

KRYLOV, V., podpolkovnik; ZUYEV, M., inzh.-kapitan

Crane arm. Tankist no.7:45-47 J1 '58.  
(Cranes, derricks, etc.)

(MIRA 11:10)

KRYLOV, V.A., inzh.; LEVIN, Yu.I., inzh.

Assembling equipment in open-hearth plants. Nov. tekhn. 1 pered.  
op. v stroi. 20 no.2:1-6 F '58. (MIRA 11:2)  
(Open-hearth furnaces)

KEYLOV, V.A., inzh.

Assembling bridge cranes without using poles. Nov. tekhn. i pered.  
op. v stroi. 20 no.9:6-9 S '58. (MIRA 11:10)  
(Cranes, derricks, etc.)

05(1)

PHASE I BOOK EXPLOITATION

SOV/3284

Butenko, N. L., Engineer, L. D. Ginzburg-Shik, Engineer, K. S. Yevtyukhov, Engineer, V. A. Krylov, Engineer, I. I. Mikheyev, L. M. Khinkis, Engineer, B. Z. Chérnyak, Candidate of Technical Sciences, and V. N. Yakovlev, Engineer.

Spravochnik po montazhu zavodskogo oborudovaniya (Handbook on Assembling and Installation of Plant Equipment) Moscow, Mashgiz, 1959. 828 p. Errata slip inserted. 20,000 copies printed.

Ed. (Title page): V. N. Yakovlev, Engineer; Ed. (Inside book): G.A. Molyukov, Engineer; Tech. Ed.: A. Ya. Tikhonov; Managing Ed. for Handbook Literature (Mashgiz): I. M. Monastyrskiy, Engineer.

PURPOSE: This book is intended for technical personnel engaged in the installation and erection of industrial equipment.

COVERAGE: The book contains a set of instructions and engineering data on equipment, devices, and tools used in the installation and erection of industrial equipment and machinery. Installation Card 1/4

Handbook on Assembling and Installation (Cont.) SOV/3284

procedures for various machines, pneumatic, hydraulic and lubricating systems are explained. The book also discusses safety regulations and fire prevention instructions to be observed during various operations. The text contains numerous graphs, tables and illustrations. No personalities are mentioned. There are 7 Soviet references.

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PART III. INSTALLATION OF LUBRICATING, PNEUMATIC  
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PART IV. SAFETY ENGINEERING AND FIRE REGULATIONS DURING  
INSTALLATION OF EQUIPMENT (YEVTYUKHOV, K.S., ENGINEER)

AVAILABLE: Library of Congress

Card 4/4

VK/mg  
4-26-60

KRYLOV, V.A.; SIMACHEV, L.V.; GURVITS, A.I., inzh., nauchnyy red.;  
VOLNYANSKIY, A.K., glavnyy red.; SOKOLOV, D.V., zam.glavnogo red.;  
TARAN, V.D., red.; SEREBRENNIKOV, S.S., red.; MIKHAYLOV, K.A.,  
red.; STAROVEROV, I.G., red.; VOLODIN, V.Ye., red.; NIKOLAYEVSKIY,  
Ye.Ye., red.; GORDIYEV, P.A., red.izd-va; UDOD, V.Ye., red.izd-va;  
EL'KINA, E.M., tekhn.red.

[Reference book on special work; mechanical assembly work in  
industrial construction] Spravochnik po spetsial'nym rabotam;  
mekhanomontashnye raboty v promyshlennom stroitel'stve. Moskva,  
Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960.  
498 p. (MIRA 14:4)

(Machine-shop practice)



KRYLOV, V.A., inzh.

Assembling cooling systems of blast furnaces. Mont.i spets. rab.  
y stroi. 22 no.6:4-9 Je '60. (MIRA 13:7)  
(Blast furnaces--Cooling)

KRYLOV, V.A., inzh.

Strength characteristics of the 2D100 diesel block. Trudy  
TSNII MPB no. 202:134-148 '60. (MIRA 13:12)  
(Diesel locomotives)

KRYLOV, V. A., CAND TECH SCI, "<sup>Study</sup>INVESTIGATION OF THE  
STRESSED STATE AND VIBRATION<sup>ed</sup> STRENGTH OF WELD<sup>id</sup> BLOCKS  
OF DIESEL ENGINES." MOSCOW, 1961. (MPS-SSR<sup>g</sup> MINISTRY  
OF RAILWAYS<sup>g</sup> USSR. MOSCOW ORDER OF LENIN AND ORDER OF  
LABOR RED BANNER INST OF ENGINEERS OF RAILROAD TRANSPORT).  
(KL-DV, 11-61, 220).

-157-

PRIVALOV, Nikolay Nikolayevich; KRYLOV, Vladimir Aleksandrovich, inzh.;  
GURVITS, A.I., inzh., nauchnyy red.; YUDINA, L.A., red. izd-  
va; OSENKO, L.M., tekhn. red.

[Assembly of the mechanical equipment of blast furnace plants]  
Montazh mekhanicheskogo oborudovaniia domennykh tsukhov. Izd.2.,  
perer. i dop. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i  
stroit. materialam, 1961. 333 p. (MIRA 15:2)  
(Blast furnaces—Design and construction)

ANDRIYEVSKIY, S.M., kand.tekhn.nauk; ZOL'NIKOV, S.S., kand.tekhn.nauk;  
KISELEV, A.I., inzh.; KOROLEV, K.P., doktor tekhn.nauk, prof.;  
KRYLOV, V.A., kand.tekhn.nauk; SHESTAKOV, V.N., kand.tekhn.nauk;  
VERIGO, M.F., doktor tekhn.nauk; KREPKOGORSKIY, S.S., kand.  
tekhn.nauk; IVANOV, V.V., doktor tekhn.nauk, retsenzent;  
ORLOVA, I.A., inzh.red.; VOROB'YEVA, L.V., tekhn.red.

[Truck-type locomotive underframes for high-speed traffic]  
Telezhechnye ekipazhi lokomotivov dlia povyshennykh skorostei  
dvizheniia. Moskva, Vses. izdatel'sko-poligr. ob'edinenie  
M-va putei soobshcheniia, 1962. 303 p. (Moscow. Vsesoiuznyi  
nauchno-issledovatel'skii institut zheleznodorozhnogo  
transporta. Trudy, no.248). (MIRA 16:2)

(Locomotives--Design and construction)  
(Railroad engineering)

KRYLOV, V.A.; GURVITS, A.I., inzh., retsenzents; SIMACHEV, L.V., inzh.,  
retsenzents; YEZDOKOVA, M.I., red.izd-va; ISLENT'YEVA, P.G.,  
tekhn. red.

[Installation of metallurgical equipment] Montazh metallurgi-  
cheskogo oborudovaniia. Moskva, Metallurgizdat, 1963. 289 p.  
(MIRA 16:8)  
(Iron and steel plants--Equipment and supplies)

KRYLOV, V.A.; IPATOV, P.P., retsenzents; FINKEL', A.F., retsenzents;  
GURVITS, A.I., inzh., nauchn. red.

[Assembling the equipment of steel smelting plants] Mont-  
tazh oborudovaniia staleplavil'nykh tsokhov. Moskva,  
Stroiizdat, 1964. 289 p. (MIRA 17:6)

VOL'BERG, N.Ye.; GAYDARAK, K.M.; DEBAT, M.P.; KOPELIN, V.V.;  
MOLOKANOV, A.V.; NAUMOV, V.G.; PALAGIN, A.V.; TIMOFEYEV,  
A.I.; FRANTSUZOV, Ya.L.; VOLNYANSKIY, A.K., glav. red.;  
SUDAKOV, G.G., zam. glav. red.; IOSELOVSKIY, I.V., red.;  
ORLOV, V.M., red.; ONKIN, A.K., red.; NIKOLAYEVSKIY,  
Ye.Ya., red.; MARKOV, I.I., red.; MEL'NIK, V.I., red.;  
STAROVEROV, I.G., red.; TUSHNYAKOV, M.D., red.; CHERNOV,  
A.V., red.; KITYLOV, V.A., nauchn. red.

[Assembly of technological equipment of chemical plants]  
Montazh tekhnologicheskogo oborudovaniia khimicheskikh  
zavodov. Moskva, Stroiizdat, 1964. 619 p.

(MIRA 17:11)



REVISED, 7.1.1, 1965.1. PUPKICH, Ya.V., kand. tekhn. nauk

Automation of short-circuit current calculations using digital  
computers with different changes in the network diagram. Energ.  
i elektrotekh. prom. no. 238-40 April '65.

(MIRA 18:8)

DOROKHIN, P.N., kand.tekhn.nauk; KRYLOV, V.A., kand.tekhn.nauk; ANTROPOV, V.S.,  
inzh.

Use of polyamide materials in the parts of the hinged couplings  
of the spring suspension of diesel locomotive trucks. Trudy TSNII  
MPS no.288:140-151 '65.

Welded blocks of diesel locomotive engines and evaluation of  
their operative reliability. Ibid.:152-164

(MIRA 18:10)

KHRUSHCHOVA, Ye.V., kand. tekhn. nauk; KRYLOV, V.A., inzh.; KASHPROVSKIY, S.Ye.,  
inzh.

Calculation of single-phase short-circuits in the power systems of the  
Ukrainian S.S.R. using the "Ural-2" computer. Energ. i elektrotekh.  
prom. no.1:9-11 Ja-Mr '65. (MIRA 18:5)

KRYLOV, V.D. (Moskva); LOZINSKIY, M.G. (Moskva); NIKITINA, I.I. (Moskva)

Fine crystal structure of nickel following a high-temperature thermomechanical treatment. Izv. AN SSSR. Otd. tekhn. nauk. Met. i gor. delo no.4:135-140 J1-Ag '63. (MIRA 16:10)

USSR •

/Roentgen-structural investigation of powder compositions of system nickel-iron, obtained by the carbonyl method. Ya. P. Selinskii, V. D. Krylov, and V. L. Volkov. *Zhur. Tekh. Fiz.* 22, 1735-6 (1952). Powder binary compos. of the system Ni-Fe in the interval of 30-84 atom % Ni, obtained by simultaneous decompn. of carbonyls of Fe and Ni, have a cubic face-centered lattice and do not differ in structure from  $\gamma$ -phase binary alloys of Ni-Fe obtained by usual means. Change of lattice spacing in relation to chem. compn. is the same. Immediately after the carbonyl process a powder is obtained which is chemically heterogeneous between particles but roentgen-structural differences are not apparent. The internal heterogeneity disappears on annealing at 1000°.

V. N. Bednarik

*Krylov, V.D.*

USSR/Physical Chemistry - Kinetics, Combustion, Explosions,  
Topochemistry, Catalysis.

B-9

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 507

Author : V.D. Krylov, L.Kh. Freydlin, K.G. Rudneva.

Inst : Academy of Sciences of USSR.

Title : Study of Connection Between Activity and Fine Crystalline  
Structure of Powdered Nickel Catalyst.

Orig Pub : Izv. AN SSSR, Otd. Khim. n., 1957, No 5, 546-553

Abstract : A thermal treatment of specimens of powdered Ni-catalyst  
in  $N_2$  atmosphere at 300, 450 and 570° of the duration 2  
to 8 hours, as well as hydrogen extraction from them at  
room temperature does not influence the Fourier factors  
computed with the harmonic analysis of profiles of in-  
terference lines on x-ray photographs of the above menti-  
oned specimens. The mean dimensions of the little

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USSR/Physical Chemistry - Kinetics, Combustion, Explosions,  
Topochemistry, Catalysis.

B-9

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 507

crystals do not change practically in the result of a treatment at 300°, and after a treatment at 450 and 570° they increase 1.7 and 2.1 times correspondingly. The activity of the catalyst in the hydrogenation reaction of vinylphenyl ether in alcohol solution at 20° does not change after a treatment at 300°, but the treatment at 450 and 570° decreases the activity 1.7 and 4 times correspondingly. In the author's opinion, hydrogen takes part in the composition of active centers of powdered Ni and is setting on surfaces confining the little crystals in the process of catalyst formation.

Card 2/2

*Krylov, V.D.*  
AUTHORS: Krylov, V.D., Yefremov, Yu.N.

76-11-22/35

TITLE: The Structure of Cu-Si Alloys and Their Catalytic Activity in the Reaction with Chloroethyl (Struktura Cu-Si splavov i ikh kataliti-cheskaya aktivnost' v reaktsii s khloristym etilom)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol.31, Nr 11, pp.2522-2525 (USSR)

ABSTRACT: The phase composition of silicon-copper alloys (20-35% Cu) and their modification in a reaction with chloroethyl was investigated by the X-ray method. It is shown that all alloys of this composition, independent of their activity in the aforementioned reaction, have a two-phase structure: a silicon and a  $\text{Cu}_3\text{Si}$  ( $\eta$ -phase). It is shown that in the case of interaction with chloroethyl the silicon contained in the intermetallic compound  $\text{Cu}_3\text{Si}$  reacts in the first moment. This leads to the destruction of the given compound and to the formation of metallic copper, which is now the catalyzer of the further process of ethyl-chlorine-silane synthesis. The copper separated settles on the surface of silicon particles and deteriorates contact with chloroethyl, which is bound to lead to a decrease of the alloying activity. It is shown that the difference in the case of a beginning activity of Cu-Si alloys in the reaction with chloroethyl

Card 1/2



The Structure of Cu-Si Alloys and Their Catalytic Activity in the Reaction with  
Chlorethyl

76-11-22/35

is connected with the difference in reaction velocity between  
chlorethyl and the silicon contained in the intermetallic compound.  
The investigations connected with the chemical part of the pro-  
cesses mentioned were carried out by I.V.Trofimova and R.A.  
Turetskaya. There are 6 figures and 7 references, 3 of which are  
Slavio.

SUBMITTED: August 27, 1956

AVAILABLE: Library of Congress

Card 2/2

Krylov, V. D.

62-2-5/29

AUTHORS: Andrianov, K. A., Golubtsov, S. A.,  
Trofinova, I. V., Taretskaya, R. A., Krylov, V. D.

TITLE: On the Modifications of the Catalytic Activity of Silicon-  
Copper Alloys in the Process of Direct Synthesis of Ethyl-  
chlorosilanes (Ob izmeneniyakh kataliticheskoy aktivnosti  
kremnemednykh splavov v protsess pryanogo sinteza etil-  
khlorosilanov).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 2,  
pp. 157-165 (USSR).

ABSTRACT: The direct synthesis of alkyl- and arylchlorosilanes by the  
influence of the haloid derivative upon elementary silicon  
in the presence of a copper catalyst was already described  
in several papers. But only scarce and insufficient data ex-  
ist on the fact that the activity of the contact silicon-  
copper mass slowly decreases in the process of synthesis.  
Concrete reports on the reason for the modification of activ-  
ity have hitherto not been published. In the present paper  
the following is said on the result of the experiment: It  
was found that in the interaction of the silicon-copper  
alloys with ethylene chloride their activity is highly re-

Card 1/2

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AVAIL.  
Card 2,

...determine the processes with  
...chloride termin-  
...active compound  
...presence of copper; b) re-  
...of the separated  
...this hypothesis the  
...carbon content of the  
...decrease in the activity of  
...at reaction is consider-  
...with a diverse copper can  
...alloy catalysts 2. Ethylchlorosilanes-Synthesis

62-2-5/28

On the Modifications of the Catalytic Activity of Silicon-Copper Alloys in the Process of Direct Synthesis of Ethylchlorosilanes.

duced, i.e. to the extent to which silicon enters into reaction (formation of ethylchlorosilanes). It was found that for alloys with a low content of copper (5-9%) the lines of the general activity in the reaction of the formation of diethylchlorosilane run over 2 maxima. In alloys with a high copper-content (~25%) the presence of only one selective maximum and one maximum of the general activity was determined. It is assumed that the interaction of ethyl chloride with silicon-copper alloys is composed of two parallel processes: a) the reaction with silicon of the intermetallic compound  $Cu_3Si$  with simultaneous separation of active copper; b) reaction with free silicon in the presence of the separated copper as catalyst. On the basis of this hypothesis the variability for alloys with a diverse content of copper can be explained. During the reaction carbon is to a considerable extent deposited at the surface of copper which may also contribute to a decrease in the activity of the mass. There are 2 figures, 7 tables, and 5 Slavic references.

SUBMITTED:  
AVAILABLE:  
Card 2/2

August 22, 1956  
Library of Congress  
1. Silicon-copper alloy catalysts 2. Ethylchlorosilanes-Synthesis

AUTHOR: Krylov, V.D.

SOV/70-4-4-31/34

TITLE: On the Methodology of Calculating the Microdeformations and Dimensions of Blocks Scattering X-rays Coherently by the Harmonic Analysis of the Forms of the Interference Lines in the X-ray Diffraction Diagrams From Polycrystalline Materials

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 4, pp 627-628 (USSR)

ABSTRACT: The profile of a powder diffraction line, broadened by the small particle size and by crystallite strains, can be broken down into a Fourier series and the Fourier coefficients,  $A_n = A_n^{\partial} A_n^u$ , calculated taking account of instrumental broadening, give complete information on the sizes of the crystal blocks and their size distribution and also on the magnitude of the microdeformation and the dimensions of uniformly deformed regions. Usually, the sine terms are zero and exact determination of the sizes and strains appears impossible. Ways are proposed here of calculating  $A_n^{\partial}$ ,  $A_n^u$  and  $(\overline{\Delta L^2})^{1/2}$ , the latter

Card1/2

SOV/70-4-4-31/34  
On the Methodology of Calculating the Microdeformations and  
Dimensions of Blocks Scattering X-rays Coherently by the Harmonic  
Analysis of the Forms of the Interference Lines in the X-ray  
Diffraction Diagrams from Polycrystalline Materials

quantity being the r.m.s. displacement, which significantly  
reduce the time of calculation and increase the accuracy.  
There are 5 references, of which 4 are Soviet and 1 English.

SUBMITTED: January 28, 1959

Card 2/2

5(4)

SOV/76-33-7-21/40

AUTHORS:

Krylov, V. D., Vabel', Ya. I., Yefremov, Yu. N., Klenina, A. M.,  
Lel'chuk, S. L. (Moscow)

TITLE:

Kinetics of Phase Transformations in Alloyed Cu - Si Contact  
Masses and Its Relation With the Kinetics of Direct Synthesis  
of Ethyl Chlorosilanes

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1594-1601  
(USSR)

ABSTRACT:

The kinetics of the reaction between ethyl chloride (I) and  
silicon is closely related with the structural transformations  
occurring in Cu - Si alloys during reaction with alkyl  
chlorides. The authors investigated samples of Cu - Si alloy  
(24.7 wt% Cu) made from KR-1 silicon and M-2 copper. The samples  
were treated with (I) at 280, 300, 325, 340, and 360°C for 10  
and 30 minutes and 1, 2, 3, and 6 hours. The phase composition  
of the contact mass was quantitatively determined by means of  
an X-ray chamber of the type VRS-3 and a self-recording MF-4  
microphotometer. The experimental results obtained indicate  
that in the initial stage only minimum reaction takes place  
between the Cu - Si alloy and (I), or there is a period of

Card 1/2

Kinetics of Phase Transformations in Alloyed Cu - Si SOV/76-33-7-21/40  
Contact Masses and Its Relation With the Kinetics of Direct Synthesis of  
Ethyl Chlorosilanes

induction. This is ascribed to a certain delay in the formation of active reaction centers on the surface of the  $\eta$ -phase. The initial activity of the Cu - Si alloy with respect to (I) is determined by the decomposition rate of the  $\eta$ -phase, i.e. by the reactivity of silicon that passes over into the compound  $Cu_3Si$ . The Si atoms of the structure lattice of the  $\eta$ -phase probably are more reactive than those of the Si lattice. The occurrence of self-acceleration of the reaction between (I) and the Cu - Si alloy is ascribed to a catalytic effect of copper (that is formed during the decomposition of the  $\eta$ -phase). The intermetallic  $Cu_3Si$  compound is of special importance in the process under investigation as it is assumed to act as an initiator of the process and as a catalytic donor. In conclusion, the authors thank S. A. Golubtsov for his assistance. There are 10 figures and 6 references, 4 of which are Soviet.

SUBMITTED: January 9, 1958  
Card 2/2

5.1190  
5(4)  
AUTHORS:

Krylov, V.D., Freydlin, L.Kh.,  
Zhukova, I.F.

66870  
SOV/76-33-11-32/47

TITLE:

Investigation of the Influence of Water Vapor on the Activity  
and Structure of the Skeleton Nickel Catalyst

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, PP 2559-2563  
(USSR)

ABSTRACT:

The treatment of a skeleton nickel catalyst with water vapor under pressure caused already at low temperatures a decrease in activity. It was assumed (Ref 3) that the decrease in activity is caused by a recrystallization of the catalyst. Therefore the authors investigated the fine-crystalline structure and catalytic activity of skeleton nickel (treated with water vapor under pressure), the structure and activity of nickel (reduced from NiO) and the structure of NiO itself. The fine-crystalline structure was examined according to the harmonic analysis of the interference lines in x-ray pictures and according to the integral semi-width of the lines. The latter were determined with an x-ray diffractometer type URS-50I. The size of the crystal aggregate was determined with the equation of Selyakov-Scherrer. The NiO obtained by

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Investigation of the Influence of Water Vapor  
on the Activity and Structure of the Skeleton  
Nickel Catalyst

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oxidation of the skeleton nickel, was treated under pressure at 250, 215, 200, 180 and 150°C with water vapor (Table), subsequently reduced with hydrogen and the activity was investigated at the hydrogenation of vinyl phenyl ether in 96% ethanol at 20°C. The irreversible decrease in the catalyst activity observed is not caused by the growth of the crystal aggregate, but seems to be due to an additional aggregation (with decrease in the active catalyst surface) of the aggregate. Experiments with a water vapor treatment of the skeleton nickel and subsequent checking of the catalytic activity showed that the decrease depends very much on the pressure at the water vapor treatment (Fig 2). A strong growth of the crystal aggregate (almost to the recrystallization) was observed. At a treatment of the catalyst with a mixture of water vapor - carbon dioxide, no recrystallization could be observed and a further hydrogen treatment of the catalyst caused a noticeable recovery of the catalytic activity. A nitrogen treatment under pressure of the skeleton nickel increased the aggregate of the catalyst to a small degree 4

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Investigation of the Influence of Water Vapor  
on the Activity and Structure of the Skeleton  
Nickel Catalyst

66870  
SOV/76-33-11-32/47

while the catalytic activity was completely restored by a  
treatment with hydrogen. There are 3 figures, 1 table, and  
5 references, 3 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut organicheskoy khimii im.  
N.D. Zelinskogo (Academy of Sciences, USSR, Institute of  
Organic Chemistry, imeni N.D. Zelinskiy)

Card 3/3

FREYDLIN, L.Kh.; BORUNOVA, N.V.; KRYLOV, V.D. (Moscow)

Interaction of NiO with Al<sub>2</sub>O<sub>3</sub> in the atmosphere of water vapors and the effect of the latter on the properties of nickel-alumina catalysts. Zhur.fiz.khim. 35 no.11:2458-2464 N '61.

(MIRA 14:12)

1. Akademiya nauk SSSR, Institut organicheskoy khimii imeni N.D. Zelinskogo.

(Nickel oxide)  
(Alumina)

KRYLOV, V.D.

X-ray study of changes in the fine crystalline structure of powdered carbonyl iron. Izv. AN SSSR. Ser. fiz. 26 no.3:362-367 Mr '62.

(MIRA 15:2)

(X-ray crystallography)  
(Carbonyls)

KRYLOV, V.D.

Use of Fourier transforms of approximating functions in X-ray  
analysis of the fine crystalline structure of polycrystals.  
Kristallografiia 8 no.3:486-489 My-Je '63. (MIRA 16:11)

L 12869-63

ACCESSION NR: AP3002939

EWB(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

S/0076/63/037/006/1377/1381

63

AUTHOR: Krylov, V. D.; Turetskaya, R. A.; Lel'chuk, S. L.

TITLE: Investigation of phase structure of infusible silicon-copper contact masses for direct synthesis of alkylchlorosilanes 7

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1377-1381

TOPIC TAGS: alkylchlorosilane, ethyl chloride, ethylchlorosilane, silica

ABSTRACT: It has been shown in a previous article that silica and the inter-metallic compound  $\text{Cu}_{3}\text{Si}$  -  $\text{Cu}_{3}\text{Si}$  (N-phase) - Eta phase enters into the reaction as a contact mass in the direct synthesis of alkylchlorosilane of copper silicate fusion. The phase structure undergoes several changes during its interaction with ethyl chloride. At the beginning of the synthesis, the silica from the intermetallic compound enters into the reaction, liberating the elemental copper. The rate of formation of the ethylchlorosilanes increases analogously with the decrease of Eta N-phase concentration and the increase of concentration of free copper in the contact mass. This points to the fact that the formation of ethyl-chlorosilanes is possible in the presence of Eta N-phase silica, and also through the reaction of ethylchloride with the free silica under a catalytic

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ACCESSION NR: AP3002939

action of elemental copper. Based on the above information, an X-ray investigation was made of the phase structures of nonfusible contact masses which are used in the direct synthesis of alkylchlorosilanes. The intermetallic compound Cu sub 3 Si is formed at temperatures 300 to 400C from silica and copper at the moment of separation of alkylchlorosilanes. The chlorosilanes decrease the temperature at which Cu sub 3 Si is formed. During the synthesis of alkylchlorosilanes Cu sub 3 Si and highly dispersed catalytically active copper is constantly formed. The silica entering into the composition of Cu sub 3 Si possesses a varied reactivity depending on the method of preparation of the contact mass. Orig. art. has: 6 figures.

ASSOCIATION: None

SUBMITTED: 05Jun62

DATE ACQ: 16Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 006

OTHER: 002

Card 2/2

KRYLOV, V. F., Candidate Med Sci (diss) -- "The treatment of patients with chronic dysentery, and counter-relapse treatment of convalescents after acute dysentery under polyclinic conditions". Moscow, 1959. 19 pp (Second Moscow State Med Inst im N. I. Pirogov), 250 copies (KL, No 24, 1959, 150)



KRYLOV, V. F.

"Treatment of chronic dysentery patients and the antirecurrence  
treatment of reconvalescents under conditions of infirmaries  
for intestinal diseases."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists  
and Infectionists, 1959.

KH7107, 7.5.11

Mycoch. treatment of *Staphylococcus aureus* with 100%  $\alpha$ -D-glucopyranose  
MnCl<sub>2</sub>.

M. Kafedra infektivnykh bolezney, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2

KRYLOV, Vladimir Pavlovich; KAZANSKIY, N.A., red.; TARAYEVA, Ye.K., red.  
isd-va; TSYRMAN, T.M., tekhn. red.

[Storage of and accounting for materials and equipment in construction  
warehouses] Khranenie i uchët materialov i oborudovaniia na skladakh  
stroitel'stva. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i  
stroit. materialam, 1958. 265 p. (MIRA 11:7)  
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Quality of semidry granulated blast-furnace slag obtained in drum granulators. V. F. Krylov, *Tsiment* 17, No. 2, 11-15(1951).—A number of acid and basic slags were ground wet and semidry, and the properties of the products compared for use in cement. There was no difference in the hydraulic properties. Semidry granulated acid slag was harder to grind than wet granulated. There was little difference in the grindability of basic slag granulated by either method. Semidry granulated slag offers greater advantages in transportation (less water to haul), in storing (less space), and does not freeze in cold weather. M. Hloch

KRYLOV, V. F.

KRYLOV, V. F. - inzh. i, ROYAK, S. M. - Kand. tekhn. nauk.

Vsesoyuznyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti (NIITsement)

GIDRAVLICHESKAYA AKTIVNOST' DOMENNYKH SHLAKOV S POVYSHENNYM SODERZHANIYEM MARGANTSA  
Page 106

SO: Collection of Annotations of Scientific Research Work on Construction, com-  
pleted in 1950, Moscow, 1951

KRYLOV, V. F.

Dissertation: "Investigation of Wet Granulation of Blast-Furnace Slag as a Hydraulic Component of Slag Cements." Cand Tech Sci, Moscow Chemicotechnological Inst, Moscow, 1953. (Referativnyy Zhurnal--Khimiya, Moscow, No 5, Mar 54)

SO: SUM 243, 19 Oct 54

KRYLOV, V. F.

USSR/Engineering - Construction, Raw Materials, Concrete

Jan 53

"Hidden resources of the Construction Industry," P. P. Budnikov, Corr Mem Acad Sci  
USSR and M. I. Subbotkin, Cand Tech Sci

Vest Ak Nauk, SSSR, No 1, 1953, pp 47-50

The cement industry has completely ignored a very good source of raw material for concrete-blast furnace slag. Article discusses the problems of utilization, stating it would be a simple matter for metallurgical plants to crush cinders from their furnaces and send it to a cement plant. A method for use of crushed cinders has already been worked out by V. F. Krylov, V. V. Serov and others.

271769

MT V Blast-furnace slag semidry ground as hydraulic cement. V. P. Karyov. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Tsement. Prom.* 1953, No. 7, 3-41; *Referat. Zhur., Khim.* 1953, No. 893. --A comparative study was made of the grindability, abrasiveness, and hydraulic properties of semidry, granulated, and wet-granulated blast-furnace slags. Slags, granulated by the semidry method, were found preferable for use in compounding cements. M. Hosh.



VOROB'YEV, B., kandidat tekhnicheskikh nauk; KRYLOV, V.

A twenty-four hour coal slicing cycle. Mast. ugl. 4 no. 9:6-8 S'55.  
(MLRA 9:1)

1. Zamestitel' nachal'nika shakhty imeni Stalina kombinata Kusbass-  
ugol'

(Kuznetek Basin--Coal mines and mining)

VOROB'YEV, Boris Mikhaylovich; ~~KRYLOV~~, Vladimir Fedorovich; KULIKOV, A.P.,  
otvetstvennyy redaktor; OKHRIMENKO, V.A., redaktor izdatel'stva;  
ANDREYEV, G.G., tekhnicheskiiy redaktor; NADINSKAYA, A.A.,  
tekhnicheskiiy redaktor

[Generalization of the experience of leading crews using the layer  
system of mining with back filling; the I.V.Stalin mine of the  
"Kuzbassugol'" combine] Obobshchenie opyta peredovykh brigad po  
osvoeniiu sloevykh sistem razrabotki s zakladkoi; shakhta im. I.V.  
Stalina kombinata "Kuzbassugol'". Moskva, Ugletekhizdat, 1956, 48 p.  
(MIRA 9:10)

(Kuznetsk Basin--Coal mines and mining)

15-1957-10-14115

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,  
p 120 (USSR)

AUTHORS: Royak, S. M., Krylov, V. F.

TITLE: The Influence of Manganese Oxide on the Activity of  
Granulated Blast-Furnace Slag (O vliyanií zakisí mar-  
gantsa na aktivnost' domennykh granulirovannykh shlakov)

PERIODICAL: V sb: Domennyye shlaki v str-ve. Kiyev, Gosstroyizdat  
UkSSR, 1956, pp 133-147

ABSTRACT: Bibliographical entry

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KRYLOV, V.F.

KRYLOV, V.F., kand. tekhn. nauk; PANKRATOV, V.L., inzh.

Formation of filaments during moist granulation of blast furnace  
slags and methods for reducing such formation. Trudy NIISement  
no.10:56-67 '57. (MIRA 10:12)

(Slag cement)

KRYLOV, V.F.; BILLOV, A.A.

Shield roofing used in double stall, dip working of steeply pitching  
seams. Ugol' 32 no.1:40-42 Ja '57. (MLBA 10:2)

1. Shakhta "Koksoyaya-1."  
(Coal mines and mining)

BELOV, A.A.; KRYLOV, V.F.

Using the system of horizontal slicing with complete pneumatic  
stowage and without preliminary slice driftage. Ugol' 32 no.2:41-  
44 F '57. (MLRA 10:3)  
(Kuznetsk Basin—Coal mines and mining)

KRYLOV, Vladimir Fedorovich, inzh.; PLESHAKOV, Grigoriy Yakovlevich,  
kand.tekhn.nauk; YONOS'YEV, Boris Mikhaylovich, kand.tekhn.nauk;  
ZHUKOV, V.V., otv.red.; SHKLYAR, S.Ya., tekhn.red.

[Working thick sloping coal seams] Iz opyta razrabotki moshchnykh  
pologikh plastov. Moskva, Ugletekhnizdat, 1959. 165 p.

(MIRA 12:12)

(Coal mines and mining)

GUBAREV, V., inzh.; KRYLOV, V., inzh.

Using the KTU-1 system in mining thick flat beds. Tekh.-ekon.biol.  
no.1/2:22-27 Ja-F '59. (MIRA 12:4)  
(Kusnetak Basin--Coal mines and mining)



KONOVALOV, P.P.; SHTETIKERT, M.P.; IVANOV-GORODOV, A.N.; VOLKOVSKIY,  
B.V.; KRYLOV, V.F., kand.tekhn.nauk, nauchnyy red.; ROTENBERG,  
A.S., red.isd-vz; PUL'KINA, Ye.A., tekhn.red.

[Studying physical, chemical, and mechanical properties of  
cement; methods and testing equipment] Fiziko-mekhanicheskie  
i fiziko-khimicheskie issledovaniya tsementa; metody i appa-  
tura. Leningrad, Gos.isd-vo lit-ry po stroit., arkhit. i  
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(Cement--Testing)

KRYLOV, V.F.; POMYAN, V.K.

Using V.V.Serov's method in fusing cement. TCement 26 no.2:1-7  
Mr-Ap '60. (MIRA 13:6)  
(Cement)

KRAVCHENKO, I.V.; KRYLOV, V.F., kand. tekhn. nauk, nauchnyy red.;  
TYUTYUNIK, M.S., red. izd-va; RUDAKOVA, N.I., tekhn. red.

[Alumina cement] Glinozemisty tsement. Moskva, Gos. izd-vo  
lit-ry po stroit., arkhitekt. i stroit. materialam, 1961. 174 p.  
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(Alumina cement)

KRYLOV, V.F., kand.tekhn.nauk

Development of the "converter" method of obtaining cement.  
Nauch. soob. NIITSementa no.12:27-30 '61. (MIRA 15:7)  
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BUDNIKOV, P.P., akademik; KRYLOV, V.F., kand.tekhn.nauk; PANKRATOV, V.L.,  
inzh.; ZLODEYEVA, V.S., inzh.

Using water and a trough to granulate blast-furnace slag.

Stroi.mat. 8 no.7:30-34 J1 '62.

(MIRA 15:8)

(Slag)

KRYLOV, V.F., kand.tekhn.nauk; PANKRATOV, V.L., inzh.; ZLODEYEVA, V.S., inzh.

Hydraulic impact and launder classifier methods of granulating  
blast furnace slags. Stal' 22 no.9:786-788 S '62.  
(MIRA 15:11)

1. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy institut  
tsementnoy promyshlennosti i Yuzhnyy nauchno-issledovatel'skiy  
institut po stroitel'stvu.

(Slag)

KRYLOV, V.F.

New types of alumina cement. TSement 28 no.1:8 Ja-F '62.  
(MIRA 16:5)  
(Alumina cement)

BUTT, Yu.M.; ROYAK, S.M.; KRYLOV, V.F.; FEDOROV, G.A.

Study of ferroalumina cements obtained in an oxidizing atmosphere.  
TSement 28 no.1:13-16 Ja-F '62. (MIRA 16:5)  
(Cement clinkers)



KRYLOV, V.F.; DOBROVOL'SKIY, V.V., kand. tekhn. nauk

Coal mining with filling is a progressive method of  
working thick steep seams. Ugol' 38 no.12:11-13 '63.

(MIRA 17:5)

1. Glavnyy inzh. kombinata Kusbassugol' (for Krylov).
2. Institut gornodo dela im. A.A. Skochinskogo (for Dobrovol'skiy).

KRYLOV, V.F.; BERDYUGIN, V.A.; LINDENAU, N.I.

Present status and development of complex mechanization in sloping longwalls in the Kuznetsk Basin. Ugol' 39 no.1:46-50 Ja '64.

(MIRA 17:3)

1. Kombinat ugol'nykh predpriyatiy Kuznetskogo kamennougol'nogo basseyna (for Krylov, Berdyugin). 2. Vostochnyy nauchno-issledovatel'skiy institut po bezopasnosti rabot v gornoy promyshlennosti (for Lindenau).

KRYLOV, V.F.; GORBACHEV, D.T.; AGAFONOV, I.G.; FALALEYEV, L.A.

Mining 1,000 tons of coal in one day in the Kuznetsk Basin with the CMKU complex. Ugol' 39 no.6:12-1. Je'64. (MIRA 17:7)

1. Kombinat ugod'nykh predpriyatiy Kuznetskogo kamennougol'nogo basseyna (for Krylov). 2. Kombinat ugod'nykh predpriyatiy Kemerovskogo rayona, Kuzbass (for Gorbachev). 3. Shakhta "Promyshlenskaya" Kombinata ugod'nykh predpriyatiy Kemerovskogo rayona, Kuzbass (for Agafonov, Falaleyev).

KRYLOV, V.F.

All-Union record for development mining in the Kuznetsk  
Basin. Ugol' 39 no.8:3 Ag '64. (MIRA 17:10)

1. Glavnyy inzh. Kombinata po shakhtnomu stroitel'stvu  
Kuznetskogo kamonnougol'nogo basseyna.



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figures.

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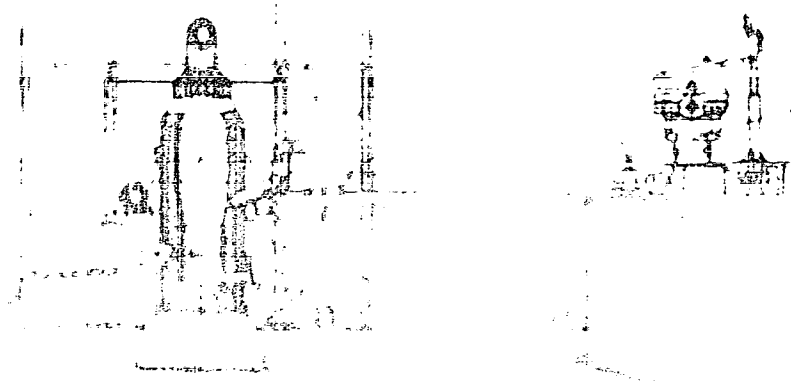


Figure 1. Schematic diagram of the experimental setup.

LIST OF WORKS IN FIELD OF SCIENCE AND  
TECHNOLOGY SUBMITTED FOR LENIN PRIZE

The Committee on Lenin Prizes in the Field of Science and Technology of the Council of Ministers USSR reports that the following works have been received in the competition for the 1985 Lenin Prize:

In the Field of Prospecting For, and Extraction of Minerals

5. V. R. Fedorov, Ye. K. Korzyukov, P. M. Kovachevich,  
N. I. Lindenau, V. S. Yevseyev, V. F. Krylov, I. A. Valukhov,  
G. V. Klim, A. P. Zemtsov, and A. A. Fedorov, "A System of  
Working Out Large Slanting Deposits of Coal with the KTU  
Mechanized Complex." Proposed by the Council of the Nation-  
al Economy of the Kuzbasskiy Economic Region.



KOVACHEVICH, P.N., prof.; YEVSEYEV, V.S., gornyy inzh.; KORZYUKOV, Ye.K., gornyy inzh.; KRYLOV, V.F., gornyy inzh.; LINDENAU, N.I., gornyy inzh.; FEDOROV, V.R., gornyy inzh.

Results and prospects of using systems of mining thick seams with the use of the KTU unit in the Kuznetsk Basin. Ugol' 40 no.2:5-7 F '65.  
(MIRA 18:4)



KRYLOV, V.I.

Reproduction rate of the Pacific walrus. Zool.zhur. 41  
no.1:116-120 Ja '62. (MIRA 15:4)

1. Magadan Branch of the Pacific Research Institute of Marine  
Fishery Management and Oceanography.  
(Walruses)

LEONT'YEVSKIY, Yevgeniy Sergeyevich; RENSKIY, Nikolay Mikhaylovich;  
KRYLOV, V.I., retsenzent; SHIMKO, K.N., retsenzent; GLADYSHEV,  
V.F., retsenzent; OSIPOV, L.L., retsenzent; TAREYEV, V.M.,  
prof., doktor tekhn. nauk, red.; VITASHKINA, S.A., red. izd-va;  
BODROVA, V.A., tekhn. red.

[Marine engineering handbook for the operation of motorships]  
Spravochnik dlia mekhanika i motorista teplokhoda. Sost. E.S.  
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1961. 558 p. (MIRA 15:2)  
(Marine engineering) (Motorships)

AYZENSHTAT, V.S.; KRYLOV, V.I.; METEL'SKIY, A.S.; TKACHEVA, T.,  
red. izd-va; SIDERKO, N., tekhn. red.

[Tables of Laguerre polynomials and functions] Tablitsy  
mnogochlenov i funktsii Liagerra. Minsk, Izd-vo Akad. nauk  
BSSR, 1963. 157 p. (MIRA 16:6)

(Polynomials)

KRYLOV, Vladimir Iosifovich; BRONTVAYN, Leon Robertovich; ANFILOGOV,  
R.I., inzh., retsenzent; TARASOVICH, V.S., inzh., red.; FURER,  
P.Ya., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn.red.

[Guide to melting with high-frequency currents] Pamiatka plavil'-  
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Device for the remote recording of the kinetics of some radio-  
chemical processes. Zav. lab. 30 no.11:1418-1419 1974  
(RUSS 18:1)

1. Institut khimicheskoy fiziki AN SSSR.

Math. V.I.

Ob odnogo metoda postroyeniya funktsii, preobrazuyushchey konformno oblast' na drug.  
V kn. = Konformnoye otobrazheniye odnoizmernykh i mnogozhnykh oblastey = V.I.  
GIT 1 (1937), 35-46.

Prilozheniye integral'nykh uravneniy k dokazatel'stvu nekotorykh teorem teorii kon-  
formnykh preobrazovaniy. Matem. Sb., 4 (46), (1936), 9-30.

O funktsiyakh, regul'nykh v po uploskosti, Matem. Sb., 6 (48), (1939), 95-136.

Issledovaniye lineinogo differentsial'nogo uravneniya v irregulyarnoy osoboy toчке.  
Matem. Sb., 36 (1929), 425-433.

Ob odnom metode postroyeniya funktsii, preobrazuyushchey konformno oblast' na drug.  
M.-L., GIT 1, sb. = konformnoye otobrazheniye odnoizmernykh i mnogozhnykh  
oblastey = (1937), 111-120.

SO: Mathematics in the USSR, 1947-1947  
edited by Kurenko, A.G.  
Karlasevich, A.I.,  
Rashevskiy, I.K.  
Moscow-Leningrad, 1948



suivant, si  $u$  a un laplacien iteré  $\Delta^k u$  de norme 1,  $\Delta^k u$  est harmonique sur  $\partial B$  et  $\Delta^k u$  est harmonique sur  $B$ .  
somme sur tout compact, elle a des dérivées de tout

L. Schwartz (Nancy).

Mathematical Reviews, 1970, Vol. 9, No. 1

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KRYLOV V. I.  
KRYLOV, V. I.

Calculus, Integral

Interpolation of highest order of accuracy in a problem of indefinite integration.  
Trudy Mat. inst. No. 38, 1951.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, UNCL.

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KRYLOV, V.I.

Mathematical Reviews  
Vol. 15 No. 2  
Feb. 1954  
Numerical and Graphical  
Methods

Krylov, V. I. Accuracy in the problem of indefinite integration. Izv. Akad. Nauk SSSR, Moscow, 1951. (Russian) 20 rubles.

This paper gives a careful and scholarly extension of Gauss's method of numerical integration so as to include formulas of the more general type

$$y(x_0) = \sum_{i=1}^{r+s} A_i y(x_i) + \sum_{i=1}^{r+s} B_i y'(x_i)$$

where the right hand member contains  $y$  alone at the points  $x_1, \dots, x_r$ , contains both  $y$  and  $y'$  at the points  $x_{r+1}, \dots, x_{r+s}$ , and  $y'$  alone at the points  $x_{r+s+1}, \dots, x_{r+s+t}$ . The author establishes theorems which determine the highest possible order of formulas of this type when certain ones of the  $x$ 's are preassigned and the others are determined, as in Gauss' formulas, by the zeros of an appropriate polynomial. Further theorems determine this polynomial for any given case.

Having established the general theory, the writer proceeds to detailed examination of a set of special cases for which  $x_0, x_1, \dots, x_{r+s}$  are given equally spaced values with step interval  $h$  and the remaining  $x$ 's are determined to maximize the order of the formulas. These cases are as follows. Case 1.  $r=1, s=0$ . (This gives Gauss' formulas, which are well known.) Case 2.  $r=0, s=1$ . (This case gives Markov's formulas, less well known.) Case 3.  $r=1, s=1$ . Case 4.  $r=0, s=2$ . As far as the reviewer is aware, cases 3 and 4 are new.

The author gives the values of the  $x$ 's and the coefficients  $A_i$  and  $B_i$  to seven decimal places for the following:

Case 2.  $r=0$ ,  $s=1$ ,  $l=1, 2, 3, 4, 5, 6$ .

Case 3.  $r=1$ ,  $s=1$ ,  $l=1, 2, 3, 4$ .

Case 4.  $r=0$ ,  $s=2$ ,  $l=1, 2, 3, 4$ .

Finally a rigorous bound for the error is obtained and is worked out in detail for a number of cases, including most of those listed above. The error term is of the form  $Ch^{n+1}y^{(n+1)}(\xi)$ , where  $C$  is a numerical constant dependent on the particular formula but independent of the function  $y(x)$ ,  $n$  is the order of the formula, and  $\xi$  lies between the least and the largest  $x$  occurring in the formula. [The analysis of the error is substantially that used by Milne; Numerical calculus . . . , Princeton, 1949, pp. 108-116; these Rev. 10, 483.]

*W. E. Milne* (Corvallis, Ore.).

PHASE I BOOK EXPLOITATION

1007

Kantorovich, Leonid Vital'yevich and Krylov, Vladimir Ivanovich

Priblizhennyye metody vysshego analiza (Approximation Methods of Higher Analysis) 4th ed. Moscow, Gostekhizdat, 1952. 695 p.  
25,000 copies printed.

Ed.: Akilov, G.P.; Tech. Ed.: Volchok, K.M.

PURPOSE: This book is intended for scientific workers in mathematical physics, mechanics and other applied sciences.

COVERAGE: The book is a systematic presentation of the approximate solution of problems of mathematical physics, mechanics and other applied sciences. It includes methods of representing the solution of a problem in the form of infinite series, relaxation methods and variational methods. A large part of the book is devoted to problems of conformal mapping and their application in the solution of fundamental problems of mathematical physics and other applied sciences. Methods of approximate solution of an

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Integral equation of the Fredholm type and the application of integral equations to the solution of the Dirichlet problem are studied. Many illustrative examples are given. Chapters 1, 2 and 4 were written by L.V.Kantorovich, Chapters 3, 6, 7 and part of Chapter 5 were written by V.I.Krylov, and section 10 of Chapter 5 was written by N.P.Stenin. There are no references.

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