

Dependence of the Mechanical Strength of Slags on
Their Structure

SOV/156-58-1-40/46

Card 4/4

5(1,2)

AUTHOR:

Kruchinin, Yu. D.

SOV/153-58-4-15/22

TITLE:

Investigation on the Crystallization of Ural Blast-Furnace Slags (Issledovaniye kristallizatsii Ural'skikh domennykh oshlakov)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 4, pp 91 - 97 (USSR)

ABSTRACT:

The slags mentioned in the title are used for the production of slag casting to an ever greater extent (Refs 1-4). At present this production is carried out according to the polygonal method where crystallization of the slag melts takes place during a slow cooling in the cast containers. The respective crystallization processes are, however, insufficiently known (Refs 2,4); and this circumstance led to the present investigation. The author's first task was the investigation of slag crystallization under the conditions of polygonal production, the second was to work out a crystallization temperature procedure in mechanized slag casting

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production using heat aggregates. Due to their higher content of alumina and a little lower content of calcium oxide the Ural furnace slags are much more acid than the slags of southern metallurgical works. Slags from Tagil'sk and Chusovskoy were investigated as experimental material. Their composition is given in table 1. Their crystallization under industrial and laboratory conditions is described. The crystallization of the investigated furnace slags takes place under the conditions of the polygonal production within a considerable temperature range (from 1350-1400° to 790-850°). It takes place most intensely at 1160-1350°, and at lower temperatures it is weaker. Well crystallized and solid slag samples may also be obtained by a rapid initial cooling of the melt with a subsequent isothermal standing. The crystallization temperature amounts to 900° for slags from Magnitogorsk and Nizhne-Tagil'sk, to 800° for those from Chusovskoy. These are the lowest temperatures at which solid crystalline casts are formed. A crystallization

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from half an hour to one hour at these temperatures secures a sufficient degree of crystallization and a high mechanical strength. The use of the mentioned heat treatment will considerably shorten the duration of the production cycle in mechanized production. Low crystallization temperatures will simplify production. These recommendations are also valid for the rest of the Ural blast-furnace slags, as the latter differ only little from the three types investigated. There are 8 figures, 2 tables, and 5 references, 5 of which are Soviet.

ASSOCIATION:Ural'skiy politekhnicheskii institut im. S.M.Kirova (Ural Polytechnical Institute imeni S.M.Kirov) Kafedra tekhnologii stekla i keramiki (Chair of Glass and Ceramics Technology)

SUBMITTED:October 10, 1957

Card 3/4

KARTASHOV, Nikolay Alekseyevich; TISHCHENKO, Yefim Ivanovich; KRU-
CHININ, Yu.D., kand.tekhn.nauk, retsenzent; KOZULIN, B., red.;
CHEMKO, L., tekhn.red.

[Building materials made of molten blast-furnace slags]
Stroitel'nye materialy iz ognenno-shidkikh domennykh shla-
kov. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo, 1960. 101 p.
(MIRA 14:5)

(Building materials) (Slag)

S/153/62/005/004/004/006
E071/E435

AUTHOR: Kruchinin, Yu.D.

TITLE: The influence of the chemical composition on the properties of pyroxene stone castings

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, v.5, no.4, 1962, 629-635

TEXT: The influence of chemical composition on crystallization, melting temperature and chemical resistance of crystallized castings was investigated. For this purpose, nine structural-chemical complexes and compounds were chosen which contain all oxides entering the composition of stone castings ($\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{SiO}_2$, $\text{Na}_2\text{O} \cdot \text{Fe}_2\text{O}_3 \cdot 4\text{SiO}_2$, $\text{MgO} \cdot \text{Fe}_2\text{O}_3 \cdot \text{SiO}_2$, $\text{CaO} \cdot \text{Fe}_2\text{O}_3 \cdot \text{SiO}_2$, $\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$, $\text{MgO} \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$, $\text{CaO} \cdot \text{TiO}_2 \cdot \text{Al}_2\text{O}_3$, $\text{MgO} \cdot \text{TiO}_2 \cdot \text{Al}_2\text{O}_3$ and $\text{CaO} \cdot \text{FeO} \cdot 2\text{SiO}_2$). Increasing quantities of the complex or compound, calculated to obtain monomineral pyroxene castings with increasing weight % of one of the characteristic oxides, were successively added to diopside. The respective melts were retained at temperatures of 1100°C and below, in 100°C intervals for 2, 6 and 12 hours. The degree of crystallization was assessed at first visually and then on petrographic specimens. The melting temperature was determined
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according to GOST 9057-49 (GOST 9057-49). Similar tests were also made with a melt of a composition corresponding to pure diopside (CaO - 25.9%, MgO - 18.6%, SiO₂ - 55.5%). The resistance to acid and alkali was tested by treating 1g powdered samples of the casts with sulphuric acid of specific gravity 1.84 and 1.14 and a 20% solution of sodium hydroxide. The undissolved percentage was used as a measure of acid and alkali resistance of the material. Alkali containing compounds Na₂O·Al₂O₃·4SiO₂ and Na₂O·Fe₂O₃·4SiO₂, introduced in small quantities, lower the temperature of the fluid state and improve crystallization properties, simultaneously securing sufficiently high chemical resistance. The same applies to titanium containing complexes. Introduction of MgO·Fe₂O₃·SiO₂ and CaFeO·2SiO₂ strongly improves crystallizing properties and decreases the temperature of the fluid state, simultaneously preserving a high chemical resistance of castings. Additions of CaO·Al₂O₃·SiO₂ and MgO·Al₂O₃·SiO₂ reduce the tendency of melts to crystallization and the acid resistance of castings. There are 2 figures and 5 tables.

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S/153/62/005/004/004/006
E071/E435

ASSOCIATION: Kafedra tekhnologii stekla i keramiki,
Ural'skiy politekhnicheskiy institut im. S.M.Kirova
(Department of Glass and Ceramics Technology,
Ural Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: March 13, 1961



Card 3/3

SEMENOV, P.S.; KRUCHININ, Yu.D.

Effect of crystallization on the swelling of blast furnace slags.
Stal' 22 no.4:305 Ap '62. (MIRA 15:5)

1. Ural'skiy politekhnicheskii institut.
(Slag)

KRUCHININ, Yu.D.

Effect of chemical composition on the properties of pyroxene
stone casting. Izv.vys.uch,zav.; khim.i khim.tekh. 5
no.4:629-635 '62. (MIRA 15:12)

1. Ural'skiy politekhnicheskii institut imeni Kirova,
kafedra tekhnologii stekla i keramiki.
(Pyroxenes)
(Stones, Cast)

KRUCHININ, Yu.D., kand. tekhn. nauk, dotsent

Possibility of stone casting using liquid fuel slags. Trudy
Ural. politekh. inst. no.117:60-66 '62. (MIRA 16:6)

(Slag)

KRUCHININ, Yu.D., SEMENOV, P.S., IVANOVA, L.V.

Effect of some factors on the expansion of fused slag. Trudy
Ural. politekh. inst. no.118:96-103 '62. (MIRA 16:6)

(Slag—Testing)

KRUCHININ, Yu.D. (Sverdlovsk); IVANOVA, L.V. (Sverdlovsk); FUMBAKH, V.E.
(Sverdlovsk)

Crystallization properties of Ural blast furnace slags.

Izv. AN SSSR. Met. no.6:14-23 N-D '65.

(MIRA 19:1)

1. Submitted June 29, 1964.

... class conductivity ...

ACCESSION NR: AP5015764

2

... between the time and the arrival ...
... had the lowest electrical conductivity, an increased crystallizing tendency,
... thermally ...

BUDOV, V.M., inzh.; KRUCHININ, Yu.D., kand. tekhn. nauk; SOLINOV, F.G.,
kand. tekhn. nauk

Effect of fluorine additions and the replacement of sodium oxide
on the surface tension of sheet glass during forming. Steklo
ker. 22 no.10:12-14 O '65. (MIRA 18:12)

1. Salavatskiy zavod tekhnicheskogo stekla (for Budov).
2. Ural'skiy politekhnicheskii institut imeni Kirova (for Kruchinin).
3. Gosudarstvennyy nauchno-issledovatel'skiy institut stekla (for Solinov).

KRUCHININA, A.

Kruchinina, A. - "The glands of the mucous membrane of the duodenum of humans and certain animals", Sbornik rabot Studench. nauch. o-va Khar'k. med. in-ta, No. 8, 1949, p. 29-34.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

KRUCHININA, A. A.

"Investigation of the Process of Self-Erosion of
Artificial River Beds." Cand Tech Sci, All-Union Sci Res Inst
of Hydraulic Engineering and Soil Improvement, Leningrad, 1954.
(RZhGeol, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical
Dissertations Defended at USSR Higher Educational Institutions
(14)

~~APELEV, A. S. AND KRUCHININA, A. A.~~

Reducing the Erosion Action of a Stream by a Special Construction of
Spillway Dam Nozzles

The authors describe the results of a laboratory investigation of a hydropower station made up of an earth dam, a concrete spillway dam about 70 meters high, a hydroelectric station, and a lock for ships. They describe the modeling apparatus used but do not indicate its size. There are no calculations indicated. Reference is made to an earlier article by A. S. Abelev in a 1949 issue of the same periodical. (RZhMekh, No. 6, 1955) Izv. Vses. n.-i. in-ta Gidrotekhniki, Vol. 52, 1954, 96-103

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

KRUCHININA, A. F., Cand Med Sci -- (diss) "Dynamics of intrathoracic tuberculosis in adult ~~patients with~~ ^{patients} tuberculous meningitis during the process of treatment and remote observation." Khar'kov, 1958. 14 pp (Khar'kov State Med Inst), 200 copies (KL, 16-58, 123)

-105-

Constitution diagram of the nickel-antimony system.
 H. Kramida and G. I. Krachner. *Trudy Inst. Chern. Akad. Nauk Ukr. S.S.R., Otd. Fiz. Khim.* 5, 110-22 (1951). The previous work was reviewed. New expd. work in the range 34 to 25% Sb was done to give data on the β - and β' -phases and on the $\beta \rightarrow \beta'$ transformation. Eleven alloys were prepd. with electrolytic Cu and pure Sb. The purity of these metals was previously reported by B. (1948, 2, 137 (1949)). One hundred g. of alloy was melted in Ni in a corundum crucible, transferred to a porcelain tube, and held at 1300-60°. Then direct and differential cooling curves were taken with a Kurnas top app. and pure Ni as a reference. Cooling from 1800 to 600° took 4 hrs. Hardness tests could not be taken because of the hardness and brittleness of the alloys. Metallographic specimens were etched for 5 to 15 sec. in a mixt. of 60% special AcOH and 40% concd. colorless HNO₃. The boundaries of the β -phase were detd. by water-quenching alloys that had been held for 2.5 to 15 hrs. at 700, 600, 500, and 1000°, and observing whether they were single-phase. The results were summarized in a temp.-compn. diagram. The $\alpha + \beta$ eutectic point was at 36% Sb and 1102°. The liquidus curve over the β region had a max. at 1170° and at the compn. Ni₈₅Sb₁₅. The $\beta + \gamma$ eutectic point was at 52.8% Sb and 1080°. The lower and upper concn. limits of the β phase at various temps. were: eutectic, 41.2, 45.0; 1000°, 41.5, 47.4; 900°, 41.8, 45.600°, 42, 45.7; 750°, 42.2, 45.6; 600°, 42.5, 45.5. β -Phase satd. with solid. with Ni transformed to β' at 447°. The β -phase, Ni₈₅Sb₁₅, transformed to β' at 459° so that the $\alpha + \beta$ region was replaced at lower temps. by the $\alpha + \beta'$ and $\beta + \beta'$ regions. A constitution diagram of the Ni-Sb system was constructed on the basis of the present and previous work.

YAKUBOVICH, S.V.; MASLENNIKOVA, N.L.; Prinsipali uchastiye: ZAYTSEVA,
L.V.; KRUCHININA, G.I.

Investigating the adhesion of paint coatings under aging con-
ditions. Lakokras.mat. i ikh prim. no.4:20-25 '62. (MIRA 16:11)

MASLENNIKOVA, N.L.; YAKUBOVICH, S.V.; SANZHAROVSKIY, A.T.; RIVLINA, Yu.L.;
Prinimali uchastiye: EMMANUILOV, Yu.M.; KRUCHININA, G.I.;
ZAYTSEVA, L.V.

Internal stresses developed in the process of formation
and aging of nitrocellulose coatings. Lakokras.mat.1 ikh prim.
no.1:15-18 '63. (MIRA 16:2)

(Paint materials)
(Strains and stresses)

YAKUBOVICH, S.V.; MASLENNIKOVA, N.L.; SANZHAROVSKIY, A.T., Prinsipal
uchastnye; KRUCHININA, G.I.; DONDE, L.V.; KARYAKINA, L.A.

Studying the internal stresses and mechanical properties of
paints based on cellulose nitrates during their atmospheric aging.
Lakokras.mat. i ikh prim. no.2:37-40 '64. (MIRA 17:4)

KRUCHININA, I. L.

USSR/Medicine - New Treatment

Jan/Feb 52

"Results of the Treatment of True Ozena by Aero-
ionization and Direct Blood Transfusion According
to the Method of S. B. Grobshteyn and I. M. E.
Kerzanov," I. L. Kruchinina, Clinical Dept, Cen
Sci Res Inst of Otorhinolaryngol Min of Pub Health
RSFSR

"Vest Oto-Rino-Laringol" Vol XIV, No 1, pp 45, 46

The above institute approved a new successful
treatment for ozena developed by Grobshteyn, Dr
Med Sci, and Prof Kerzanov, i.e., by aero-ioniza-
tion and direct blood transfusion (cf "Vestnik
Oto-Rino-Laringol" No 1, 1948). The patients

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USSR/Medicine - New Treatment
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suffered from various types of true ozena. The
usual phys exams were made; blood tests showed
leucopenia and relative lymphocytosis while the
erythrocyte sedimentation reaction (ROE) and the
hemoglobin content were nearly normal. As a re-
sult of the treatment, the leucocyte count in-
creased 50%.

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KHUCHININA, I.L.; SHCHERBATOV, I.I., professor, *saveduyushchiy*.

Congenital cysts and fistulas of the nose in children. *Vest.oto-rin.* 15
no.3:20-23 My-Je '53. (MLRA 6:8)

1. Kafedra bolezney ukha, gorla i nosa pediatricheskogo fakul'teta II Mo-
skovskogo meditsinskogo instituta imeni I.V.Stalina. 2. Oto-laringologi-
cheskoye otdeleniye detskoy klinicheskoy bol'nitsy imeni N.F.Filatova.
(Nose--Diseases) (Fistula) (Cysts)

SHCHERBATOV, I.I.; KRUCHININA, I.L.

Blood transfusion in children in otolaryngological practice. Vest.
otorinolar., Moskva 15 no.4:12-16 July-Aug 1953. (GLML 25:1)

1. Professor for Shcherbatov; Assistant for Kruchinina. 2. Of the
Otolaryngological Clinic of the Pediatric Faculty of Second Moscow
Medical Institute imeni I. V. Stalin and of the Children's Clinical
Hospital imeni N. F. Filatov.

KRUCHININA, I. I.

KRUCHININA, I. I. -- "Material on the Innervation of the Mucosa of the Middle Ear." Second Moscow State Medical Inst Ireni I. V. Stalin. Moscow, 1955. (Dissertation for the Degree of Candidate in Medical Sciences).

So.: Knizhnaya Letopis', No. 6, 1956.

KREJCHININA, I.L.

Cementoma of the accessory sinuses of the nose. Vest.oto-rin 17
no.4:69-71 J1-Ag '55. (MLRA8:10)

1. Iz kafedry bolezney ukha, gorla i nosa (zav.-prof. I.I.Shchev-
batov) pediatricheskogo fakul'teta II Moskovskogo instituta imeni
I.V.Stalina.

(PARANASAL SINUSES, neoplasms,
dentigerous cyst.)

(CYSTS, dentigerous,
paranasal sinuses)

KRUCHININA, I. L. kand.med.nauk

Data on the innervation of the mucous membrane of the middle ear in man. Vest.oto-rin. 20 no .5: 36-41 '58

The article presents studies on the innervation of the mucous membrane of the middle ear in children and adults. The author observed variants in the paths and distribution of nerve branches of the tympanic plexus. In children, the tympanic plexus is usually situated on the surface, leaving an insignificant trace on the medial wall; in adults, the tympanic nerve and its branches pass through the retro-tympanic fissure or through closed bone canals. Experiments on cats, with section of the semilunar ganglion of the trigeminal nerve, of the superior cervical ganglion or of the petrosal ganglion of the glossopharyngeal nerve, revealed these nerves' participation in the innervation of the mucous membrane of the middle ear.

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - prof. I.I. Shcherbatov) pediatricheskogo fakul'tata II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(EAR, MIDDLE, innervation

mucous membrane innerv. in man (Rus)

DOLETSKIY, Stanislav Yakovlevich, prof.; LENYUSHKIN, Aleksey Ivanovich, kand. med. nauk; AFANAS'YEVA, V.M., kand. med. nauk; GOLOSOVA, T.V., kand. med. nauk; YERMOLIN, V.N.; KALAMKARYAN, A.A., kand. med. nauk; KRUCHININA, I.L., kand. med. nauk; NOVIKOVA, Ye.Ch., kand. med. nauk; YEGOROVA, A.M.; OSTROMOUKHOVA, G.A.; PONIZOVSKAYA, B.M.; FRIDMAN, R.A., red.

[Pyoinflammatory diseases in newborn infants] Gnoino-vospalitel'nye zabolevaniia novorozhdennykh. Moskva, Meditsina, 1965. 282 p. (MIRA 18:8)

KRUCHININA, I.P.

Endemic goiter in Bukhara Province. Izv. AN Uz. SSR. Ser. med.
no.1:29-32 '58. (MIRA 12:7)

1. Respublikanskiy protivozobnyy dispanser.
(BUKHARA PROVINCE--GOITER)

KRUCHININA, I.P.

Treatment of thyrotoxicosis as reflected in records of the
republic antigoiter dispensary. Izv.AN Uz.SSR.Ser.med.
no.2:5-12 '58. (MIRA 12:5)

1. Respublikanskiy protivozobnyy dispanser.
(THYROID GLAND--DISEASES)

VOROB'YEV, V.V.; KRUCHININA, L. Yu.

Methodology of preparing maps showing the distribution of
population in Irkutsk Province. Trudy Vost.-Sib. fil AN
SSSR no.32:130-135 '60. (MIRA 14:4)
(Irkutsk Province--Population--Maps)

TKACHUK, V.G., doktor geologo-mineralog. nauk; TOLSTIKHIN, N.I., prof.; PINNEKER, Ye.V., kand. geologo-mineralog. nauk, mladshiy nauchnyy sotr.; YASNITSKAYA, N.V., mladshiy nauchnyy sotr., khimik; KRUTIKOVA, A.I., mladshiy nauchnyy sotr., khimik; SHOTSKIY, V.P., kand. geogr. nauk; ORLOVA, L.M., starshiy gidrogeolog; STEPANOV, V.M., kand. geologo-mineralog. nauk; VLASOV, N.A., kand. khim. nauk; PROKOP'YEV, B.V., kand. khim. nauk; CHERNYSHEV, L.A., starshiy prepodavatel'; PAVLOVA, L.I., starshiy prepodavatel'; Prinsipialni uchastiyey: IVANOV, V.V., kand. geologo-mineralog. nauk; YAROTSKIY, L.A., kand. geologo-mineralog. nauk; KARASEVA, A.P., nauchnyy sotr.; ARUTYUNYANTS, R.R., nauchnyy sotr.; ROMANOVA, E.M., nauchnyy sotr.; TROFIMUK, P.I., starshiy gidrogeolog; LADEYSHCHIKOV, P.I., starshiy nauchnyy sotr., kand. geogr. nauk; LYSAK, S.V., starshiy laborant; KRUCHININA, L.Yu., laborant; SEMENOVA, Ye.A., red. izd-va; BOCHEVER, V.T., tekhn. red.

[Mineral waters of the southern part of Eastern Siberia] Mineral'nye vody iuzhnoi chasti Vostochnoi Sibiri. Moskva. Vol.1. [Hydrogeology of mineral waters and their significance for the national economy] Gidrogeologiya mineral'nykh vod i ikh narodnokhoziaistvennoe znachenie. Pod obshchei red. V.G.Tkachuk i N.I.Tolstikhina. 1961. 346 p. (MIRA 14:8)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Vostochno-sibirskiy geologicheskii institut. (Continued on next card)

TKACHUK, V.G.--- (continued) Card 2.

2. Vostochno-Sibirskiy geologicheskii institut (for Tkachuk, Pinneker, Yasnitskaya, Krutikova, Lysak). 3. Institut geografii Sibirskogo otdeleniya Akademii nauk SSSR (for Shotskiy). 4. Chitinskoye geologicheskoye upravleniye (for Orlova). 5. Sosnovskaya ekspeditsiya Ministerstva geologii i okhrany neдр SSSR (for Stepanov). 6. Irkutskiy gosudarstvennyy universitet (for Vlasov, Frokop'yev, Chernyshev, Pavlova). 7. Leningradskiy gornyy institut (Tolstikhin). 8. Gosudarstvennyy nauchno-issledovatel'skiy institut kurortologii i fizioterapii (for Ivanov, Yarotskiy, Karaseva, Arutyunyants, Romanova). 9. Irkutskoye geologicheskoye upravleniye (for Trofimuk). 10. Baykal'skaya limnologicheskaya stantsiya Vostochno-Sibirskogo filiala AN SSSR (for Ladeyshchikov). 11. Otdel ekonomiki i geografii Vostochno-Sibirskogo filiala AN SSSR (for Kruchinina).
(Siberia, Eastern--Mineral waters)

BARET, T.L.; KRUCHININA, M.M.

Using the highly vitaminized Moldavian pepper for the preparation of canned food. Kons. i ov.prom. 15 no.9:25-26 S '60. (MIRA 13:9)

1. Moldavskiy nauchno-issledovatel'skiy institut oroshayemogo zemledeliya i ovoshchevodstva. (Moldavia--Pepper) (Food, Canned)

AGRANOVSKAYA, I.A.; ASATKINA, Ye.F.; BOYTSOVA, Ye.P.; BOCHARNIKOVA, A.D.;
 BOYTSEL', Z.A.; IVANOVA, Ye.A.; KALASHNIKOVA, V.A.; KLIMKO, S.A.;
 KRUCHININA, N.Y.; MLYASOVA, Ye.S.; MARKOVA, L.G.; MARTINOVA, Z.I.;
 POKROVSKAYA, I.M.; POLUKHINA, V.A.; ROMANOVSKAYA, G.M.; SAMIGULINA,
 Ye.P.; SEDOVA, M.A.; SIGOVA, N.N.; STEL'MAK, N.K.; PERLIN, S.S., re-
 daktor izdatel'stva; GUBOVA, O.A., tekhnicheskiy redaktor.

[Atlas of Oligocene spore and pollen complexes in various regions of
 the U.S.S.R.] Atlas oligotsenovykh sporovo-pyl'tsevykh kompleksov
 razlichnykh raionov SSSR. Moskva, Gos.nauchno-tekhn.isd-vo lit-ry
 po gologii i okhrane neдр. 1956. 312 p. (Leningrad, Vsesoiuznyi
 geologicheskii institut. Materialy, no.16) (MLRA 10:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut
 Ministerstva geologii i okhrany neдр SSSR. (for Asatkina, Boytsova,
 Kalashnikova, Kruchinina, Pokrovskaya, Romanovskaya, Sedova, Stel'-
 mak). 2. Yuzhno-Ural'skoye geologicheskoye upravleniye (for Sigova)
3. Ural'skoye geologicheskoye upravleniye (for Agranovskaya, Bocharni-
 kova, Martynova, Polukhina, Samigulina). 4. Trest "Zapsibneftegeologiya"
 (for Boytsel', Ivanova, Klimko, Markova). 5. Geograficheskii fakul'tet
 Leningradskogo gosudarstvennogo universiteta (for Malyasova)
 (Pollen, Fossil) (Spores (Botany), Fossil)

~~SECRET~~
BOYTSOVA, Ye.P.; GLADKOVA, A.N.; ZAUVER, V.V.; KRUCHININA, N.Y.;
MAL'YASOVA, Ye.S.; MOREVA, V.A.; POKROVSKAYA, I.M.; ROMANOVSKAYA, G.M.;
SEDOVA, M.A.; SIGOVA, N.H.; POKROVSKAYA, I.M., redaktor; PERLIN, S.S.
redaktor izdatel'stva. GUROVA, O.A., tekhnicheskiy redaktor.

[Atlas of Miocene spore and pollen complexes of various regions of
the U.S.S.R.] Atlas miotsenovyykh sporeve-pyl'tsevykh kompleksov
razlichnykh raionov SSSR. Moskva, Gos.nauch.tekhn.isd-vo lit-ry po
geol. i okhr.nedr, 1956. 460 p. (Leningrad, Vsesoiuznyi geologicheskii
institut. Materialy, no.13) (MIRA 10:1)
(Spores (Betany), Fossil) (Pollen, Fossil)

BOYTSOVA, Ye.P.; VOYEVODOVA, Ye.M.; ZAUER, V.V.; KOL'TSOVA, T.T.;
KRUCHININA, N.V.; MARTYNOVA, Z.I.; PANOVA, L.A.; POKROVSKAYA,
I.M.; ROMANOVSKAYA, G.M.; SEDOVA, M.A.; STEL'MAK, N.K.;
TABACHNIKOVA, I.P.

[Atlas of lower Cretaceous spore and pollen complexes of some
regions of the U.S.S.R.] Atlas nizhnemelovykh sporovo-pyl'tsevykh
kompleksov nekotorykh raionov SSSR. Moskva, Nedra, 1964. 551 p.
(Leningrad, Vsesoiuznyi geologicheskii institut. Trudy, vol.124)
(MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii insti-
tut (for Boytsova, Kol'tsova, Kruchinina, Panova, Pokrovskaya,
Romanovskaya, Sedova, Stel'mak, Tabachnikova). 2. Ural'skoye
geologicheskoye upravleniye (for Martynova). 3. Severo-Vostochnoye
geologicheskoye upravleniye (for Voyevodova). 4. Lenin-
gradskiy filial Vsesoyuznogo ordena Lenina proyektno-izyskatel'-
skogo i nauchno-issledovatel'skogo instituta im. Z.Ya. Zhuka
(for Zauer).

EYDEL'SHTEYN, S.I., GOL'TSER, S.G., KALININA, Ye.G., KRUCHININA, N.V.

Levomycesin aerosols. Sov.med. 22 no.11:81-83 N'58 (MIRA 11:11)

1. Iz Vsesoyuznogo nauchno-issledovatel'skogo instituta antibiotikov
i Tsentral'noy polikliniki Ministerstva zdravookhraneniya RSFSR.
(RESPIRATORY TRACT, infect.
chloramphenicol aerosol ther. (Rus))
(CHLORAMPHENICOL, ther. use
resp. tract infect., aerosol admin (Rus))

КРУГИНИНА, О.Д.

Significance of preventive inhibition in the prevention of pregnancy and labor complications. Akush. i gin. 33 no.4:35-39 J1-Ag '57.

(MIRA 10:11)

1. Is laboratorii normal'noy i patologicheskoy fiziologii (sav. - prof. N.L.Germasheva), otdeleniya patologii beremennosti (sav. - prof S.M.Bekker) Instituta akusherstva i ginekologii (dir. - prof. P.A. Beloshapko) Akademii meditsinskikh nauk SSSR.

(LABOR, compl.)

prev. by sufficient sleep in pregn.)

(SIMP, ther. use

in pregn. for prev. of labor compl.)

KEUCHININA, O.D.

Some data on the state of the nervous system in climacteric
neurosis. *Sov.med.* 24 no.1:80-85 Ja '60. (MIRA 13:5)

1. Iz otdeleniya neoperativnoy ginekologii (zav. - prof. S.G.
Khaskin) Instituta akusherstva i ginekologii (dir. - chlen-
korrespondent AMN SSSR prof. P.A. Beloshapko).

(CLIMACTERIC complications)

(NEUROSI pathology)

(NERVOUS SYSTEM pathology)

KRACHENINA, R.A.

Cleaning capacity of the brushes of wire rappers. Izv. vyz. ucheb.
zav.; tekhn. tekst. prom. no.1:136-140 '65. (MIRA 18:5)

1. Leningradskiy institut tekstil'noy i legkoy promyshlennosti
imeni Kirova.

KRUCHININA, R. A.

KRUCHININA, R. A. -- "Certain Problems of Designing of a Skein of Spinning and Twisting Machines." Sub 5 Jun 52, Moscow Textile Inst. (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Vechernaya Moskva, January-December 1952

KRUCHININA, R.A.

Design of the interchangeable reeling gear on spinning machines.
Izv.vys.ucheb.zav.; tekhn.tekst.prom. no.3:57-63 '61. (MIRA 14:7)

1. Leningradskiy tekstil'nyy institut im. S.M. Kirova.
(Spinning machinery)

KRUCHININA, R.A.

Possibilities of increasing the size of packages on existing spinning machines. Izv.vys.ucheb.zav.; tekhn.tekst.prom. no.1:66-72 '62. (MIRA 15:3)

1. Leningradskiy tekstil'nyy institut im. S.M.Kirova.
(Spinning machinery)

KRUCHININA, R.A.

Analyzing the forces acting upon the mechanism of the revolution speed control of the card clothing rolls in VI-186 wire nappers. Izv.vys.ucheb. zav.; tekhn.tekst.prom. no.5:113-118 '64.

(MIRA 18:1)

1. Leningradskiy institut tekstil'noy i legkoy promyshlennosti imeni S.M.Kirova.

KRUCHININA, R.A.; DANILOV, K.D., inzh., retsenent; VAL'SHCHIKOV,
N.M., kand. tekhn. nauk, red.

[Machines for mechanical textile finishing; theory, design
and construction] Mashiny dlia mekhanicheskoi otdelki tka-
nei; teoriia, raschet i konstruirovaniie. Moskva, Mashino-
stroenie, 1965. 270 p. (MIRA 18:5)

KLINOV, Iosif Yakovlevich; KRUCHININA, V.I., redaktor; AYZENSHTAT, I.I.,
redaktor; KORNEYEVA, V.I., tekhnicheskii redaktor

[Wood as a material for chemical apparatus] Derevo kak material dlia
khimicheskoi apparatury. Pod red. V.I.Kruchinina. Moskva, Gos.
nauchno-tekhn. izd-vo khim. lit-ry, 1956. 53 p. (Korroziia v khimiche-
skikh proizvodstvakh i sposoby zashchity, no.5) (MIRA 9:8)
(Wood) (Chemical apparatus)

s/028/62/000/001/001/002
D228/D301

AUTHORS: Ivanov, A.G. and Kruchinina, Ye. V.

TITLE: Alloy tool steel

PERIODICAL: Standartizatsiya, no. 1, 1952, 40-44

TEXT: With the aim of improving the quality of alloy tool steel the Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy) has developed a new standardization plan to replace the $\Gamma O C$ 5950-51 (GOST 5950-51) specification. The scheme provides for the classification of alloy tool steels according to their designation and general technological properties. The authors tabulate the designation and chemical composition of 10 new makes of alloy steel introduced in this project: 65X ϕ (65KhF), X06 (Kh06), X8 (KhV), X Γ C ϕ (KhGSVF), 9X5B ϕ (9Kh5VF), 8X4B4 ϕ (8Kh4VF), 4X2B5 ϕ (4Kh2V5FM), 4X3B ϕ (4Kh3VF), 4X5B4 ϕ (4Kh5V4FM), and 4X5B2 ϕ (4Kh5V2FS). It is noted that the altered standards of hardness for 9X ϕ (9KhS), X ϕ (KhS), X (Kh), and X ϕ (KhVG) steels as received, and the

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Alloy tool steel

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D228/D301

obligatory control of the hardness of these makes after tempering, will enable consumers to obtain material with a guaranteed annealability. The new specification introduces definite standards for the microstructure of alloy tool steel--the perlite form, carbide lattice, carbide heterogeneity--and gives procedures for controlling it, thus eliminating disputes between suppliers and consumers over the quality of the product. These were developed at the Central Scientific Research Institute of Ferrous Metallurgy and the zavod "Elektrostal'" (Electrosteel Plant) and entail the microscopic examination of polished specimens etched in a 4% solution of HNO_3 and EtOH. Standard schemes adduced in accordance with allowances for mechanical processing are also laid down for the depth of the decarbonized layer. The authors describe determination of the depth of decarbonization in 9X5B ϕ (9Kh5VF), X6B ϕ (Kh6VF), and 8X4B4 ϕ (8Kh4V4F) steels by the Sadovskiy method, and it is concluded that these specifications will promote the regulation and unification of the production technology of tools and the enhancement of their quality. There are 5 tables. ✓

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KRUCHININA, Ye. V.

AUTHOR: Ivanov, A.G., Kruchinina, Ye.V., Popova, L.G. 32-9-17/43

TITLE: The Control Method and the Scale of Carbide Heterogeneity in Highly Alloyed Chromium Tool Steels (Metodika kontrolya i shkala karbidnoy neodnorodnosti vysokokhromistyykh instrumental'nykh staley)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp. 1088-1091 (USSR)

ABSTRACT: A special scale for controlling carbide heterogeneities in a highly carbonized and highly alloyed chromium steel is worked out. For this purpose samples from 184 melts of the "Elektrostal'" plant, which were rolled up to from 10 to 200 mm, were investigated. First evaluation of carbide heterogeneities was carried out according to the scale of the GOST 5952-51. It is shown that with an increase of the diameter of the rolling material, i.e. with a reduction of the degree of buckling, the characteristic value of the carbide heterogeneity becomes greater. Investigation of the microstructure showed that the character of carbide distribution is the same in all investigated types of steel, in dependence on the degree of buckling. However, the size of the carbide particles is considerably larger in Kh 12 steel than in Kh 12 m, Kh 12 F and Kh 12 F 1 steel. The scale shows the carbide heterogeneity of the rolling material from 10 to 160 mm. The basic characteristic feature of the micro-

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The Control Method and the Scale of Carbide Heterogeneity in Highly Alloyed
Chromium Tool Steels 32-9-17/43

structure distribution according to characteristic values is the character of the eutectic carbides, which, in turn, depend on the degree of buckling in rolling or forging. The control method for heterogeneities according to the scale mentioned is described. There are 3 figures and 2 tables.

ASSOCIATION: Central Scientific Research Institute for Iron Metallurgy and the "Elektrostal'" Plant (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i zavod "Elektrostal'")

AVAILABLE: Library of Congress

Card 2/2

SOV/137-58-9-19984

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 271 (USSR)

AUTHORS: Ivanov, A.G., Kruchinina, Ye.V., Rybalko, V.S.

TITLE: An Investigation of Steels for Flat Wood-working Blades
(Issledovaniye staley dlya ploskikh derevoobratyvayushchikh nozhey)

PERIODICAL: V sb.: Metallovedeniye i term. obrabotka. Moscow, Metallurgizdat, 1958, pp 256-272

ABSTRACT: New steels for woodworking blades, having the following % content, are investigated: C 0.76-1.48, Cr 2.06-12.2, W 1.06-4.26, and V 0.2-1.98. The findings result in the following recommendations for blade steels, in %: 1) 9Kh5F: C 0.85-1.0, Cr 4.6-5.2, V 0.2-0.4; 2) 9Kh5VF: C 0.85-1.0, Cr 4.6-5.2, W 0.8-1.2, V 0.2-0.4; 3) R4: C 0.7-0.8, Cr 4.2-5.0, W 3.7-4.5, V 0.9-1.3.

F.U.

1. Cutting tools--Materials 2. Steel--Test results 3. Wood--Processing

Card 1/1

~~SECRET~~
PSTRENKO, N.S., inzh.; KRUCHININA, Ye.V., inzh.; IVANOV, A.G., kand. tekhn.
nauk; YAMKOVOY, G.T., kand. tekhn. nauk.

Ways of increasing bore rod resistance. Gor. zhur. no.2:26-31 P '58.
(Rock drills) (MIRA 11:3)

IVANOV, A.G.; KRUCHININA, Ye. V.; FOMKIN, F.F.; OHURILIN, A.A.; TRUSOVA,
L.P.; ASTROV, Ye. I.; BIRYUKOVA, V.N.

Increasing the performance and operational indices of saws. Der.
prom. 7 no. 5:8-12 My '58. (MIRA 11:7)
(Saws)

S/028/61/000/005/002/004
D210/D306

AUTHORS: Ivanov, A.G. and Kruchinina, Ye. V.

TITLE: High speed steel for tool manufacture

PERIODICAL: Standardizatsiya, no. 5, 1961, 28-32

TEXT: Within the last few years, great changes have taken place in the production of, and requirements for, high speed steels, as a result of which it was necessary for the existing specification GOST 5952-51 to be revised. A new standard was drawn up by the Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific-Experimental Institute of Ferrous Metallurgy) which is based on research carried out at the Tsentral'nyy nauchno-issledovatel'skiy institut tyazhelogo mashino-stroyeniya (Central Scientific-Experimental Institute of Heavy Machine Construction) the Eksperimental'nyy nauchno-issledovatel'skiy institut metallo-rezhushchikh stankov (Experimental Scientific Research Institute of Metal Cutting Mills) the Vsesoyuznyy nauchno-issledovatel'skiy

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High speed steel for tool manufacture

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instrumental'nyy institut (All-Union Scientific Research Institute of Instrumentation) the Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy promyshlennosti (Scientific Research Institute of Automobile Technology) and other institutions. The new standard ensures a greatly improved quality of cutting tools and an increase in wear resistance of between 1.5 and 3 times as compared with the existing standard. Requirements are laid down for rolled and forged steels with respect to depth below the surface at which tests are to be carried out for non-uniformity of carbide distribution on a test section. This depth is 10 mm in the case of bars of 40 mm diameter or over, and one quarter of a diameter in the case of smaller bars. The degree of non-uniformity of carbide distribution is expressed by points on a special scale. Individual specifications for very small tolerances in the machining of steel billets prior to heat treatment which depend on the depth of the decarburised layer will standardize tool steels without causing an increase in the waste of steel. The introduction of new standards with respect to decarburization and minimum tolerances in machining will enable any differences

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High speed steel for tool manufacture

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between the manufacturers and the consumers of tool steel to be solved in the interest of the national economy, and will ensure considerable economy by omitting repeated annealing processes at metallurgical works. Repeated annealing is used to convert the decarburized layer into scales. In actual practice, this operation is unnecessary, since the depth of the decarburized layer is considerably smaller than the tolerances allowed in machining. Repeated annealing results in deterioration of the steel and in loss of metal due to scale-formation. The hardness limit for steels P18 and P9 has been raised from V.P.N. 255 to 269. This will indirectly contribute to improving the quality of tools and to reducing the number of rejects by obviating repeated annealing. There are 4 tables and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: Catalogue of the English firm "Osborn", Special Tool Steels, Sheffield, 1956, and Catalogue of the English firm "English Steel Rolling Mills Corporation Ltd.".

Card 3/3

IVANOV, A.G., kand.tekhn.nauk; KRUCHIN.NA, Ye.V., inzh.

Foreign made rapid steel [from foreign journals]. Metalloved.
i term. obr. met. no.5:57-64 My '62. (MIRA 15:5)
(Tool steel)

DORONIN, V.M.; IVANOV, A.G.; KRUCHININA, Ye.V.; UGLOVA, A.M.

Hardenability of ShKh15, 9KhS and KhVG steels. Standarti-
zatsiia 28 no.1:17-23 Ja '64. (MIRA 17:1)

IVANOV, A.G.; KRUCHININA, Ye.V.

Low-alloy, R4 and R7 high-speed steels, their heat treatment and
properties. Sbor. trud. TSNIICHM no.39:31-39 '65. (MIRA 18:7)

KRUCHININA, Z.A.

Tugarinov, V.V. and Kruchinina, Z.A. "Determining the weight of a quantity of grain when its moisture content varies from the normal", Doklady (Mosk. s.-kh. akad. im. Timiryazeva), Issue 8, 1948, (In index: 1949), p. 67-69.

SO: U-411, 17 July 53, (Letopis' Zhurnal 'rykh Statey, No. 20, 1949)

KRUCHINSKIY, G. V. Cand Med Sci -- (diss) "Plastic correction of defects of the nose and lips after lupus tuberculosis." Mos, 1957. 21 pp (Min of Health USSR. Central Inst for the Advanced Training of Physicians. Central Inst of Traumatology and Orthopedics), 200 copies (KL, 11-58, 121)

-128-

KRUCHINSKIY, G.V., aspirant

Method for reconstructing a nose partition destructed by lupus tuberculosis. Stomatologiya 36 no.1:47-49 Ja-F '57. (MIRA 11:1)

1. Iz kafedry chelyustno-litsevoy khirurgii (zav. - prof. N.M. Mikhel'son) Tsentral'nogo instituta usovershenstvovaniya vrachey (dir. V.P.Lebedeva) i Tsentral'nogo instituta travmatologii i ortopedii (dir. - chlen-korrespondent AMN SSSR N.N.Priorov)
(LUPUS) (NOSE--SURGNRY)

KRUCHINSKIY, G.V.

Cases of epidermoids and cholesteatomas of the lower jaw. Stomatologia
37 no.4:58-60 J1-Ag '58 (MIRA 11:9)

1. Iz kafedry chelyustno-litsevoy khirurgii (zav. - prof. N.M. Mikhel'son) Tsentral'nogo instituta usovershenstvovaniya vrachev (dir. V.P. Lebedeva) i Tsentral'nogo instituta travmatologii i ortopedii (dir. - prof. N.N. Priorov).
(JAWS---TUMORS)

KRUCHINSKIY, Genrikh Vladislavovich; KAZNIN, V.P., red.; ZUYEVA,
N.K., tekhn. red.

[Restorative operations on the face following lupus] Vosstanovi-
tel'nye operatsii na litse posle volchanki. Moskva, Medgiz,
1961. 135 p. (MIRA 15:10)

(LUPUS) (SURGERY, PLASTIC)

KRUCHINSKIY, G. V.; PAKOVICH, G. I.

Surgical removal of wrinkles of the face and neck. Khirurgia
38 no.5:113-117 My '62. (MIRA 15:6)

1. Iz khirurgicheskogo otdeleniya (sav. - kandidat meditsinskikh
nauk G. V. Kruchinskiy) Instituta vrachebnoy kosmetiki
Ministerstva zdravookhraneniya RSFSR.

(SURGERY, PLASTIC)

BOEROV, B.S.; KRUCHINSKIY, G.V.; STYSKINA, T.V.

New instruments for cosmetic operations on the face. Sov.med. 26
no.6:130-132 Je '62. (MIRA 15:11)

1. Iz Nauchno-issledovatel'skogo instituta eksperimental'noy
khirurgicheskoy apparatury i instrumentov (dir. M.G.Anan'ev)
i Instituta vrachebnoy kosmetiki (dir. - A.F.Akhabadse)
Ministerstva zdravookhraneniya SSSR.
(SURGICAL INSTRUMENTS AND APPARATUS) (FACE—SURGERY)

KRUCHINSKY, G.V.

Rhinoplasty with free auricle transplant. Acta chir. plast. 5 no.1:
14-22 '63.

1. Institute of Medical Cosmetics, Moscow (U.S.S.R.) Director:
A.F. Akhabadze. (RHINOPLASTY)

EMICHINSKIY, G.V., kand. med. nauk; PAKOVICH, G.I., kand. med. nauk

Surgery for the removal of wrinkles from individual areas of
the face and neck. Khirurgiya 39 no.12:38-92 D '63
(MIRA 18:1)

1. Iz Instituta vrachebnoy kosmetiki (direktor A.F. Ashabadze),
Moskva.

KRUCZYNSKIJ, G.W. [Kruchinskiy, G.V.]

Corrective surgery in cases of so-called "cat's ear".
Czas. stomat. 18 no.8/9:911-916 Ag-S '65.

1. Z Centralnego Ins'tytutu Naukowo-Badawczego Stomatologii
(Dyrektor: prof. A.I. Rybakow [A.I. Rybakov]) i z Instytutu
Kosmetyki Lekarskiej ZSRR, Moskwa (Dyrektor: A.F. Achabadze
[A.F. Akhabadze]).

S/576/62/009/000/009/010
A001/A101

AUTHORS: Podstrigach, Ya. S., Kruchkevich, V. Yu.

TITLE: Forced thermo-elastic oscillations in cylindrical and spherical bodies

SOURCE: Akademiya nauk Ukrain's'koyi RSR. Instytut mashynoznavstva i avtomatyky, L'viv. Nauchnyy zapiski. Seriya mashinovedeniya. v. 9, 1962. Voprosy mashinovedeniya i prochnosti v mashinostroyeni. no. 8, 80 - 97

TEXT: The purpose of this study was the determination of non-stationary temperature fields in hollow cylinders and spheres and the calculation of resulting stresses. The authors determine the temperature field in a hollow body (infinite cylinder, sphere) whose surfaces exchange heat with a surrounding medium of constant temperature in accordance with Newton's law. The temperature of a medium filling up the body varies by a periodic law. Using the equation of heat conductivity and corresponding boundary and initial conditions the general solution of this equation is sought for in the following form:

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Forced thermo-elastic oscillations in...

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$$t_{\nu}(\rho, \tau) = t_{\nu 0}(\rho) + t_{\nu 1}(\rho) \cos \alpha * \tau + t_{\nu 2}(\rho) \sin \alpha * \tau + t_{\nu}^*(\rho, \tau) \quad (5)$$

where ν is dimensionless radial coordinate r/R_2 (R_2 is external diameter of the body); $\nu = 1$ pertains to cylinder, $\nu = 2$ pertains to sphere. After a certain time interval, asymptotic thermal conditions set in and the temperature at any point oscillates with the same period as that of the inner medium, but with a different amplitude and phase shift. Rigorous solutions are found for the case of a hollow cylinder in terms of Tompson functions, and for the case of a hollow sphere in terms of hyperbolic functions. As an example, a practically important case of pipelines in thermal electric power stations is considered, when the outer surface of the cylinder (pipeline) is thermally insulated. The second problem dealt with is the determination of the stressed-strained state of the bodies subjected to forced thermo-elastic oscillations caused by periodic changes of temperature according to the same law (5). To calculate stresses, formulae derived by L. I. Lur'ye ("Prostranstvennyye zadachi teorii uprugosti", Spatial problems of the theory of elasticity, GITTL, 1955) are used. The expressions for radial and tangential stresses are inserted into the equation of equilibrium, and the differential equation obtained for displacements $U_{\nu}(\rho, \tau)$ is solved.

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Forced thermo-elastic oscillations in...

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A001/A101

Then, using this solution and expressions for stresses given by Lur'ye, the authors derive formulae for radial $\sigma_r^{(v)}$ and axial $\sigma_z^{(v)}$ stresses. For the latter case, conditions of axial strain are of importance. Two cases, when the cylinder ends are fixed and free, are considered and corresponding formulae for axial stresses are presented. The formulae are considerably simplified when inertia forces can be neglected. Comparing the results with the known Timoshenko's formulae for a quasi-stationary problem, the authors conclude that the formulae derived in the present article represent a generalization of Timoshenko's formulae extended to the case of steady-state conditions of forced oscillations.

SUBMITTED: June 12, 1961

Card 3/3

KRUCHKOV, S.P., inzh.

~~Multistoried~~ industrial building made of precast elements.
Prom, stroi. 39 no.8:16-17 '61. (MIRA 14:9)
(Precast concrete construction)
(Industrial buildings)

MUSTAFIN, I.S.; KRUCHKOVA, B.S.; SIVANOVA, O.V.

Sensitivity limits of titrimetric analysis. Trudy po khim.i khim.tekh.
no.1:121-124 '63. (MIRA 17:12)

5(2)

SOV/153-2-3-1/29

AUTHORS: Mustafin, I. S., Kruchkova, Ye. S.

TITLE: Indicators With Internal Light Filters. I. Determining the Hardness of Lightly Mineralized Waters Using the Indicator "Gidron 1."

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 3, pp 311-315 (USSR)

ABSTRACT: A new indicator "Gidron 1" is suggested for the trilonometric determination of hardness. It consists of two portions of 0.5 % solution of acid monochrome blue 3 in an alcohol buffer mixture of a pH of approximately 10 and 3 portions of 0.25 % aqueous solution of naphthene yellow as internal light filter. Both dyes are produced in the USSR; the authors used products of the Derbenevskiy khimicheskii zavod (Derbenevskiy Chemical Works). The new indicator shows very high sensitivity to Mg and Ca (0.012 µg/ml), moreover, it reacts with Sr, Ba, Zn, Cu, Ni, and Co (Table 3). With magnesium and calcium the indicator forms a red complex, in titration the color turns green without intermediate colors (absorption curves in Figs 1 and 2; molar extinction coefficients for λ_{max} in Table 2). The indicator is suited for a hardness determination on water with a

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Indicators With Internal Light Filters. I. Deter- SOV/153-2-3-1/29
mining the Hardness of Lightly Mineralized Waters
Using the Indicator "Gidron 1."

hardness of less than 0.01 mg equivalent/l. There are 2
figures, 4 tables, and 9 references, 4 of which are Soviet.

ASSOCIATION: Saratovskiy gosudarstvennyy universitet imeni N. G. Cherny-
shevskogo - Kafedra analiticheskoy khimii (Saratov State
University imeni N. G. Chernyshevskiy - Chair of Analytical
Chemistry)

SUBMITTED: April 29, 1958

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5.5220

77742
SOV/75-15-1-4/29

AUTHORS: Mustafin, I. S., Kruchkova, Ye. S.

TITLE: "Hydron II", a New Indicator for Complexometric Determination of Calcium in the Presence of Magnesium

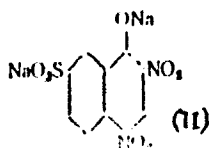
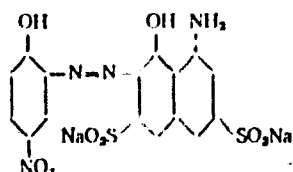
PERIODICAL: Zhurnal analyticheskoy khimii, 1969, Vol 15, Nr 1 pp 20-23 (USSR)

ABSTRACT: Preparation and use of a new indicator called "hydron II" for the complexometric determination of calcium in the presence of magnesium was studied. "Hydron II" is prepared by mixing one volume of 0.5% aqueous solution of compound (I) and 2 volumes of a 0.25% aqueous solution of naphthol yellow (II). The latter is used as an inner light filter to improve the end point. (I) is a dark brown powder, readily soluble in water, insoluble in chloroform and dioxane; in an alkaline solution (pH 12.5) it is violet blue;

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"Hydron II", a New Indicator for
Complexometric Determination of
Calcium in the Presence of Magnesium

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"Hydron II", a New Indicator for
 Complexometric Determination of
 Calcium in the Presence of Magnesium

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the presence of Ca^{2+} produces a bright pink color.
 Sensitivity: 0.5μ g-equiv/liter Ca^{2+} .
 Mg, under the above condition, does not react with
 "hydron II". Results of the calcium determination
 by titration with 0.02N complexon (III) solution,
 containing 2 ml of 1N NaOH/50 ml in the presence of
 "hydron II" are shown in Table 1.

Table 1. Titration of Ca in the presence of Mg

Ca ²⁺ Taken (m)	Molar Ratio Ca:Mg	Found Ca ²⁺
3,246	1:0	3,246
3,246	1:0.1	3,253
3,246	1:1	3,253
3,246	1:10	3,278
0,324	1:100	0,327

Card 3/5

"Hydron II", a New Indicator for
Complexometric Determination of
Calcium in the Presence of Magnesium

77742
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Interfering elements: Ni^{2+} , Co^{2+} , Zn^{2+} , Cu^{2+} ,
 Mn^{2+} . Fe in concentration under 1 mg/liter
does not interfere. Presence of Fe in concentrations
over 200 mg/liter interferes, since brown precipitate
of iron hydroxide is formed. Determination of Ca,
using "hydron II" can be carried out if 10% NaCl is
present. Examples of water-hardness determination
using "hydron II" are shown in Table 2.

Determination of water hardness (Ca), using "hydron II" as indicator

Table 2.

Water sample	Hardness (mg-equiv/ liter)
Tap water	2,2302
Diluted: 10 fold	0,2212
100 fold	0,0228
500 fold	0,0054

Card 4/5

"Hydron II", a New Indicator for
Complexometric Determination of
Calcium in the Presence of Magnesium

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There are 2 tables; and 16 references, 4 U.S., 2
Swiss, 10 Soviet. The 4 U.S. references are:
Welcher, F., The Uses of Ethylenediamine Tetra-
acetic Acid, New York, 1957, p 29; Diehl, H.,
Ellingboe, J., Analyt. Chem., 28, (1958);
Hilderbrand, H., Ch. Reilly, Analyt. Chem., 29,
258 (1957); Patton, J., Reeder, W., Analyt. Chem.,
28, 1026 (1956).

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December 4, 1958

Card 5/5

KRUCHKOVA, Ye.S.; MUSTAFIN, I.S.

Complexometric determination of calcium in rocks with the hydron II
indicator. Zav.lab. 27 no.6:668-669 '61. (MIRA 14:6)

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N.G.Chernyshevskogo.
(Calcium--Analysis)
(Indicators and test papers)

KRUCHKOVICH, G.I.

Classification of three-dimensional Riemann spaces according to
groups of motions. Usp.mat.nauk 9 no.1:3-40 Ja-F '54. (MIRA 7:2)
(Spaces, Generalized) (Transformations (Mathematics))
(Groups, Continuous)

KRUCHKOVICH, G.I.

To the article "Classification of three-dimensional Riemann spaces
according to motion groups." Usp.mat.nauk 9 no.3:285 '54.(MLRA 7:10)
(Spaces, Generalized)

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KRUČKOVIČ, G.I.

SUBJECT USSR/MATHEMATICS/Geometry CARD 1/2 PG - 402
 AUTHOR KRUČKOVIČ G.I.
 TITLE On the uniqueness of the decomposition of a reducible Riemannian space.
 PERIODICAL Doklady Akad. Nauk 108, 583-586 (1956) reviewed 11/1956

A Riemannian V_n is reducible when its $ds^2 = g_{ij} dx^i dx^j$ can be split into independent parts, so that $ds^2 = ds_0^2 + ds_1^2 + \dots + ds_k^2$ (1), where ds_0^2 is euclidean and the ds_v^2 are each irreducible and of more than one dimension. Then a theorem of P.A. Širokov (Izv. Kazansk. fiz-mat. obšč. 3, 11 (1938)) states that reducibility of the form $ds^2 = ds_1^2 + ds_2^2$ exists if and only if a tensor $a_{ij} = a_{ji} \neq q_{ij}$ exists such that $a_{ij,k} = 0$, $a_{ik} a_j^k = a_{ij}$. It is now shown that if ds_1^2 , ds_2^2 show r , resp. t absolutely parallel vector fields, this reduction is not unique and each one passes into the other by transformations of a G_{rt} of motions. This theorem can readily be generalized to the general case (1). If ds^2 can be written $ds_1^2 + (dx^{n+1})^2$, where ds_1^2 contains r absolutely parallel vector fields, then the group is a G_r . Certain other theorems on

Doklady Akad. Nauk 108, 583-586 (1956)

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reducibility and motion groups follow, with reference to the K^* spaces of
A.G. Walker (Proc. London Math. Soc. 52, (1950)).

KRUCHKOVICH, G. I.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress *(Cont.) Moscow
Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.
Koyantsov, N. I. (Moscow) Ruled-geometric Analog of Three-orthogonal Systems of Surfaces. 153-155

Mention is made of Vasil'yev, A. M.

There are 3 references, 2 of which are English, and 1 is USSR.

Korovin, V. I. (Moscow). Thrice Conjugated Systems of Surfaces. 155

Kotov, I. I. (Moscow). On Completeness of Plotting Ruled Surfaces and Surfaces With Circular Generators. 155

Kruchkovich, G. I. (Moscow). On Motion in Riemann Spaces. 155-157

Liber, A. Ye. (Saratov). On the Geometry of m -Surfaces in Affine and Projective Spaces. 157-158

Card 50/80

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KRUCHKOVICH, G. I., Cand Phys-Math Sci -- (diss) "On movements in Riemann spaces." Mos, 1957. Cover, 4 pp (Mos State Univ im M. V. Lomonosov, Mech-Math Faculty), 100 copies. Bibliography: pp 3-4 (15 titles) (KL, 52-57, 103)

KRUCHKOVICH, G. I.

AUTHOR: KRUCHKOVICH, G. I.

42-6-8/17

TITLE: On Motions in Semi-reducible Riemannian Spaces (O dvizheniyakh v poluprivodimyykh rimanovykh prostranstvakh)

PERIODICAL: Uspekhi Matematicheskikh Nauk, 1957, Vol. 12, Nr. 6, pp. 149-156 (USSR)

ABSTRACT: The author investigates the motions in the Riemannian spaces with the metric

$$(1) \quad ds^2 = ds_0^2 + \sigma ds_1^2 = g_{ij} dx^i dx^j + \sigma(x^1) a_{\alpha\beta} dx^\alpha dx^\beta.$$

He distinguishes not mixing motions, i.e. transformations of the form $\tilde{x}^i = f^i(x^k)$, $\tilde{x}^\alpha = \varphi^\alpha(x^\beta)$, and mixing motions, i.e. such motions for which the variables x^i and x^α are mixed with each other. It is stated that the group of not mixing motions either is a direct product of the motion group in ds_0^2 (on the surfaces $\sigma = A$) and the motion group in ds_1^2 or it has an order higher by one (at the expense of the motions which transfer $\sigma = A$ in $\sigma = CA$). Further the author gives conditions which have to be satisfied by ds_0^2 and ds_1^2 in order that the considered semi-

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On Motions in Semi-reducible Riemannian Spaces

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reducible Riemannian space admits also mixed motions. The principal result is the theorem: If (1) admits mixed motions, then ds^2 can be represented in the canonical form

$$(2) \quad ds^2 = ds_0^2(x^1, \dots, x^m) + \psi(x^1, \dots, x^m)(d\tau_0^2 + \varphi ds_2^2),$$

where $d\tau_0^2$ has the constant curvature K and the space

$d\tau_0^2 + \varphi ds_2^2$ is a $V_0(K)$. For (2) all motions are not mixed with respect to all three parts ds_0^2 , $d\tau_0^2$, ds_2^2 .

5 Soviet and 4 foreign references are quoted.

SUBMITTED: November 19, 1956
 AVAILABLE: Library of Congress

Card 2/2

196

AUTHOR: Kruchkovich, G. I. (Moscow).
TITLE: On motions in Reimannian spaces V_4 . (O dvizheniyakh v rimanovykh prostranstvakh V_4).
PERIODICAL: "Matematicheskiy Sbornik" (Mathematical Symposium), 1957, Vol.41 (83), No.2, pp.195-220 (U.S.S.R.)

ABSTRACT:

In the investigation of Reimannian spaces with indefinite metric form, the method of Fubini (valid only for a positive definite metric form (1,2)), is only applicable when the hyper-surfaces of transitivity of an intransitive group are not isotropic. This is explained by the fact that a well-known theorem (ref.7, p.254) is true in this case, in consequence of which these hypersurfaces are geodesically parallel, and so, transforming to a special system of coordinates, it is possible to conduct an analogous investigation even when the metric form is indefinite. In the case of pseudo-Reimannian spaces, non-isotropic surfaces of transitivity of a certain group can have an indefinite metric, and then it follows that the classification of motions of V_3 given by the author (5) can be used. Consequently, the classification of all Reimannian spaces V_4 by their motion groups can be completely solved if those V_4 can be found which permit an intransitive motion group with isotropic surfaces of transitivity. . The solution of this problem is the

On motions in Riemannian spaces V_4 . (Cont.) 196

object of this paper. Its results were published at a seminar on homogeneous spaces at the Moscow State University (Moskovskiy Gosudarstvenniy Universitet - MGU) under the direction of P. K. Rashevsky.

In the concluding section of the paper is given a review of spaces V_4 with intransitive motion groups. The following results are stated:-

If the space V_4 permits an intransitive motion group G_3 with two-dimensional surfaces of transitivity, then two cases are possible, (1) The surfaces of transitivity are isotropic spaces \bar{V}_2 (where \bar{V}_n is a degenerate Riemannian space whose metric tensor has rank $n - 1$), and then the metric of V_4 in some coordinate system can be reduced to the form (2.13) (see p.204 of the text); (2) The surfaces of transitivity are spaces V_2 and the metric takes the form (4.1) (see p.215 of the text). The spaces V_4 permitting a motion group G_3 which is intransitive on isotropic surfaces \bar{V}_2 can be reduced to one of the forms (2.16) (p.205), (2.22) (p.206), (2.29), (2.33) (p.207), (2.35) (p.208) or (2.42) (p.209). For a given group G_3 the set of permissible spaces V_4 depends on three arbitrary functions of the isotropic coordinate, if the group contains a particular operator or is reduced to the form (2.17) (p.205), or (2.23) (p.206) if $\epsilon = 0$, and on five arbitrary functions in the

On motions in Reimannian spaces V_4 . (Cont.) 196

remaining cases. The intransitive motion group G_4 acting over isotropic surfaces V_3 in spaces V_4 if a fully non-transitive motion group for spaces of the form (1), (4), (5), (8), (11), (see p.216) with the exception of the subprojective space (4.6) (p.217). If the space V_4 permits an intransitive group G_5 with isotropic surfaces of transitivity, then its metric can be put in the form (1.10) (p.199). The isotropic group G_6 with isotropic surfaces of transitivity is permitted only by the Kagan subprojective spaces. The exceptional Kagan subprojective space always permits an intransitive motion group $G_{\frac{n(n-1)}{2}}$ with isotropic surfaces of transitivity. If a transitive group is permitted, it has order either $\frac{n(n+1)}{2}$ and the space is Euclidean, or $\frac{n(n-1)}{2} + 1$ and then in a conformal Euclidean system of coordinates the functions σ satisfy eq.(4.14) (p.219) and the operator making $G_{\frac{n(n-1)}{2}}$ up to a transitive group has the form (4.15) (p.220).

On motions in Reimannian spaces V_4 . (Cont.) 196

There are 13 references of which 6 are Russian.

1. G. Gubini. Sugli spazii che ammettono un gruppo continuo di movimenti. Ann. di mat. (3) 8 (1903) p.39-81.
2. G. Fubini. Sugli spazii a quattro dimensioni che ammettono un gruppo continuo di movimenti. Ann. mat. (3) 9 (1904) p.33-90.
5. G.I.Kruchkovich. The classification of three-dimensional Reimannian spaces by their motion groups. Usp.Mat.Nauk, Vol.XI, No.1. (59) (1954) pp.3-40.
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Submitted 12/1/56.