.6112 Je '63.  
(Construction equipment) (MIRA 16:5)

ARMSTRONG, A. H.

Size of planting potatoes. Sov. agron 10 No. 5, 1952.

SO: MLRA, July 1952.

TRUSHENKO, V.V.; MARTYNISHKIN, A.M.; TSUKANOV, V.P.; GARGO, Ya.V.;  
SHIKOV, I.P.; NIKONOV, A.V.; POSTNIKOV, V.P.; KOROLEV, G.D.;  
ARTAMONOV, A.M.; TEMNIKOV, S.N.; KABLUKOVSKIY, A.F.; MAKHOV, A.Kh.;  
KOTIKOV, A.Kh.; ZNAMENSKIY, B.A.; ZUYEV, T.I.; POZDNYAKOV, A.P.;  
BALASHOV, S.A.; YEINICHENIN, I.P.

New design of electrode holders for electric-arc smelting furnaces.  
Prom. energ. 15 no.8:13-14 Ag '60. (MIRA 15:1)  
(Electric furnaces)

S/119/03/000/002/014/014  
A004/A127AUTHORS: Artamonov, A.S., Filatov, P.G.

TITLE: Increasing the sensitivity of type GE-1M/100 (SE-1M/100) counters

PERIODICAL: Priborostroyeniye, no. 2, 1963, 31

TEXT: Type SE-1M/100 counters are widely used as units of radiometer devices and independent instruments. This counter is intended for counting the number of electric pulses transmitted to its input and is a relay of the polarized type. The sensitivity of this counter could be considerably increased by modifying its design in such a way that it operates under the conditions of an electronic pulse relay. (See description in "Radio", no. 9, 1959). The modification consists in putting two windings on the counter electromagnet coil instead of one, of 3500 turns each. A type K15 (P15) transistor is fixed on the textolite strip on which usually the electromagnet coil leadouts are fastened. The appropriate block diagram is given. This modification resulted in an increase of the counter sensitivity by a factor of 200 - 300. The authors used this type of counter for recording the

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Increasing the sensitivity of ...

8/19/68/000/002/014/014  
A004/1187

ignition sparks of a SHEL-120 (SIL-120) engine in combination with an ionis-  
ation pick-up. There is 1 figure.

Card 2/2



ARIKHANGEL'SKAYA, I.M.; BRONSHTEYN, T. Ya.; ARTAMONOV, A.V.

Boundary of the Alay stage in the southeastern part of Central  
Asia. Inform.sbor. VSEKBI no.22:13-22 '99. (MIRA 14:12)  
(Soviet Central Asia--Paleontology, Stratigraphy)

ASTAROV, A. Ya.

"Investigation of the Machinability of High-Strength Spheroidal Graphite Cast Iron." Cand Tech Sci, Central Sci Res Inst of Technology and Machine Building (TsNITMash), Min Transport and Heavy Machine Building USSR, Moscow, 1953. (KL, No 10, Mar 55)

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

Dissertation: "Investigation of the Machinability of High-Strength Cast Iron with  
Globular Graphite." *Eng. Technol.*, Central Science Inst of Heavy Machine Building.  
*Referativnyy Zhurnal*--Zhurnal, Moscow, No 3, Apr 54.

SO: SOI 224, 26 Nov 1954

И.И. ИСАЕВ А.Я.

ISAYEV, A.I., professor, doktor tekhnicheskikh nauk; KOREV, N.N., kandidat tekhnicheskikh nauk; ~~ARJANOV, A.Ya.~~, inzhener; BRUDSKIT, M.G., inzhener, redaktor; TIKHONOV, A.Ya., tekhnicheskij redaktor

[Semifinish turning with large feeds] Polushistovoe tochenie s bol'shimi podachami. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 73 p. (MIRA 7:10)  
(Turning)

ARCAIMONOV, A. Ya.

USSR/Miscellaneous - Machining

Card : 1/1

Authors : Zorev, N. N. and Arcaimonov, A. Ya.

Title : Machining high-strength cast iron

Periodical : Stan. i instr, 3, 14 - 15, Mar 1954

Abstract : The article describes experiments on high-strength cast iron, effect of its casting skin on the wear of cutters, and shows the advantage of proper cooling in production. Diagrams, table.

Institution : ....

Submitted : ....

ARTAMONOV, A.Ya., kandidat tekhnicheskikh nauk; PANKIN, A.V., professor,  
retsenzent; BEYSEL'MAN, R.D., inzhener, redaktor; BALANDIN, A.F.,  
inzhener, redaktor; UVAROVA, A.F., tekhnicheskii redaktor.

[Research on the workability of high-strength crude iron] Issle-  
lovaniye obrabatyvaemosti vysokoprochnogo chuguna. Moskva, Gos.  
nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1955. 133 p.  
(Iron—Metallurgy) (MLRA 8:10)  
(Metal cutting)

V.SHCHEKO, K.I., otv.red.; ARTAMONOV, A.Ya., red.; ZASLAVSKIY, S.Sh., red.;  
POLYAK, B.V., red.; SREBYUK, V.K., inzh., red.; MUDENSKIY, Ya.V.,  
tekh.red.

[Progressive founding technology] Peredovaya tekhnologiya  
litsinogo proizvodstva. Kiev, Gos. nauchno-tekhn. ind-vo  
mashinostroi lit-ry, 1958. 152 p. (MIRA 12:1)

1. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy  
promyshlennosti.

(Funding)

ARTAMONOV, Aleksandr Yakovlevich [Artamonov, Oleksandr Iakovlevich];  
AMELIN, O., red.; PATSALYUK, P. [Patseliuk, P.], red.

[Tolerances, fits, and technical measurements] Dopusky, posadky  
i tekhnichni vymiry. Kyiv, Dersh. vyd-vo tekhn. lit-ry URSS,  
1958. 405 p. (MIRA 11:11)

(Machinery--Design)  
(Tolerance(Engineering))  
(Measurement)



AUTHOR: Artamonov, A.Ya., Candidate of Technical Sciences 30V/122-59-5-21/32

TITLE: Electro-Mechanical Machining of Very Hard Materials  
(Elektromekhanicheskaya obrabotka materialov vysokoy tverdosti)

PERIODICAL: Vestnik mashinostroyeniya, 1959, Nr 5, pp 61-65 (USSR)

ABSTRACT: Tests are reported in which electro-mechanical machining of very hard materials was carried out on a modified carbide tool grinder. Two silicon carbide materials of 3000 and 2200 kg/mm<sup>2</sup> hardness were tested. A method of electro-mechanical "slotting" was found to yield almost the same output as machining with a disc type electrode and to produce more complex surfaces with a slightly inferior surface finish (not higher than 7th grade by GOST 2789-51). Plotting the rate of metal removal, the current density and the surface finish against the duration of contact (Fig 1), it is found that the best rate of metal removal and the best surface finish are obtained at durations of 0.015 sec per contact, when the tool pressure is either 5.5 or 3.5 kg. Varying the tool pressure, the output rises

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SOV/122-59-5-21/32  
Electro-Mechanical Machining of Very Hard Materials

up to a tool pressure of about  $3.5 \text{ kg/cm}^2$ . Rough machining is carried out at higher voltage and current than finish machining. Typical electrical conditions are: 20 volts and 7 amps yielding a rate of metal removal of 0.5 mm per test and a grade 3 surface finish in roughing and 12 volts and 1.2 amps yielding 0.10 mm per test with grade 7 surface finish in fine machining. The softer of the two materials can be removed at about 4 times the rate of the harder. Comparing several tool materials, the best surface finish and lowest tool wear are obtained with copper. A special machine suitable for disc type and slotter type tools was designed and made with a power of 5 kw incorporating a rectifier and frequency converter. The frame of a horizontal milling machine was used. The component is clamped in a fixture insulated from the table. The electrolyte is fed by a hose and collected through another hose attached to the table. In machining with a disc face, the disc is sprung against the machined surface to ensure an elastic contact. The negative pole of the current source is

Card 2/5

Electro-Mechanical Machining of Very Hard Materials

SOV/122-59-5-21/32

connected to a slip ring on the tool spindle and the positive pole to the clamping fixture. An automatically controlled reciprocating operations cycle is incorporated. The arrangement of an elastic contact with the tool in the vertical direction is also illustrated. Replacing the disc type tool with an eccentric transforms the machine into a slotting machine. A typical set-up is illustrated (Fig 5), where the eccentric causes a slider to reciprocate by pressing against springs. Other springs transmit the slider motion to a reciprocating form tool (a turbine nozzle blade is shown as an example). The electrical circuit is shown, embodying connections to either a d.c. generator or a 200 cps high frequency generator. The latter is used for roughing work whilst the d.c. generator is used for finishing. Dimensional and performance data are given about this machine. It was found from experience that an improved surface finish sharply reduces the output. The finish machining of

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SOV/122-59-5-21/32  
Electro-Mechanical Machining of Very Hard Materials

large and complex surfaces, especially after heat and chemical treatment, is difficult because the thickness of the layer to be removed in this case must not exceed 50 microns. Heat and chemical treatment produces a layer of 0.2 - 0.3 mm thickness with a 4th grade of surface finish. Improving the finish requires the removal of a thin layer over the whole surface. For this purpose, an experimental prototype of an electro-mechanical polishing device was made. A flexible shaft driven spindle with an attached handle carries an electrode tool. The electrolyte is fed through a hose over the tool and collected on the mounting table under the component. The source of current is a selenium rectifier. The installation is a polishing bench working with a conducting abrasive electrode tool prepared by pressing a powder, pre-heated to 120-140°C, consisting of 100 parts (by weight) of boron carbide, 100 parts of silvered flake graphite, 45 parts of "Bakelite" type resin and

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Electro-Mechanical Machining of Very Hard Materials

SOV/122-59-5-21/32

10 parts of gypsum. In finishing with these tools,  
it is possible to produce a 14th grade of surface  
finish. There are 8 figures 3 tables.

Card 5/5

15(2)

SOV/170-59-6-16/20

AUTHORS: Artamonov, A.Ya., Radnysel'skiy, I.D., Troshchenko, V.T.

TITLE: Investigation of the Effect of Electromechanical Treatment on the Strength of Metal Ceramic Materials on a Silicon Carbide Base

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 6, pp 100-103 (USSR)

ABSTRACT: The ordinary mechanical working of materials based on silicon carbide is rather difficult in view of their considerable hardness. Therefore, the authors studied a possibility of applying electromechanical working and its effect on the strength of metal ceramic materials. The specimens were prepared by the powder metallurgy method with impregnation and divided into 6 portions, one of which was left without working and the other five were subjected to electromechanical working with different degrees of fineness on a special installation. The effect of treatment on the strength was investigated by statical bending with a concentrated force, and the results are presented in Table 1 and Figure 3. It is shown that the working affects the strength of the silicon carbide specimens considerably, and the latter

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SOV/170-59-6-16/20  
Investigation of the Effect of Electromechanical Treatment on the Strength of  
Metal Ceramic Materials on a Silicon Carbide Base

can be increased by as much as 55% as compared with the specimens  
not subjected to working.

There are: 1 photo, 1 diagram, 1 graph, 1 table and 1 American  
reference.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov, AN USSR (Institute  
of Metal Ceramics and Special Alloys of the AS UkrSSR), Kiev.

Card 2/2

ARTAMONOV, A.Ya. [Artamonov, G.Ya.]; FEDORCHENKO, I.M.

Effect of sintering temperature on the shape of pores in  
antifriction powder metal materials. Dop.AN USSR no.1:  
44-47 '60. (MIRA 13:6)

1. Institut metallokeramiki i spetsplavov AN USSR. 2. Chlen-  
korrespondent AN USSR (for Fedorchenko).  
(Sintering) (Porosity)



ARLAMONOV, A.Ya., YERMOLOVICH, Yu.B.

New method of determining the coefficient of friction and drag.  
Vop. por. met. i prochn. mat. no.8:99-102 '60.

(Clutches (Machinery)—Testing) (MIRA 13:8)  
(Friction)

S/122/60/000/010/011/015  
A161/A030

AUTHORS: Artamonov, A.Ya., Candidate of Technical Sciences;  
Ponomarenko, N.Ye., Engineer

TITLE: New Control System Automates Feed in Electromechanical Working

PERIODICAL: Vestnik mashinostroyeniya, 1960, No.10, pp.63-64

TEXT: A new electric control circuit for automatic feed in the electro-mechanical machining of carbides has been developed (Fig.1). It is simpler than the existing electric circuits reacting to changing current density and voltage, gives a considerably better surface finish and higher accuracy of dimensions, and increased output. The operation of the system is described in detail. The system includes a tool-electrode (2 in Fig.2), a reducing gear or shift gear box (4); ballast resistors ( $R_2$  and  $R_1$ ); control rheostats ( $R_2$  and  $R_3$ ); a two-winding motor (A) for machine table feed drive; shift gears for table feed ( $z_1$ ,  $z_2$ ); on-off key ( $K_1$ ) switching the system on and off; a reversive current switch (5); stops (6) for reversing the table travel. The motor torque and the rpm of the armature change

Card 1/3

S/122/60/000/010/011/015  
A161/A030



New Control System Automates Feed in Electromechanical Working

automatically for the removal of a different machining allowance ( $t_1$ ,  $t_2$ ,  $t_3$  in diagram Fig. 1). If a new allowance is set by vertical displacement of the machine table, the table will start a second pass. The rheostats control the system sensitivity and the work current. Generally speaking, the system automatically changes the table feed speed according to the machining allowance, and maintains constant current in the work circuit. It has been used for complex work of silicon and chrome carbide. Two attachments for machining a part of complex shape and of a drawing die are described. There are 4 figures.

Card 2/3

S/122/60/000/010/011/015  
A161/A030

New Control System Automates Feed in Electromechanical Working

Fig. 1: Electromechanical system of working plane

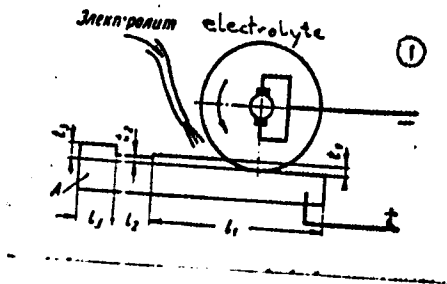
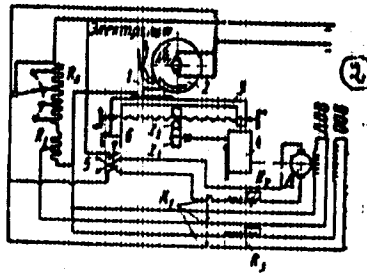


Fig. 2: Electric system of control unit



Card 3/3

35910

S/123/62/000/004/010/014  
A004/A101

11100  
AUTHOR:

Artamonov, A. Ya.

TITLE:

Mechanical working of cermet antifriction materials by cutting (as a discussion)

PERIODICAL:

Referativnyy zhurnal, Mashinostroyeniye, no. 4, 1962, 52, abstract  
4B317 ("poroshk. metallurgiya", 1961, no. 3, 63 - 74, English summary)

TEXT:

The author investigated the effect of the cutting conditions and geometric parameters of the cutting tool on the surface quality of components made of porous cermet materials. The tests were carried out with T15K6 and BK 8 (VK8) sintered carbide tools on pressed ferrographite specimens (P<sub>0</sub> + 3% C) of 10 - 35% porosity. It was found that T15K6 tools are most efficient for roughing operations, while VK8 tools are very effective for finish working. Also UM-332 (TSM-332) mineral-ceramic tools showed positive results. To improve the surface finish it is recommended to use tools suggested by Kolesov. To obtain a high compactness degree of the surface worked on, it is necessary to use the minimum tool rake angle (-15°), the maximum edge chamfering radius (3 mm), minimum feed (0.03 mm/rev) and a cutting speed of 300 m/min. If a condensation of the surface

Card 1/2

Mechanical working of...

S/123/62/000/004/010/014  
A004/A101

layer is not desirable, it is recommended to use a rake angle of  $+15^\circ$ , minimum cutting edge chamfering radius ( $r = 0$ ), a feed of 0.1 - 0.15 mm/rev and a cutting speed of 80 - 100 m/min. According to sanitary requirements, porous cermet parts are to be machined prior to being impregnated with oil. It was found that machining increases the resistance to wear by a factor of up to 7.5. The author presents a graph showing variations of the impermeability to gas of cermet materials of different porosity depending on the cutting conditions and tool parameters. There are 10 figures and 4 references.

I. Briskman

[Abstracter's note: Complete translation]

Card 2/2

X

13511  
8/123/62/000/011/007/011  
A052/A101

15,240  
AUTHORS: Artamonov, A. Ya., Radomysel'skiy, I. D., Troshchenko, V. T.

TITLE: The effect of machining on the strength of brittle sintered materials

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 11, 1962, 39, abstract 11B227 ("Poroshk. metallurgiya, no. 5, 1961, 65 - 68, English summary)

TEXT: The effect of machining on the strength of sintered materials on chromium carbide and silicon carbide base was investigated. Sintered materials on silicon carbide base were tested for strength prior to machining (after electro-mechanical processing), whereby a surface layer 0.5 - 0.6 mm thick was removed, and also after applying to the machined surface a silicon carbide layer. Sintered materials on chromium carbide base (9.4% C, 71.3% Cr, 15.3% Ni and 3.9% others) were subjected to static (pure bending) and fatigue tests prior to machining immediately after sintering, abrasive disk grinding and electromechanical processing. It is established that the electromechanical processing as well as the silicon impregnation process increase the static strength of sintered mate-

Card 1/2

The effect of machining on the strength of...

8/123/62/000/011/007/011  
A052/A101

rials on silicon carbide base prepared by the method of impregnation. Electro-mechanical processing of sintered materials on chromium carbide base does not reduce the static and fatigue strength, whereas abrasive grinding even under soft conditions reduces considerably both strength characteristics. Such a reduction of strength is caused by the formation in the process of grinding of a large number of superficial microcracks 5 - 10 mm wide (?) and up to 50 mm deep (?). The formation of these cracks is connected obviously with the heating of local surface sections which can produce considerable thermal stresses. It is pointed out that the strength of ground samples is similar to that of the samples with stress concentrators. The microcracks weaken the samples in the same way as the stress concentrators with a concentration factor of 3. The sensitivity to the stress concentration of sintered materials on chromium carbide base is 0.4. There are 5 references and 2 figures.

H. Spivak

[Abstracter's note: Complete translation]

Card 2/2



S/226/62/000,001/008/014  
1003/1201

*Author* Artamonov, A Ya and Zabolotny, L. V

*Title* EFFECT OF CERTAIN FACTORS ON THE QUALITY OF THE MACHINED SURFACE OF POROUS METAL POWDER MATERIALS.

*Periodical* Poroshkovaya metallurgiya, no. 1(7), 1962 57-60

*Text* The effect of the degree of wear of the cutter and the number of passes on the quality of the machined surface has been investigated. In the machining of porous bearings the wear of the cutter should not exceed 0.5 mm. The number of previous passes has no marked effect on the compression of the machined surface. There are 3 figures and 1 table.

*Association* Institut metallokeramiki i special'nykh splavov AN UkrSSR (Institute of Powder Metallurgy and Special Alloys AS UkrSSR)

*Submitted* June 26 1961

Card 1/1

33726

S/122/62/000/002/006/007  
D282/D301

11100

15 2400

AUTHORS:

Artamonov, A.Ya., Candidate of Technical Sciences, and  
Zabolotnyy, L.V., Engineer

TITLE:

Treatment of porous metal-ceramic materials by cutting

PERIODICAL:

Vestnik mashinostroyeniya, no. 2, 1962, 67-70

TEXT: The authors describe a series of experiments, conducted in the Institut metallokeramiki i spetsial'nykh splavov (Institute of Metal-Ceramics and Special Alloys) of the ASUSSR, to determine the effect of the cutting conditions and the geometry of the cutting elements of the tool on the quality of the worked surfaces of metal-ceramic materials. The material used for experiments consisted of 97% of pulverized  $AlTi \times MA$  (APZhMA) iron and 3% of silvery graphite. Test specimens of 10, 15, 20, 30, and 35% porosity were compressed and baked at 1050 C for 2 hours in dry hydrogen atmosphere. The results of the experiments were tabulated and analyzed and the following conclusions reached: The degree of compactness of the worked surface can be regulated by changing the

Card 1/2

33726

Treatment of porous metal...

S/122/62/000/002/006/007  
D282/D301

front angle of the tool; the finish of the surface improves and the degree of the surface compactness increases with that of the rounding radius of the cutting edge, and the increase of cutting speed; it is also higher when the feed is slow (0.06 - 0.03 mm/rev.); wearing qualities and gas permeability improve after machining and the coefficient of friction before and after machining remains almost the same. Cutting tools used for carbon steels are also recommended by the authors for machining metal-ceramic materials. There are 1 figure, 4 tables and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. X

Card 2/2

S/226/32/000/003/010/014  
1003/1203

AUTHOR: Artamonov, A. Ya.

TITLE: An investigation of the sizing process of porous bearings

PERIODICAL: Poroshkovaya metallurgiya, no. 3, 1962, 69-79

TEXT: This article recommends permissible allowances in the sizing of porous bearings, determined by the elastic after-effects in the sized product. The sizing process, the structure, porosity and dimensions of the bearings influence the degree of plastic deformation of their upper layers, as well as the value of the plastic after-effects and the applied pressure. The advantage is stressed of combined sizing over sizing of each surface separately. Formulae are given for basic dimensions of the dies permitting production of porous bearings by the combined method. The dimensions of the die and core rod respectively for iron-graphite bushing sintered at 1050°C are:

$$D_d = D_s \left( 1 - \frac{\Delta D - K}{100} \right) + m$$

$$d_{c.r.} = d_s \left( 1 - \frac{\Delta D - K}{100} \right) + m$$

✓

Card 1/2

An investigation of the...

S/226/62/000/003/010/014  
1003/1203

The dimensions of the die and core rod for sizing of iron powder bushings sintered at 1200°C and for sizing of iron-graphite powder bushings sintered at 910°C are given by:

$$D'd = D_s \left( 1 - \frac{\Delta D - \Delta D_r}{100} \right) + m$$

$$d_{c,r} = d_s \left( 1 - \frac{\Delta d - \Delta d_r}{100} \right) + 0.25 m$$

There are 3 figures and 8 tables.

ASSOCIATION: Institut metallokeramikii spetsial'nykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys AS UkrSSR)

SUBMITTED: January 9, 1962

Card 2/2



**AUTHOR:** Grigor'yeva, V. V. and Artamonov, A. Ya.  
**TITLE:** Chromium carbide hard alloys for drawing dies

S/226/62/000/003/012/014  
1003/1203

**PERIODICAL:** Poroshkovaya metallurgiya, no. 3, 1962, 86-88

**TEXT:** The friction coefficient of a chromium carbide-base hard alloy when compared with those of hardened and tempered Y8A (U8A) and P18 (R18) alloy steels and with BK-15 (VK-15) hard alloys shows that the U8A and R18 steels are less suitable for the manufacturing of drawing dies than a chromium carbide-base powder alloy. The suitability of the latter for drawing dies was confirmed by tests, which showed that the durability of dies made of this material is 40-50 times that of carbon steel, and differs little from that of drawing dies made of the BK-8 (VK-8) hard alloy. The new sintered chromium carbide-base alloys can be recommended for all cases of drawing without lubricants, when pressures do not exceed 600-650 kg/mm<sup>2</sup>. There are 2 figures.

**ASSOCIATION:** Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institut of Powder Metallurgy and special Alloys AS UkrSSR)

**SUBMITTED:** January 29, 1962

Card 1/1

S/885/62/000/000/012/020  
E194/E155

AUTHOR: Artamonov, A.Ya.

TITLE: A brake rig for testing metallo-ceramic frictional materials

SOURCE: Metody ispytaniya na iznashivaniye; trudy sovetskaniya, sostoyavshegosya 7-10 dek. 1960. Ed. by M.M. Khrushchov. Moscow, Izd-vo AN SSSR, 1962. 114-118

TEXT: A need was felt for a test rig which would quickly give comparative data on metallo-ceramic materials produced by the techniques of powder metallurgy which are becoming increasingly used in brakes, e.g. for railway wagons. Existing testing machines are generally too big. The Institut metallokeramiki i spetsialnykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys, AS Ukr.SSR) has designed a new rig useful either as a normal friction machine with constant applied torque or as an inertia rig in which a flywheel is retarded. The electric motor is connected by a flexible coupling to a variable-speed drive which through a friction clutch, drives the drum carrying the specimen and the flywheel. The speed range is 300 - 3000 r.p.m.  
Card 1/2

AMTAMONOV, A.Ya.; ZABLOTONYY, L.V.

Effect of certain factors on the quality of polished surfaces  
on porous ceramic metal materials. Porosh.met. 2 no.1:57-60  
Ja-F '62. (MIRA 15:8)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.  
(Ceramic metals) (Surfaces (Technology))



ARTAMONOV, A.Ya.

Strength of coupling of porous bearings with shell sockets.  
Porosh.met. 1 no.6:90-97 N-D '61. (MIRA 25,5)

1. Institut metalloberamki i spetsial'nykh splavov AN UkrSSR.  
(Powder metal products—Testing)

ASTAMONOV, A. Ya., kand. tekhn. nauk

Effect of cutting conditions on the quality of machined  
surfaces of porous ceramic-metal materials, Mashinostroenie  
no. 5792-35 S-O '62. (MIRA 16s1)

1. Institut metallokeramiki i spetsial'nykh splavov IN UkrSSR.

(Metal cutting) (Ceramic metals)

ARTAMONOV, A.Ya.

Sizing of porous ceramic metal bearings. Porosh. met, 2 no.2:  
99-105 Mr-Ap '62. (MIRA 16:5)

1. Institut metallokeramiki i spetsial'nykh splavov All UkrSSR.  
(Metal powder products) (Metals—Finishing)

АБТАМОНОВ, А.Я., канд. техн. наук; ЗАБОЛОТНЫЙ, Л.В., инж.

Effect of cutting conditions on the smoothness of the surface  
of porous ceramic-metal materials. Vest. mashinost. (MIRA 16:3)  
43 no. 2:48-51 P '63.  
(Ceramic metals—Testing)

ANTAMONOV, A.Ia.; SHVEDKOV, Ye.I.

Effect of treatment on the strength of extremely hard materials.  
Porosh. met. 3 no.1:79-82 Ja-F '63. (MIRA 16:3)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.  
(Ceramic metals--Testing) (Electric metal cutting)

ARTAMCNOV, A.Ya.; KOZACHENKO, M.V.

Methods of determining the true resistance to compression of porous ceramic metal materials. Porosh.met. 3 no.3:81-87 Mye. Je '63. (MIRA 17:3)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.

AFRANKOV, V.Y.; BURCHENKO, D.A.

Work-hardening of the surface layers in the sizing process of ceramic metal bushings. Porosh. met. 4 no.6449-53 N-D '64.  
(MIRA 18:3)

1. Institut problem materialovedeniya AN UkrSSR.

ARTAMONOV, A. Ya., kand. tekhn. nauk

Surface layer of porous ceramic-metal materials subjected to  
cutting. Vest. mashinostr. 44 no.11:62-67 N '64 (MIRA 18:2)



I 39772-65 EWP(a)/RPA(a)-2/EPT(a)/EWP(w)/EPT(c)/EWP(l)/EPT(s)-2/RPA(m)/  
EPT(d)/EPT(e)/EPT(f)-2/EPT(g)/EPT(h)/EPT(i)-2/EPT(j)/EPT(k)-2/EPT(l)/EPT(m)-2/EPT(n)/  
EPT(o)/EPT(p)-2/EPT(q)/EPT(r)/EPT(s)-2/EPT(t)/EPT(u)-2/EPT(v)/EPT(w)-2/EPT(x)/EPT(y)-2/EPT(z)

ACCESSION NUMBER: 9/0224/611/0001/0-1R/0071/0077

AUTHOR: АЛЕКСАНДРОВ, А. Я.; КОРАЧАНСКО, М. В.

TITLE: Resistance of porous ceramic materials to triaxial compression

SOURCE: Poroshkovaya metallurgiya, no. 2, 1965, 71-77

TOPIC TERMS: cermet, porous material, material forming, high temperature pressing

ABSTRACT The triaxial compression method is used for determining the basic characteristics of the resistance to deformation of porous materials. This method may be used for evaluating the stressed state of the material during cutting, gauging and pressing as well as when testing the materials for wear and friction. Cylindrical samples 15 mm in diameter and 10 mm high with a porosity of 15-45% were tested. These samples were pressed from AP-100 iron powder and sintered for 2 hours at 1150°C. Curves are given for comparison of the material and deformation of the samples in uniaxial compression conditions. These curves show that the relationship between pressure of compression and compactness of the porous body passes through three distinct stages: a region of

Card 1/1

L 39773-65

ACCESSION NR: AP5006194

elastoplastic deformations where an increase in the stresses causes insignificant deformation: a region of intensive compaction of the material where an insignificant increase in stresses is connected with a sharp change in porosity; a region of intensive hardening of the material where the change in porosity is practically independent of a further increase in stresses. For the given test conditions, the compaction curves converge at a load of approximately  $16 \cdot 10^5$  newtons independently of the initial porosity of the material being deformed. Additional experiments were conducted for a more detailed study of the state of the material in each of the regions. The results of these studies showed that deformation of porous materials in conditions of triaxial compression is accompanied by a continual increase in the hardness of the material which is particularly intense at the end of the second and third regions. The strength characteristics and ultimate shearing strength of the material are considerably dependent on the initial porosity and on phenomena connected with compaction of the porous body. Recommendations are given for evaluating the stressed state of the material during triaxial compression. Orig. art. has: 5 figures, 6 formulas.

ASSOCIATION: Institut problem materialovedeniya AN USSR (Institute of

Card 2/3

L 39773-115

ACCESSION NR: AP5006194

Problems in the Study of Materials, [USSR]

SUBMITTED: 26Jul63

INCL: 00

SUB (X) 001

NO REF 807: 013

OTHER: 001

892

Card 3/3

ARTAMONOV ... U.S.

Residual macrostresses during the mechanical working of porous  
ceramic metal materials. Porosh. met. 3 no. 7053-57 J1 '65.  
(DURA 18:8)

1. Institut problem materialovedeniya AN U.S.S.R.

ARTAMONOV, A.Ya.; BEZYKORNOV, A.I.

Durability of cutters in cutting porous ceramic metal materials.  
Porosh. mat. 5 no.8:108-111 Ag '65. (MIRA 18:9)

1. Institut problem materialovedeniya AN UkrSSR.

ARTANOV, Aleksandr Yakovlevich; FILATOVA, T.A., red.

[Effect of the conditions of working on the physico-  
mechanical state of ceramic metal materials] Vliianie  
uslovi obrabotki na fiziko-mekhanicheskoe sostoianie  
metallo-keramicheskikh materialov. Kiev, Naukova dumka,  
1965. 262 p. (NIRA 18:11)

I 23502-66 EWA(h)/EWP(k)/EWT(m)/EWA(d)/EWP(a)/EWP(n)/EWP(t) IJP(a) MEAM/DJ/  
 ACC No. AP6009611 MJW/JD/90 SOURCE CODE: UR/0369/66/002/001/0084/0088

AUTHOR: Artamonov, A. Ya.; Mamykin, E. T.

ORG: Institute of the Science of Materials, AN Ukr SSR, Kiev (Institut problem materialovedeniya AN Ukr SSR)

TITLE: Interaction of materials with lubricants in the process of friction

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 3, no. 1, 1986, 84-88

TOPIC TAGS: lubrication, lubricating oil, film lubrication, antifriction material, cermet, porosity

ABSTRACT: A study has been made to improve the capacitor method of measurement for the oil film thickness between rubbing surfaces and to determine the causes of the break down of this film in friction couples involving porous cermets and solid materials. The tests were made on an MT-3 machine described and diagrammed in the original article. SU brand oil was used as the lubricant. Cermets from APZhMa brand iron powder, having 10-30% porosity, sintered in dry hydrogen at 1150 C were tested. The solid materials (BR3 babit), OPT bronze, and steel 30 were tested for comparison. It was found that the behavior of the

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ACC NR: AP6009611

lubricant in the clearance space between the rubbing surfaces depends not so much on the method of lubricant feeding to the friction zone as on the condition of the surface layer formed in the process of friction. In view of the different metal-  
bility and different chemical interaction of the lubricant with surfaces of different chemical composition, the nature of the material of the friction couple is of particular importance. Porosity substantially improves lubrication of the rubbing surfaces. However, in the case of forced feed of the lubricant into the clearance space, a too high initial porosity has a detrimental effect. In such a case, a material with 10-15% porosity has optimum properties. Orig. art has: 8 figures.

SUB CODE: 11/ SUBM DATE: 15Oct64/ ORIG REF: 008/ [SM]

Card 2/2 *20*



ACC NR: AM6001045 EWI(m)/I/EWA(d)/EWP(e)/EWP(t) L/P(s) WH/WJ/JD  
Monograph

Artamonov, Aleksandr Yakovlevich

Influence of the conditions of treatment on the physico-mechanical state of ceramic metal materials (Vliyaniye usloviy obrabotki na fiziko-mekhanicheskiye sostoyaniye metallokeramicheskikh materialov) Kiev, Izd-vo "Mashyna zhuka", 1965. 262 p. illus.,, biblio. 2,000 copies printed.

TOPIC TAGS: metal finishing, metal cutting, powder metallurgy, metal ceramic material, metal surface, cold hardening, metal property, antifriction material, antifriction bearing

PURPOSE AND COVERAGE: This monograph presents methods and results of a study of the quality of finished surfaces of cleanliness, cold hardening of the material, tension of the sample and degree of compression of a porous frame with cutting and calibration of anti-friction metal ceramic materials. Also given are basic parameters of regimes of calibration and cutting, the use of which secures a high-quality finished surface of parts prepared by the method of powder metallurgy. This book is recommended for technical engineers in mechanical engineering using metal ceramic materials and in specialized factories of powder metallurgy. It is also useful to assistants in factory laboratories and scientific study institutes.

Card 1/2

UDC: 629.3.186

ACC NR: A16001045

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Ch. I. Object and methods of study -- 28

Ch. II. Study of several problems of the deformation of porous materials -- 44

Ch. III. Influence of the conditions of cutting on the quality of finished surfaces -- 102

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Ch. V. Results from testing porous metal ceramic materials with abrasion and friction -- 194

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SUB CODE: 11, 13/ SUBM DATE: 21Aug65/ Orig REF: 192/ OTH REF: 020

Card 2/2 CC

ACC NR: AP6015350

(A)

SOURCE CODE: UA/0226/66/000/005/0029/0031

AUTHORS: Artamonov, A. Ya.; Bovkun, G. A.

ORG: Institute for Problems of Material Applications of the AN UkrSSR (Institute problem materialovedeniya AN UkrSSR)

60  
56  
B

TITLE: Materials for surface protection against abrasive wear

SOURCE: Poroshkovaya metallurgiya, no. 5, 1966, 29-31

TOPIC TAGS: wear, stellite, cermet wear material, cermet, protective coating, surface coating / KBKh45 cermet, T-620 cermet, T-590 cermet, EP-303 cermet, TiC + 30% NiCr cermet, KTS cermet, KTZh cermet.

ABSTRACT: Abrasive wear resistance of a number of cermets was investigated on apparatus Kh4-B using previously described techniques (Ispytaniya na abrazivnoye iznashivaniye na mashine Kh4-B, Izd-vo AN SSSR, M., 1962). Cylindrical specimens 2-mm in diameter were tested at a specific pressure of 95.5 Mn/m<sup>2</sup> for a total of 30-m travel. Besides a check specimen of USA steel, cermets based on titanium and chromium carbides with chromium nickel and nickel bonding were investigated. The maximum specific wear resistance of titanium and chromium carbide cermets was found to be at a 30% nichrome and at a 10% nickel content respectively (c = 4 and 11 respectively). Comparative tests with existing coatings showed the superiority of the new materials as per the following listing of relative wear resistances: KBKh45 - 2.74; T-620 -

Card 1/2

L 07987-67

ACC NR: AP6015350

2.68; T-590 -- 3.24; stellite -- 1.37; RP-303 -- 3.9; TiC + 30% NiCr -- 3.96;  
 $Cr_3C_2 + 10\% Ni$  -- 10.6;  $TiB_2 + B_4C$  -- 10.8; KTS -- 16.8; KP22h -- 0.28. Orig. art.  
 has: 1 table and 2 figures.

SUB CODE: 11/ SUBM DATE: 07Jan66/ ORIG REF: 011/ OTH REF: 002

Card 2/2 *gf*

ACC NO: APO032299

(A)

SOURCE CODE: UR/0226/66/000/009/0055/0060

AUTHOR: Artamonov, A. Ya.; Bezukor nov, A. I.; Ivanov, A. N.

ORG: Institute of Problems in the Science of Materials, Academy of Sciences, UkrSSR  
(Institut problem materialovedenya, AN UkrSSR)

TITLE: Investigation of the abrasive capacity of refractory compounds

SOURCE: Poroskovaya metallurgiya, no. 9, 1966, 55-60

TOPIC TAGS: refractory carbide, refractory boride, refractory compound, refractory  
~~compound~~ ~~abrasive capacity~~, tungsten boride, tungsten compound, boride, abrasive

ABSTRACT: Several refractory compounds, such as borides of zirconium, titanium, molybdenum, chromium, and carbides of boron, titanium and zirconium, have been tested for abrasive capacity and improved methods of evaluating the abrasive capacity have been developed. It was found that some refractory compounds possess higher abrasive capacities than some of the conventional abrasives. For instance, the abrasive capacity of tungsten boride (0.233) is higher than that of synthetic corundum and tungsten boride (and some other compounds) does not react chemically with titanium or its alloys. Orig. art. has: 3 figures and 2 tables. [TD]

SUB CODE: 11/ SUBM DATE: 09Mar66/ ORIG REF: 009/ OTH REF: 001

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APG034021

SOURCE CODE: UR/0226/66/000/010/0004/0090

AUTHOR: Artamonov, A. Ya. ; Kononenko, V. I.

26

ORG: Institute for Problems in the Science of Materials, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Investigation of hard-alloy tool life during cutting of porous powder-metal materials

SOURCE: Poroshkovaya metallurgiya, no. 10, 1966, 84-90

TOPIC TAGS: tool life, tool, tool material, cutting tool, powder metal

ABSTRACT: Investigations have shown that the tool-life curves of BK 8, T15K6, and TsM-332 hard-alloy cutters produced by machining porous powder metal parts are of a non-monotonous character, which indicates a verity of factors determining the nature of wear of the cutting tool. It is very difficult to attribute the shape of the curves solely to the adhesive and diffusive processes. The presence of other types of tool wear, such as oxidation, abrasiveness, thermal fatigue, etc., is probable; these can be determined only by special investigations. Reliable complete data on the wear mechanics will facilitate the production of new tool materials for

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ACC NR: AP6034021

specific purposes. It is established that monocarbide hard alloys are the best tool materials for machining porous metals. TsM-332 was found to be the least suitable tool material for machining. [Based on authors' abstract]

SUB CODE: 11/ SUBM DATE: 16Mar66/ORIG REF: 013/

Card 2/2 *ml*

AUTHOR: Artamanov, A. Yu.

S/226/62/000/002/010/010  
1003/1203

TITLE: Sizing of porous metal powder bearings

PERIODICAL: Poroshkovaya metallurgiya, no. 2 1962, 99-105

TEXT: The process of sizing is not only a means of obtaining a desired shape and size of sintered powder bearings, but also as a factor for determining serviceability. The process of combined sizing is most favorable because it enables simultaneous sizing of both internal and external surfaces to impart good mechanical properties to the working surfaces of the bearings, provided the dimensions of the sizing dies and core rods were properly chosen. The formulae:

$$D_d = D_e \left( 1 - \frac{\Delta D - \Delta D_y}{100} \right)$$

$$d_{c.r.} = d_f \left( 1 - \frac{\Delta d - \Delta d_y}{100} \right)$$

enable the calculation of the dimensions of sizing dies and core rods respectively. The turning of metal powder porous bearings is more favorable than sizing, because it removes surface roughness, and does not "smear" as is the case with sizing. The usual methods of sizing do not remove the eccentricity of the external and internal surfaces, and therefore bearings that require exact dimensions should be sized with special dies or turned on a lathe. There are 4 figures and 1 table.

Card 1/2



POGODIN-ALEKSEYEV, G.I.; ARTAMONOV, B.A.

Method of measuring specimen deflection in drawing diagrams for  
dynamic bending. [Trudy] MVTU no.41:233-235 '55. (MIRA 9:10)

(Flexure)

S/129/61/000/003/009/011  
E073/E535

**AUTHORS:** Pogodin-Alekseyev, G. I., Honoured Scientist and  
Artamonov, B. A., Engineer

**TITLE:** Diagram of Deformation of Steel Quenched from the  
Temperatures  $A_{c1}$  -  $A_{c3}$

**PERIODICAL:** Metallovedeniye i termicheskaya obrabotka metallov,  
1961, No.3, pp.47-51

**TEXT:** The authors studied the dynamic and static strength of steel after quenching from the most characteristic recrystallization temperature range. From normalised blanks of steel (0.24% C, 0.60% Mn, 0.37% Si and 0.83% Cr) specimens of 10 x 10 mm cross-section and 55 mm long were produced. No notch was made so as to avoid creating a three-dimensional stress state and to avoid high relative errors in measuring the mechanical properties. Specimens in batches of five were heated to the test temperatures (700, 720, 740, 750, 760, 780, 790, 800, 820, 840, 860 and 880°C) in boric acid, held at the temperature for 40 min and then tempered for two hours at 100°C to reduce the internal stresses. After determining the hardness, the specimens were subjected to impact-bending

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Diagram of Deformation of ...

S/129/61/000/003/009/011  
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tests by means of an impact machine with a maximum energy of 35 kgm. In addition to the work required for the fracturing, the residual bending was determined and, for unfractured specimens, the angle of elastic rebound of the impact pendulum was measured. The average results for specimens quenched in water from various temperatures are given in Fig.1, showing the hardness HB, the work required for fracturing the specimen  $A_k$ , the bending arc  $f$  and the angle of elastic rebound  $\beta$  of specimens from the steel 20X (20 Kh) after heating to 700-880°C and quenching in water. Specimens without quenching (heating temperature 700-750°C) and also specimens quenched from 820-880°C proved to have the highest toughness. Specimens quenched from 760-800°C showed a sharp drop in the impact strength and ductility. Particularly characteristic is the change in impact plasticity; the flexure arc of non-quenched specimens (heating to 700-750°C) equalled 15.6 mm, whilst for specimens quenched from temperatures not exceeding greatly the  $A_{c1}$  temperature the arc decreased to 4.8 mm, increasing again to 6.7-6.9 mm at quenching temperatures of 800°C and above. An increase in the angle of rebound of the pendulum from 4.5° for non-quenched

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Diagram of Deformation of ...

S/129/61/000/003/009/011  
E073/E535

specimens to 11° for specimens quenched from 820°C and higher temperatures indicates a considerable increase in strength with increasing quenching temperature. This leads to an increase in the toughness of the specimens which is more intensive than the increase in ductility. Therefore, specimens without notches quenched from temperatures above 800°C did not fracture during the tests. Thus, the preliminary investigations showed a sharp decrease in plasticity and toughness of steels quenched from temperatures that did not exceed greatly the temperature of pearlitic-austenitic transformation, which was in agreement with earlier made observations on other steels and was designated by the authors as "recrystallization brittleness". The authors considered it of interest to study in detail the strength of steel quenched from the temperature of maximum embrittlement during recrystallization (770°C) and to compare the properties of such steel with the corresponding properties of steel which has not been quenched and also of steel which has been given the full quenching treatment. From the obtained results, diagrams of static and impact deformation during bending of the specimens were plotted for the following

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Diagram of Deformation of ...

S/129/61/000/003/009/011  
E073/E535

three types of heat treatment: a) normalisation at 870°C, b) normalisation, quenching from 770°C and tempering at 100°C (maximum embrittlement after quenching), c) normalisation, quenching from 880°C and tempering at 100°C (normal full quenching treatment). The average values are given in Fig.2 in terms of the flexure arc  $r$  in mm as a function of the applied force  $P$ , kg. Curves 1 - static deformation, curves 2 - impact deformation (method of elastic characteristics), curves 3 - impact deformation (method of plastic characteristics). The plot, Fig.2a, relates to normalised specimens; plot Fig.2b relates to specimens which were normalised, quenched from 770°C and tempered at 100°C; plot, Fig.2c, relates to specimens which were normalised, quenched from 880°C and tempered from 100°C. It can be seen that dynamic application of the load increases appreciably the yield point, particularly for steels with a high ductility. There are 3 figures, 1 table and 4 Soviet references. ✓

Card 4/6

S/052/62/028/002/023/037  
B124/B101

AUTHORS: Pogodin-Alekseyev, G. I., and Artamonov, B. A.

TITLE: Methods of plotting deformation diagrams by impact tension of steel

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 3, 1962, 215-219

TEXT: An attempt has been made to extend the range of application of impact tests performed with a pendulum impact machine lifted to different amplitudes, and to carry out a comparative study of plastic and elastic properties of steels exposed to tensile stresses, with either the sag or the angle of resilience of the pendulum after deformation of the sample being measured. 20X (20Kh) and 40X (40Kh) steels were tested, the former after normalizing for 20 minutes, and the latter after oil hardening at 850°C and tempering at 500°C. The following mechanical properties were established by static tensile tests: tensile strength  $\sigma_S = 35.3 \text{ kg/mm}^2$ , ultimate tensile strength  $\sigma_B = 52.1 \text{ kg/mm}^2$ , relative elongation  $\delta = 24.5\%$ .  
Card 1/3

Methods of plotting deformation ...

S/032/62/028/002/023/037  
B124/B101

and reduction of cross-sectional area  $\Psi = 72.1\%$  for 40Kh steel; the corresponding values for 40Kh steel were 97.8; 106.2; 10.7%, and 56.3%. Dynamic elongation was measured with the standard ram impact machine MK-30 (MK-30) with 18 adjustable amplitude positions of the pendulum. The sample was used as dynamometer in each case. The amount of elastic energy  $A_{el}$  for sample deformation can be calculated from the angle of resilience. Elastic deformation stress is given by

$$P = \frac{\sqrt{2EF}}{l_0} A_{el} = a\sqrt{A_{el}} \quad (1). \quad \text{Its mean value is } P_{mean} = \frac{\Delta A}{\Delta(\Delta l)} \quad (2), \text{ where } \Delta A$$

is the increment of energy spent on transition from one amplitude position to the other, and  $\Delta(\Delta l)$  is the corresponding increment of absolute

elongation of samples. In addition,  $P_{mean} = \frac{\Delta A_{total}}{\Delta(\Delta l_{pl})} \quad (2a)$ , where  $\Delta A_{total}$  is the total increment of resilience, and  $\Delta l_{pl}$  is the absolute plastic

elongation, and  $P_{mean} = \frac{\Delta A_{total} - \Delta A_{el}}{\Delta(\Delta l_{pl})} \quad (2b)$ . Values of elastic deformation

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I 42968-65 EMT(d)/EMT(m)/EMP(w)/EMP(v)/EPR EM  
ACCESSION NR: AR5008932

8/0277/05/000/0011/0030/0218

SOURCE: Ref. zh. Mashinostroitel'nyye materialy, konstruktatsiya i raschet detaley mashin. Otdel'nyy vyp. , Abs. 2. 48. 227

AUTHOR: Pogodin-Alekssey, G. I.; Artamonov, B. A.

TITLE: Impact strength and strain diagrams of steel subjected to bending impact

CITED SOURCE: Sb. Metallovedeniye i term. obrabotka. M. , Mashinostroyeniye, 1964, 146-158

TOPIC TAGS: impact strain diagram, oscillogram method, pendulum hammer method, impact strength, variable safety factor, impact tester, plastic microstrain, impact yield point, steel bending strength

TRANSLATION: The authors compared impact strain diagrams obtained either with standard pendulum hammers or oscillographically by the use of modern electronic equipment. Series of samples from different steels were subjected to successive tests on impact testers with a varying safety factor, which increased to the point of failure. The magnitude of impact stress was determined from increases in the safety factor and bending deflection at the end

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ACCESSION NR: AR5008932

of a stage, as well as from the extent of the hammer's elastic recoil after an impact. Tests demonstrated that numerical values of strength obtained from oscillograms approximate those derived by means of the strain characteristic method. Further, that methods of plotting impact strain diagrams during serial tests on impact tests with a variable safety factor provide adequately accurate results and can be recommended for evaluating the impact strength of metals. Oscillography disclosed periodic stress discontinuities in the elastic deformation region (indicating the presence of plastic microstrain at stress levels comprising 1/3 to 1/6th of stress levels at yield point) and peaks of impact yield point for the tested steels. Bibli with 17 titles; 8 illustrations.

SUB CODE: MM

ENCL: 00

BA  
Cald 2/3

ACC NR. AP6029969

(A)

SOURCE CODE: UR/0413/66/000/015/0161/0161

3

INVENTOR Fomenko, L. A.; Bashirov, R. Z.; Komissarov, A. H.; Vasilenko, R. E.; Drozdov, S. F.; Serdyuk, T. I.; Artamonov, B. F.; Pozdnyakov, Z. G.

38

8

ORG: none

TITLE: Unit for the continuous production of granulated ammonium nitrate based commercial explosives. Class 78, No. 184675

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 161

TOPIC TAGS: commercial explosive, ammonium nitrate, *EXPLOSIVE, CONTINUOUS PRODUCTION UNIT, CHEMICAL PLANT EQUIPMENT*

ABSTRACT: A commercial unit for the continuous production of granulated ammonium nitrate based commercial explosives consists of crushing and screening sections, a suspended screw conveyor dosage system with synchronized operations, a mixing drum, a semi-automatic device for weighing and packing the product, and a remote control system. In order to use this unit for the production of multicomponent explosives, e.g., a three-component explosive, and to improve the quality of mixing, a pipe-line from a wheel-pump is connected to the screw conveyor for feeding the liquid component into the conveyor; the feed bin of the suspended conveyor dosage system is connected to a pneumatic conveyor which supplies the powdered component, and the mixing drum is connected to a tubular pneumovibrator. To provide the crushing of the laminated trotyl during the transportation in the pneumatic line described above, the

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UDC: 662.22

ACC NR. AP6029969

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pneumatic conveyor system is made with elbowed turns, e.g., 90°, and the transportation proceeds at a velocity of 5 m/sec under 3 atm pressure. To supply the liquid component in the required amount, the wheel pump is equipped with a speed regulator connected to the suspended conveyor dosage system for synchronized operation. To prevent dust from the powder component and to remove the static electricity, the pneumatic conveyor system has a cyclone-precipitator, equipped with a valve for the automatic discharge of the precipitate from the cyclone into the feed bin, and the flexible powder-supply line is equipped with a current collector. [PS]

SUB CODE: 19/ SUBM DATE: 16Nov64/ ATD PRESS: 5074

Card 2/2 blg

ARTAMONOV, B.I.

Combined heating in gluing veneer sheets with carbamide resins.  
Der. prom. 13 no.4:10-11 Ap '64. (MIRA 17:4)

1. Moskovskiy lesotekhnicheskii institut.