

5 (2)

AUTHORS:

Markovskiy, L. Ya., ~~Kaputovskaya, G. V.~~, SOV/78-4-8-3/43
Kondrashev, Yu. D.

TITLE:

On the Problem of the Existence of a Magnesium Boride of the
Composition Mg_3B_2 (K voprosu o sushchestvovanii borida magniya
sostava Mg_3B_2)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8,
pp 1710 - 1714 (USSR)

ABSTRACT:

In his classical paper on boron H. Moissan pointed to the fact (Ref 1) that boron forms several compounds with magnesium, among them one with the formula Mg_3B_2 . This opinion is maintained also in the papers of other research workers (Refs 2-5). In earlier papers of the authors (Refs 6,7) simultaneously with American scientists (Refs 8,9), however, no such compound Mg_3B_2 was found. Table 1 shows the new experimental results.

Figure 1 shows the formation of tetraborane in dependence on the composition of the sinter. The yield in tetraborane increases with the magnesium content of the sinter. By means of infrared spectroscopy it was found that tetraborane is formed

Card 1/2

On the Problem of the Existence of a Magnesium
Boride of the Composition Mg_3B_2

SOV/78-4-8-3/43

as final product in the hydrolysis of MgB_2 . Table 3 shows the interplanar spacings for the various compounds of magnesium with boron. It may be seen from it that magnesium boride with the formula Mg_3B_2 does not exist. There are 1 figure, 3 tables, and 14 references, 7 of which are Soviet.

ASSOCIATION: Gosudarstvennyy institut prikladnoy khimii (State Institute of Applied Chemistry)

SUBMITTED: October 11, 1957

Card 2/2

MARKOVSKIY, L.Ya.; KAPUTOVSKAYA, G.V.

Chemical stability and hydrolytic decomposition of diborides of
some transition metals in their reactions with acids. Zhur.
prikl.khim. 33 no.3:569-577 Mr '60. (MIRA 13:6)
(Borides)

30153

S/080/62/035/004/002/022
D204/D301

11.2221
AUTHORS: Markovskiy, L. Ya. and Kaputovskaya, G. V.

TITLE: Certain chemical properties of Mg borides and their role in preparing elemental B by a magnesiothermal method

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 4, 1962, 723-729

TEXT: The interactions of Mg borides with aerial O_2 , N_2 and C were studied. Preparation and analysis of the borides and of amorphous B, which was also tested for oxidation resistance, are briefly mentioned. 1-g-samples of the powdered materials (99-100% $<10 \mu$) were pressed into quartz tubes open at one end (15 mm dia.) and were oxidized in a slow current of air between 400 - 600°C, for 0 - 15 hours. It was found that oxidation resistance decreased in the order $MgB_{12} > MgB_6 > MgB_4$, the higher borides being unaffected up to 550 - 575°C. Short-period oxidation (15 min.) at 500 - 600°C, followed by extraction with 1:1 HCl showed that Mg was attacked in

Card 1/3

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Certain chemical properties ...

preference to B, owing to a deficiency of surface B_2O_3 which prevented the formation of a protective oxide layer. Absence of the latter tended to reduce the long term (15 hrs) stability of MgB_{12} and MgB_6 towards oxidation, in comparison with MgB_2 and Mg_2B_3 which oxidized more rapidly at first. No Mg nitrides were formed. Resistance to O-free N_2 was studied over 2 - 3 hours between 600 - 1350°C and was found to be high, especially for the higher borides. No interaction with graphite was detected up to 1800°C. A discussion is next given of the magnesiothermal production of amorphous B, showing that 'Moissan's boron' consists of MgB_{12} containing 20% of B and B suboxides, probably as a solid solution. This is followed by consideration of the role of MgB_{12} in purifying B by vacuo-thermal and selective oxidation methods. The help of Yu. D. Kondrashev with the X-ray work is acknowledged. There are 6 figures, 4 tables and 15 references: 11 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: M. Jones,

Card 2/3

PAVLYUCHENKO, M.M.; KAPUTSKIY, F.N.

Kinetics of formation of cadmium ammonium iodide. Uch.zap. BGU
no.29:87-94 '56. (MIRA 11:11)
(Cadmium ammonium iodides) (Chemical reaction, Rate of)

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.; KAPUTSKIY, F.N.

Diagram of the oxidation of cellulose by nitrogen oxides.
Dokl. AN BSSR 2 no.11:461-464 D '58. (MIRA 12:8)

1. Predstavleno akademikom AN BSSR N.F. Yermolenko.
(CELLULOSE) (NITROGEN OXIDE) (OXIDATION)

KAPUTSKIY, F. N.

SOV/1984

PHASE I BOOK EXPLOITATION

International symposium on macromolecular chemistry. Moscow, 1960.

Mashinostroeniye simpozium po makromolekulyarnoy khimii SSSR, Moskva, 11-18 Iyunya 1960 g.; doklady i izvoshreniya. Sektsiya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 11-18, 1960; Papers and Summaries) Section III. [Moscow, Izd-vo AN SSSR, 1960] 469 p. 55,000 copies printed.

Tech. Ed.: F. S. Kuzhina.

Sponsoring Agency: The International Union of Pure and Applied Chemistry. Commission on Macromolecular Chemistry.

PURPOSE: This book is intended for chemists interested in polymerization reactions and the synthesis of high molecular compounds.

COVERAGE: This is Section III of a multivolume work containing papers on macromolecular chemistry. The articles in general deal with the kinetics of polymerization reactions, the synthesis of special-purpose polymers, e.g., ion exchange resins, semiconductor materials, etc., methods of catalyzing polymerization reactions, properties, and chemical interactions of high molecular materials, and the effects of various factors on polymerization and the degradation of high molecular compounds. No particularities are mentioned. References given follow the articles.

Reaction of U. N. Musayev, and R. S. Tilyayev (USSR). Radiation Method of Copolymerizing Acrylonitrile With Polybutene and Perchlorovinyl	170
Martkov, S. R., G. N. Shelokova, I. V. Zhuravleva, and F. M. Galkova (USSR). Grafting of Carbochain and Heterochain Polymers	184
Sarto, I., and K. Gal (Hungary). Grafting Methyl Methacrylate onto Films of Polyvinyl Alcohol Under the Action of X-Rays	207
Lazar, M., R. Rado, and Th. Pavlina (Czechoslovakia). Grafting Methyl Methacrylate onto Polypropylene and Polyethylene	214
Tutorakly, I. A., Z. I. Skalya, and V. M. Byatroy (USSR). The Interaction of Carboxyl-Containing Butadiene-Styrene Rubbers With Polyamides and E-Caprolactam	224
Koleznikov, G. S., and Ts'eng Han-ming (USSR). Synthesis of Free Radicals on Crosslinking in Polyethylene	230
Mladenov, I., V. A. Rukovskiy, and B. A. Doudkin (USSR). Of the Transformations of Carboxyl-Containing Butadiene-Styrene Rubbers and Their Mixtures With E-Caprolactam Under the Action of Gamma Radiation	293
Bogovin, Z. A., V. A. Deravitskaya, Sun T'ung, Chang Wei-wei, and L. S. Gal'tshver (USSR). Synthesis of New Cellulose Derivatives and Other Polysaccharides	302
Yermolenko, I. M., and F. N. Kaputskiy (USSR). Initiation of the Controlled Synthesis of Grafted Celluloses With Oxides of Nitrogen	310
Ivanov, V. I., M. Ya. Lemshina, Y. S. Ivanova (USSR). Oxidational Transformations in Chains of Cellulose Molecules	321
Berlin, A. A., Ye. A. Penskaya, and G. I. Volkova (USSR). Mechanicochemical Transformations and Block Copolymerization During the Freezing of Starch Solutions	334
Vannov, E. N., B. I. Aykhodzhayev, and M. Arizov (USSR). Modification of the Properties of Cellulose by Grafting	344

344 1/2

YERMOLENKO, I.N.; KAPUTSKIY, F.N.

Use of nitrogen oxides in the synthesis of modified cellulose.
Vysokom. soed. 2 no.4:626 Ap '60. (MIRA 13:11)
(Cellulose) (Nitrogen oxide)

YERMOLENKO, I.N.; KAPUTSKIY, F.N.; PAVLYUCHENKO, M.M.

Effect of the moisture content and the composition of the oxidant on the oxidation of cellulose by nitrogen oxides. Dokl.AN BSSR 4 no.10: 417-420 '60. (MIRA 13:9)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Nitrogen oxides) (Oxidation)

PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.; KAPUTSKIY, F.N.

Mechanism of the oxidation of cellulose by nitrogen dioxide. Zhur.
prikl. khim. 33 no.6:1385-1391 Je '60. (MIRA 13:8)
(Nitrogen oxide) (Cellulose)
(Oxidation)

KAPUTSKIY, F.N.; PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Effect of nitrogen trioxide, moisture, and phosphoric acid
on the reaction of cellulose with nitrogen peroxide. Vysokom.
soed. 4 no.4:503-509 Ap '62. (MIRA 15:5)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Cellulose) (Nitrogen oxides) (Phosphoric acid)

KAPUTSKIY, F.N.; PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Effect of the nature of solvent on the reaction of cellulose
with nitrogen dioxide. Vysokom.soed. 5 no.1:75-78 Ja '63.
(MIRA 16:1)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina i
Institut obshchey i neorganicheskoy khimii AN Belorusskoy SSR.
(Cellulose) (Nitrogen oxide) (Solvents)

ELYAVZONIK, F.Z.; PRISTOPA, Ch.V.; KAPUTSKIY, F.N.; YEREMENKO, I.M.
[Ermolenko, I.N.]

Experimental study of carbocymethylcellulose. Vestsi AN
BSSR. Ser. biial. nav. no.133-134 '64. (MIRA 17:6)

REZNIKOV, M.Ya. [Reznikau, M.IA.]; KAPUTSKIY, F.N. [Kaputski, F.M.];
YERMOLENKO, I.N. [Iarmolenka, I.M.]

Electric conductivity and the degree of swelling of oxidized
cellulose salts. Vestsi AN BSSR. Ser. fiz.-tekh. nav.
no.3, 39-45 '62. (MIRA 18:3)

L 40006-66 EWT(j)/EWT(m)/T RM/WW/JWD

ACC NR: AP6008277

SOURCE CODE: UR/0080/66/039/002/0458/0460

AUTHOR: Yermolenko, I. N.; Gusev, S. S.; Kaputskiy, F. N.; Vasilenko, Z. I.

53
51
B

ORG: none

TITLE: Infrared spectra of partially substituted nitroesters of polyanhydrouanic acid¹

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 2, 1966, 458-460

TOPIC TAGS: IR spectroscopy, cellulose, esterification, absorption spectrum

ABSTRACT: The use of spectral methods to determine the position of substitutes in cellulose derivatives was studied. For the experiments, purified cotton cellulose and monocarboxyl cellulose containing 4.7 and 7% COOH groups were used. The nitro groups were introduced at 20° with concentrated H₂SO₄ and HNO₃ in the ratio 3:1, and with H₂SO₄+HNO₃ diluted with H₂O in the ratio 38:32:30. Spectra were taken in the 400-3600 cm⁻¹ region. Infrared spectra of cellulose after esterification with diluted nitration mixture have weak bands at 900, 1630 (NO₂) and 1725 (CO)cm⁻¹; this indicates slight accumulation of nitro groups in cellulose. Accumulation of NO₂ groups in monocarboxylic cellulose containing 4.7 and 7% COOH groups is less than in nitrated cellulose, which indicates that in the reaction with HNO₃, cellulose is more active than monocarboxylic cellulose. Esterification of cellulose with concentrated nitration

Card 1/2

UDC: 543.422+661.728.

L 40006-66

ACC NR: AP6008277

mixture changes the character of the absorption spectrum: characteristic bands for the high substituted esters of cellulose appear in the 685, 782, 860 cm^{-1} regions. This change signals the transformation of cellulose into nitrocellulose. Orig. art. has: 2 figures. 2

SUB CODE: 07/ SUBM DATE: 22Apr64/ ORIG REF: 007

nd
Card 2/2

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

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

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

KAPUVARI, A.

The five-row grape cultivator is well-proven. p. 14.
UJITOK LAPJA, Budapest, Vol. 7, no. 15, Aug. 1955.

SO: Monthly List of East European Accessions, (ESAL), LC, Vol. 4, no. 10, Oct. 1955,
Uncl.

KAPUVARI, Jeno

Use of plastics in the construction industry. Epites szemle
6 no.6:189-192 '62.

1. Epitesgazdasagi es Szervezesi Intezet tudomanyos munkatarsa.

KAFUY, E.; CSAVISZKY, P.

B. Kockel's Representation Theory Treatment of Simple Mechanical Wave Problems; a book review. In German. p. 347. Vol. 6, No. 2 1956. ACTA PHYSICA. Budapest Hungary.

SOURCE: East European List, (EEAL) Library of Congress Vol. 6, No. 1
January, 1956

HUNGARY/Atomic and Molecular Physics - Physics of the Molecule. D

Abs Jour : Ref Zhur Fizika, No 4, 1960, 8276

Author : Kapuy, E.

Inst : Hungarian Academy of Sciences, Budapest, Hungary

Title : Application of One-Center Wave Functions to Tetrahedral Symmetric Hydrid Molecules. II. Numerical Computations for Methane

Orig Pub : Acta phys. Acad. scient. hung., 1959, 9, No 4, 445-459

Abstract : To calculate certain physical constants of the molecule CH_4 , a one-center function of two types is used. By the one-center method of molecular orbits, the wave function was constructed for the ground state of CH_4 from Slater 1s-, 2s-, and 2p-functions with varied parameters. Satisfactory results were obtained for the energy, coupling length, and frequency of completely symmetrical

Card 1/2

HUNGARY/Atomic and Molecular Physics - Physics of the Molecule. D
"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000720520009-6"

Abs Jour : Ref Zhur Fizika, No 4, 1960, 8276

oscillation and ionization potential. The method does not give a correct value of the binding energy. The one-center method of valence structure in the method of spherically-symmetrical density, gave results similar to the one-center molecular orbit method. -- Ye.A. Pshenichnov

Card 2/2

KAPUY, E.

"Application of one-center wave functions to tetrahedral symmetric hydride molecules. I. Theoretical basis of the method." In English. p. 317.

ACTA PHYSICA. (Magyar Tudományos Akadémia). Budapest, Hungary, Vol. 9,
No. 3, 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncla.

✓ Diamagnetic susceptibility of perturbed systems. E. Kapuy (Hung. Acad. Sci., Budapest). *Acta Phys. Acad. Sci. Hung.* 9, 475-7(1959)(in English).—The $1s\sigma$ state of HeH^{++} may be considered as the simplest model of a perturbed system. The diamagnetic susceptibility can be calculated by a variational method by using the exact eigenfunctions of Bates and Carson (*C.A.* 50, 12630c). The results are tabulated as a function of internuclear distance as a sum of a Langevin term and a high-frequency term. For zero distance, the value agrees with that for Li^{++} .

Paul Becher

2

HEX

1/4

2
Density matrixes for wave functions built up of two-electron orbitals. M. R. Kanyó (Hung. Acad. Sci., Budapest). *Acta Phys. Acad. Sci. Hung.* 11, 97-101 (1960) (in English); cf. *CA* 54, 10494c. — For wave function built up of antisymmetrical nonorthogonal 2-electron orbitals, the 2nd-order nonorthogonality is taken into account in the calcul. of the 1st- and 2nd-order d. matrixes. As an example, the energy expression for CH₂ is calcd. C. Olivier-Rutgers

*Research Group for Theoretical Physics of the Hungarian A.S.
Budapest*

KAPUY, E.

(Derivation of approximate two-electron orbitals. E. Kapuy (Hung. Acad. Sci., Budapest). *Acta Phys. Acad. Sci. Hung.* 11, 409-15(1960)(in English); cf. *CA* 54, 19146i.—A method of obtaining N 2-electron orbitals in a mol with N bonds from the $2N$ 1-electron orbitals is described, and energy calcs. are outlined. H. H. ~~1960~~

Research Group for Theoretical Physics
of the Hungarian Acad. Sci. Budapest

S/058/62/000/011/015/061
A062/A101AUTHOR: Kapuy, E.

TITLE: Derivation of "almost" orthogonal two-electron orbitals

PERIODICAL: Referativnyy zhurnal, Fizika, no. 11, 1962, 8, abstract 11V52
("Acta phys. Acad. scient. hung.", 1961, v. 13, no. 4, 461 - 468,
English)

TEXT: The previously investigated systems of related integro-differential equations that determine the best two-electron wave functions of a multi-electron problem (RZhFiz, 1962, 1V52), are somewhat modified so that the antisymmetric orthogonal two-electron orbits $\psi_I(1, 2)$, determined by these equations, may be decomposed in a full system of one-electron spin-orbits $v_{Ii}(1)$. There are found equations which determine the best two-electron functions $\psi_I(1, 2)$ corresponding to a limited (non full) system of one-electron orbits, and equations which determine the best functions $v_{Ii}(1)$ at a given limited number of basic one-electron functions. It has been assumed further that, even without broadening the given basis of one-electron functions, it is possible somewhat to improve

Card 1/2

Derivation of "almost" orthogonal...

S/058/62/000/011/015/061
A062/A101

the expression of the full wave function by two-electron functions, if partially abandoning the conditions of their orthogonality $\int \varphi_I^*(1,2) \varphi_J(1,3) d\tau_1 = 0 (I \neq J)$. Integro-differential equations are obtained which determine the indicated "almost orthogonal" functions $\varphi_I(1, 2)$. With an accuracy to the first order on the non-orthogonality, an expression is found for the full energy of the system.

S. Vetchinkin

[Abstracter's note: Complete translation]

Card 2/2

KAPUY, E.

Configuration interaction for wave functions constructed from orthogonal many-electron group orbitals. Acta phys Hung 13 no.3:345-352 '61.

1. Research Group for Theoretical Physics, Hungarian Academy of Sciences, Budapest.

KAPUY, E.

Derivation of "almost" orthogonal two-electron orbitals.
Acta phys Hung 13 no.4:461-468 '61.

1. Research Group for Theoretical Physics, Hungarian Academy
of Sciences, Budapest.

44855

24 4480

S/081/62/148/024/002/073
B108/B186

AUTHOR: Kapuy, E.

TITLE: Configuration interaction for wave functions constructed from
orthogonal many-electron group orbitalsPERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1962, 12, abstract
24B48 (Acta phys. Acad. scient. hung., v. 13, no. 3, 1961,
345 - 352 [Ger.])

TEXT: Previously obtained results concerning the construction of ortho-
gonal two-electron orbitals are extended to wave functions resulting from the
displacement of the one-, two-, three-, and many-electron orbitals (group
orbitals). The concept of "excited states of electron groups" is defined.
A theorem is given which in a more general form was demonstrated by Leydin
(RZhKhim, 1962, 6B19). This theorem permits the author to formulate the
fundamental principles for constructing approximate group orbitals, taking
configuration interaction into consideration. Non-vanishing matrix ele-
ments of the atomic Hamiltonian are demonstrated. [Abstracter's note:
Complete translation.]

Card 1/1

KAPUY, E.

"Group theory in quantum mechanics" by V. Heine. Reviewed by E. Kapuy.
Acta phys Hung 15 no.3:285-286 '63.

KAPUY, E.

On the correlation problem in the theory of atoms and molecules.
Acta phys Hung 15 no.4:341-350 '63.

1. Research Group for Theoretical Physics of the Hungarian Academy
of Sciences, Budapest.- Presented by Albert Konya.

JAVOR, Tibor; NAGY, Gyorgy; KAPUSZ, Nandor

Surgical procedure for the preparation in dogs, of an internal pancreatic fistula which can be cannulated. Kiserl. orvostud. 14 no.4:337-339 S '62.

1. Debreceni Orvostudományi Egyetem II. Belgyógyászati Klinikája és Igasszagügyi Orvostani Intézete.
(PANCREATIC FISTULA)

MANVELYAN, M.G.; SAYADYAN, A.G.; ABRAMYAN, A.A.; MIKAYELYAN, Dzh.A.;
KAPYANTSYAN, E.Ye.

Decomposition of alkali-calcium precipitates obtained in the
process of treating nephelite rocks by hydrochemical methods.
TSvetmet. 34 no.2:56-60 F '61. (MIRA 14:6)
(Hydrometallurgy) (Nephelite)

KAPYRIN, G. I.

"A Study on Re-Distribution of Elements in Metal Alloys and Weld Joints by
Radiography and Radiometry", by B. Y. Bruk, A. S. Zavyalov, G. I. Kapyrin.
Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept 1958

KAPYRN G. I.

FRASE I BOOK REFLECTIONS 807/212

M. Mal'kova; obratki stazbi, No. 3 (Physical Metallurgy; Collection of Articles, No. 3), Leningrad, Subpromgiz, 1959. 390 p. 5,200 copies printed.

Dr. G. I. Kapryn, Candidate of Technical Sciences; Literary and Tech. Ed.: N. I. Kuznetsov.

PURPOSE: This collection of articles is intended for scientific personnel at research and educational institutions and industrial plants and also for advanced students.

COVERAGE: The articles report the results of investigations of 1) the effect of various factors on the susceptibility of constructional and heat-resistant steels and titanium alloys to brittle failure at various temperatures under various conditions of loading (long-time, short-time, cyclic, noncyclic); 2) alloys, steels, and constructional materials; 3) the effect of various factors on the strength and resistance to fracture of steels and heat-resistant steels. The articles are accompanied by numerous Soviet and non-Soviet references. No specialities are mentioned.

Kashyov, P. O., and V. A. Znatkova, Engineer. Mechanical Strength of Steel. 214

Kalandin, Yu. P., Candidate of Technical Sciences. Thermal Fatigue of Metals. 230

Cherbulin, B. B.; V. I. Ryabchikov, Engineer; and Ye. S. Ryzhberg, Candidate of Technical Sciences. Investigation of the High Strength of Titanium. 265

Zambichikov, A. I., Candidate of Technical Sciences. Effect of Vanadium, Molybdenum, and Niobium on the Properties of Alpha Alloys of Titanium. 279

Krasin, Yu. D. Heat Treatment of Two-Phase Alloys of Titanium. 298

Koros, L. S., and Krasin, Yu. D. Anomalous Grain Growth of Metals in Vacuum. 312

Reut, B. I., Candidate of Technical Sciences; A. S. Zaryalov, and Ye. S. Ryzhberg, Candidate of Technical Sciences. Investigation of the Diffusion of Elements in Metallic Alloys and Titanium. 326

Reut, B. I. Solubility of Carbon in Alpha-Iron. 349

Sol'manen, I. S., Candidate of Technical Sciences; and K. I. Kulyapina, Engineer. Structure and Properties of Forgings as Influenced by Forging Conditions. 358

Shul'kin, S. M., Candidate of Technical Sciences; A. I. Zambichikov. Properties of Single-Phase Weldable Titanium Alloys. 367

Strolov, B. V., Candidate of Technical Sciences. Modeling in Corrosion Tests Made in Neutral Sea Water. 381

AVAILABLE: Library of Congress

Card 6/6

(21)
WV/NH/ral
7-20-60

KAPYRIN O.I., ~~tekhn.nauk~~.tekhn.nauk, otv.red.; POPOV, A.V., red.; KOTLYAKOVA,
O.I., tekhn.red.

[Metallurgy; collection of articles] Metallurgia; sbornik
statei. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl.
Vol.1. 1958. 177 p. (MIRA 12:9)
(Steel) (Titanium)

KAPYRIN, G.I., kand.tekhn.nauk, otv.red.; KRUGOVA, Ye.A., red.; VOLCHOK,
I.M., tekhn.red.

[Metallography; a collection of articles] Metallovedenie;
sbornik statei. Gos.sciuznoe izd-vo sudostroit.promyshl. (MIRA 12:5)
Vol.2. 1958. 265 p.
(Metallography)

BRUK, B.I., kand.tekhn.nauk; ZAV'YALOV, A.S., doktor tekhn.nauk, prof.;
KAPYRIN, G.I., kand.tekhn.nauk

Studying the redistribution of elements in metal alloys and welded
joints by the method of autoradiography and radiometry. Metal-
lovedenie 3:314-325 '59. (MIRA 14:3)
(Metallography) (Autoradiography)
(Radioisotopes—Industrial application)

KRASIL'SHIKOV, Zal'man Neftal'yevich; SHMIDT, Nikolay Vladimirovich;
SHVACH, Yevgeniy Nikolayevich; PAVLENKO, Nikolay Timofeyevich;
NECHEPURENKO, Stepan Yefimovich; KAPTRIN, G.I., nauchnyy red.;
NIKITINA, R.D., red.; ERASOVA, N.V., tekhn.red.

[Thermal strengthening of nonhardenable carbon steel] Termicheskoe
uprochnenie nezakalivaushchetsia uglerodistoi stali. Leningrad,
Gos.soiuznoe izd-vo sudostroit.promyshl., 1960. 146 p.
(MIRA 13:10)

(Steel--Heat treatment)

MATVLYOV, A.I. (Lyubertsy); KAPYRIN, O.D. (Lyubertsy)

Construction of precast reinforced concrete tanks with a capacity
of 30 000 m³. Stroi. truboprov. 10 no.2:22-26 F '65. (MIRA 18:5)

21(4)

PHASE I BOOK EXPLOTTATION

SOV/2534

Kapyrin, Pafnutiy Ivanovich, and Oleg Sergeyevich Sergeyev

V Dubne pod Moskvoy (At Dubna near Moscow) [Moscow] Moskovskiy rabochiy,
1958. 97 p. 25,000 copies printed.

Ed. S. Gurov; Tech. Ed.: I. Yegorova.

PURPOSE: This booklet is intended for the general reader

COVERAGE: This is a simplified booklet on nuclear and high-energy physics, the technology of acceleration, and the peaceful uses of atomic energy. It describes the research of scientists from twelve Socialist countries carried on at the Ob'yedinennyy institut yadernykh issledovaniy (United Institute of Nuclear Physics Research) in Dubna, as well as the Soviet proton-synchrocyclotron.

TABLE OF CONTENTS:

In the City of Physicists 3
From Ingenious Conjectures to Great Discoveries 9

Card 1/2

At Dubna near Moscow (Cont.)
APPROVED FOR RELEASE: 06/13/2000

SOV/2534

CIA-RDP86-00513R000720520009-6"

"Mysterious" Particles	17
Engineering of Enormous Possibilities	26
One world calling another	26
From the first accelerator to the synchrocyclotron	30
Biggest accelerator in the world	40
Remote control	51
"Bombarding" the Nucleus	55
On the track of new accelerator designs	60
Powerful source of energy	66
Mainstay in the development of new power engineering	67
Dreams Come True	71
Unusual conversions	71
In the service of Socialist industry	74
Comprehending the secrets of living nature	79
Reliable aid to the physician	82
To the depths of the ages across cosmic distances...	85
General Problem of Science in the Contemporary World	89

AVAILABLE: Library of Congress

Card 2/2

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Design formulas for estimating the thermal effect on well
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in petroleum production involving the use of thermal drive. Trudy
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42-49 Ag '62. (MIRA 17:2)

KAPYRIN, Yu.V.; TREBIN, G.F.

Estimating errors in the investigation of deep-well oil
samples. Nauch.-tekh. sbor. po dob. nefi no.21:62-67 '63.
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1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

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BABANIN, Ya.N.; BAIKOV, V.N.; GREGIN, G.F.; KAPYRIN, N.Y.

Automatic control of pressure maintenance in the transfer of subsurface samples. Nauch.-tekh. sbor. po dok. nefti no.45: 112-113 '64. (MIRA 17:12)

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Determining the intervals of the inflow of petroleum to a well
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KARYGIN, Yu.V.; TRERIN, G.F.

Crystallization of paraffins from formation petroleums. Nauch. tekhn. sbor. po dob. nefte no.27:79-8. '65. (MIRA 18:9)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

ABEZGAUZ, I.M.; KAPYRIN, Yu.V.; TREBIN, G.F.

New method for determining the optical density of petroleum.
Nefteprom, delo no.10:13-14 '65.

(MIRA 19:1)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

KAPYSH, Ye.M.

System for opening carbide barrels. Elek. i tepl. tiaga 7
no.4:22-23 Ap '63. (MIRA 16:5)

1. Nachal'nik tekhnicheskogo otdela depo Ussuriysk.
(Carbides)

KAPYSHEV, A.G.; VENEVTSEV, Yu.N.; SOLOV'YEV, S.P.; GCRBUNOV, L.A.;
ZHDANOV, G.S.

X-ray chambers for high-temperature studies. Zav. lab. 30 no.10:
1274-1276 '64. (MIRA 18*4)

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni
Karpova.

KAPYSHEV, A. G.

70-2-5/24

AUTHOR:

Venevtsev, Yu.N., Kapyshev, A.G. and Shumov, Yu.V.

TITLE:

An X-ray structural investigation of the system
PbTiO₃ - BaSnO₃. (Rentgenograficheskoye issledovaniye systemy
PbTiO₃ - BaSnO₃.)

PERIODICAL:

"Kristallografiya" (Crystallography), 1957, Vol.2,
No.2, pp.233-238 (U.S.S.R.)

ABSTRACT:

X-ray powder photographs of the system PbTiO₃ - BaSnO₃ at various temperatures showed a continuous range of solid solutions. The phase diagram of (pb,Ba)(Ti,Sn)O₃ was constructed showing only two phases, one cubic (paraelectric), the other tetragonal (ferro-electric). The diagram agrees with that traced from di-electric measurements by I.E. Myl'nikova. The Curie temperature in this system falls more sharply with increasing Sn concentration than in the Pb(Ti,Sn)O₃ system.

Both SnTiO₃ and BaSnO₃ have the perovskite structure but the former compound is ferro-electric. Examination of their solid solutions was expected to elucidate some of the factors leading to ferro-electricity in the perovskite structures. Specimens were prepared in the Institute for Silicate Chemistry (IKhS AN SSSR) from BaCO₃, TiO₂, SnO₂ and PbO by heating at

Card
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An X-ray structural investigation of the system PbTiO_3 - BaSnO_3 . (Cont.) 70-2-5/24

1 250 C for one hour. X-ray powder photographs were taken with Cu or Cr radiation measuring particularly the high angle lines. The accuracy in the cell sides was about ± 0.003 A.

A change from the tetragonal form (PbTiO_3) to the cubic (BaSnO_3) took place at 43 mol % of the latter with no discontinuity in the cell volume. The ratio c/a does not decrease continuously to 1 but drops sharply from 1.003. High temperature photographs from 30 mol % BaSnO_3 showed a Curie temperature of 190 ± 10 C compared with 490 C for pure PbTiO_3 . Specimens with 43 mol % BaSnO_3 have a Curie temperature about 15 C. A specimen with a Curie temperature of -183 C will have a composition of between 40 and 60% BaSnO_3 . A rhombohedral phase of $\text{Pb}(\text{Ti},\text{Sn})\text{O}_3$ is found. The correctness of the factors proposed earlier by Venevtsev (Dissertation, MIFI, Moscow, 1955, and Izv. Ak. Nauk, Ser Fiz., 21, 2, 1957) as influencing the Curie temperatures of compounds with t less than 1 is confirmed.

Card 2/3 Discussions with Prof. G.S. Zhdanov and the assistance of Dr. G.A. Smolenskiy and Cand. I.E. Myl'nikova are acknowledged. There are 4 figures and 19 references, 9 of which are Slavic.

●An X-ray structural investigation of the system ^{70-2-5/24}
BaSnO₃. (Cont.) PbTiO₃ -

ASSOCIATION: Physico-Chemical Institute im. L.Ya. Karpova. (Fiziko-
Card 3/3 Khimicheskiy Institut i. L.Ta. Karpova)

SUBMITTED: November 16, 1956.

AVAILABLE: Library of Congress

KARYSHEV, A.G.

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54662(A)

5/070/60/005/004/009/012
Z. A. Karlov, S. I. Solov'ev, S. P. Bana, Ye. V. Ivanova, A. G. Karyshev, A. G. Karyshev, A. G.

TITLE: Crystal Chemical Investigations of Substances with the Ferroelectric Type of Structure Which Has Special Dielectric Properties

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 4, pp 620 - 628

TEXT: In BaTiO₃ the dielectrically-active ion is the Ti but in PbTiO₃ it is the Pb ion. The (Pb/Ba)TiO₃ system may, therefore, be expected to show peculiarities where these two effects interact. The variation in structure, dielectric and piezoelectric properties is usually continuous from one end-member to the other. Experimentally, solid solutions with 7, 9, 11, 13 and 24 wt. % PbTiO₃ showed anomalies not explicable as due to loss of PbO. BaTiO₃ undergoes several phase transitions in a short temperature interval. Dielectric and optical observations at 360, 470, 520 and 640 °C. X-ray data contrast give all but the first of these. Polycrystalline material was used.

studied by X-ray methods up to 700 °C and transitions at 360, 430, 470, 520 and 640 °C were found. Below 360 °C BaTiO₃ is monoclinic with $a < c$, b and $\beta > 90^\circ$ (true symmetry orthorhombic). The transition from orthorhombic to tetragonal is complete at 360 °C. The X-ray method is no less sensitive than the optical and dielectric methods. From an examination of solid solutions BaTiO₃-(Ca,Sr)(Zr,Sn)O₃ it is concluded that, other things being equal, the Curie temperature of perovskite-type ferroelectrics is higher, the smaller the radius of the active cation. The Curie temperature of BaTiO₃ with added Bi₂O₃, Cr₂O₃ and Bi₂O₃-Al₂O₃ has been determined. The Curie temperature of BaTiO₃ with added Bi₂O₃ and Bi₂O₃-Al₂O₃ has been determined and specimens thereof properties like those found in BaTiO₃ containing Bi₂O₃.

Card 2/4
BiFeO₃ and specimens in the system PbTiO₃-BiFeO₃ have been synthesized. The former has a rhombohedral distortion ($a = 3.965 \text{ \AA}$, $c = 8.924 \text{ \AA}$) and a maximum of about 1200. In BiFeO₃ the susceptibility has a maximum of about 1200. In the solid solution up to 70% by wt. of BiFeO₃ there is also a tetragonal modification. The Curie point of BiFeO₃ appears to be higher than that of PbTiO₃. General methods for calculating the internal field have been developed for structures of any dipole configurations. These have been applied to the orthorhombic structure of CaTiO₃. Here, the internal electric field is zero at the Ti sites. There are 29 references: 2 Japanese (in English), 8 English, 2 International, 1 Swiss, 1 German and 15 Soviet.

ASSOCIATION: Fiziko-khimiticheskii Institut
Im. L. Ya. Karпова
(Khimicheskii Institut - imeni
L. Ya. Karпова)
SUBMITTED: February 25, 1960

35597

S/048/62/026/003/006/015
B107/B102

24.7100 (1153,1160)

AUTHORS: Ivanova, V. V., Kapyshev, A. G., Venevtsev, Yu. N., and Zhdanov, G. S.

TITLE: X-ray determination of symmetry of the elementary cells of the ferroelectrics $(K_{0.5}Bi_{0.5})TiO_3$ and $(Na_{0.5}Bi_{0.5})TiO_3$ and of the high-temperature phase transitions in $(K_{0.5}Bi_{0.5})TiO_3$

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 3, 1962, 354-356

TEXT: The ferroelectrics with perovskite structure, $(K_{0.5}Bi_{0.5})TiO_3$ and $(Na_{0.5}Bi_{0.5})TiO_3$ with the Curie point at 380 and 320°C, respectively, had been described in earlier papers (Ref. 1: G. A. Smolenskiy, A. I. Agranovskaya, Fiz. tverdogo tela, 1, no. 10, 1562 (1959); Ref. 2: G. A. Smolenskiy, V. A. Isupov, A. I. Agranovskaya, N. N. Kraynik, Fiz. tverdogo tela, 2, no. 11, 2982 (1960)). The radiographic examination with an PKJ-114 (RKU-114) camera shows that the samples are single-phased at room
Card 1/3

S/048/62/026/003/006/015
B107/B102

X-ray determination of symmetry ...

temperature, and that K and Bi, and/or Na and Bi are statistically distributed in the sites of the elementary cell with the coordination number 12. Splitting of some lines was observed, but could not be measured accurately. CrK radiation and an РКД-143 (RKD-143) camera (produced at the FKhI imeni L. Ya. Karpov) were therefore used. The following lattice constants were determined from the splitting of the line with

$\sum h_i^2 = 8$: $(K_{0.5}Bi_{0.5})TiO_3$ is tetragonal with $a = 3.913 \pm 0.003 \text{ \AA}$, $c = 3.993 \pm 0.003 \text{ \AA}$, $V = 61.1 \pm 0.15 \text{ \AA}^3$; $(Na_{0.5}Bi_{0.5})TiO_3$ is rhombohedral with $a = 3.891 \pm 0.002 \text{ \AA}$, $\alpha = 89^\circ 36' \pm 3'$, $V = 58.7 \pm 0.1 \text{ \AA}^3$. Furthermore, the change in the lattice constants with temperature up to 500°C was determined for $(K_{0.5}Bi_{0.5})TiO_3$. At 270°C the tetragonal passes over into a

pseudocubic phase. The slightly diffuse lines make more accurate determination impossible. On the basis of previous conclusions (Ref. 4: Yu. N. Venetsev, G. S. Zhdanov, Izv. AN SSSR. Ser. fiz., 21, 2275 (1957)) the distortion can be assumed to be tetragonal. The cubic phase occurring from 410°C onward makes the radiographs clearer. The authors thank V. A. Isupov who supplied the samples. There is 1 figure.

Card 2/3

X-ray determination of symmetry ...

S/O48/62/026/003/006/015
B107/B102

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

ix

Card 3/3

KAPYSHEV, A.G.; VENEVTSEV, Yu.N.

X-ray diffraction study of variations in the period of elementary cells of $(\text{Ba}, \text{Pb})\text{TiO}_3$ solid solutions in the paraelectric region as dependent on the composition. Kristallografiia 8 no.2:269-270 (MIRA 17:8) Mr-Ap '63.

1. Fiziko-khimicheskiy institut imeni Karpova.

VENEVTSSEV, Yu. N.; ZHDANOV, G. S.; ROGINSKAYA, Yu. Ye.; FEDULOV, S. A.;
IVANOVA, V. V.; CHKALOVA, V. V.; VISKOV, A. S.; KAPYSHEV, A. G.;
BONDARENKO, V. S.; LADYZHINSKIY, P. B.

Some solid solutions on the basis of the ferroelectric-
antiferromagnetic BiFeO_3 . Izv. AN SSSR. Ser. fiz. 28 no. 4:
683-690 Ap '64. (MIRA 17:5)

VEDEVTSSEY, Yu.N.; ROGINSKAYA, Yu.Ye.; VISKOV, A.S.; IVANOVA, V.V.;
TOMASHPOL'SKIY, Yu.Ya.; SHVORNEVA, L.I.; KAPYSHEV, A.G.;
TEVEROVSKIY, A. Yu.; ZHDANOV, G.S.

New lead-containing porovskite compounds of complex composition. Dokl. AN SSSR 158 no.1:86-88 S-0 '64 (MIRA 17:8)

1. Fiziko-khimicheskiy institut imeni L. Ya. Karpova. Predstavleno akademikom N.V. Belovym.

TULUPOV, V.A.; KIVILIS, D.A.; KAPYSHEV, A.G.

Physicochemical study of homogeneous hydrogenation catalysts.

Part 2. Zhur. fiz. khim. 38 no.10:2415-2419 0 '64.

(MIRA 18:2)

1. Vsesoyuznyy zaachnyy mashinostroitel'nyy institut.

TULUPOV, V.A.; KAPYSHEV, A.G.; TULUPOVA, A.I.

Physicochemical studies of catalysts for homogeneous catalytic
hydrogenation. Part 3. Zhur.fiz.khim. 38 no.11:2737-2739 N '64.
(MIRA 18:2)

1. Vsesoyuznyy zaochnyy mashinostroitel'nyy institut.

KAPYSHEV, K.

Where are hidden potentialities? Grazhd. av. 17 no. 11:17
N '60. (MIRA 13:12)

(Airplanes--Maintenance and repair)

17c

KAPYSHEV, K.

Shift maintenance of special-purpose airplanes. Grazhd.av.
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(Airplanes--Maintenance and repair)

(MIRA 16:1)

VOZBUTSKAYA, Amaliya Yefremovna; ANTIPOV-KARATAYEV, I.N., akad., prof.,
red.; ASKINAZI, D.L., prof., red.; TADZHISKAYA, A.N.,
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[Soil chemistry] Khimiia pochvy. Izd.2., perer. i dop.
Moskva, Vysshaya shkola, 1964. 397 p. (MIRA 17:11)

Книжка, 12
VARUNTSYAN, I.S., akademik, red.; KAPYSHEVA, V.S., red.; PEVZNER, V.I.,
tekhn.red.

[New preparations for cotton plant defoliation before harvesting]
Novye preparaty dlia preduborochnogo obeslistvleniia khlopchatnika.
Pod red. I.S.Varuntsiana. Moskva, Gos. izd-vo sel'khoz. lit-ry,
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1. Vsesoyuznaya Akademiya sel'skokhozyaystvennykh nauk imeni V.I.
Lenina. Sektsiya tekhnicheskikh kul'tur. 2. Daystvitel'nyy
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V.I.Lenina (for Varuntsyan)
(Cotton growing) (Defoliation)

KOSMACHEVSKIY, Andrey Semenovich, prof.; TSVETKOVA, V.A., red.; KAPYSHEVA,
Y.S.; DEYEVA, V.M., tekhn.red.

[Injurious soil insects and measures for their control] Vrednye
pochvennye nasekomye i mery bor'by s nimi. Moskva, Gos.izd-vo
sel'khoz.lit-ry, 1959. 82 p. (MIRA 13:1)
(Insects, Injurious and beneficial)

GERASIMOVA, Aleksandra Ivanovna, kand.sel'skokhoz.nauk; MINYAYEVA, Ol'ga
Mikhaylovna, kand.biolog.nauk; KAPYSHEVA, V.S., red.; BALLOD, A.I.,
tekhn.red.

[Diseases and pests of forage grasses] Vrediteli i bolezni kormovykh
trav. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 359 p.

(Forage plants--Diseases and pests]

(MIRA 14:6)

VORONTSOV, A.I.; KAPYSHEVA, V.S., red.; MURASHOVA, V.A., tekhn. red.

[Hidden enemies of our house; insects that destroy wood] Skry-
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(Trees--Diseases and pests) (Wood)

DOBROVOL'SKIY, Boris Vladimirovich; KAPYSHEVA, V.S., red.; YEZHOVA, L.L.,
tekm. red.

[Phenology of the insect pests of agriculture] Fenologiya naseko-
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MARDASHEV, Sergey Rufovich; POKROVSKIY, Aleksey Alekseyevich; PAVLOVA,
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[Laboratory demonstrations for lectures on biological chemistry;
manual for teachers] Demonstratsii k lektsiiam po biologicheskoi
khimii; posobie dlia prepodavatelei. Moskva, Gos.izd-vo "Vysshiaia
shkola," 1961. 142 p. (MIRA 14:12)
(Biochemistry—Study and teaching)

PEREL'MAN, Aleksandr Il'ich; KAFYSHEVA, V.S., red.; GOROKHOVA, S.S.,
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[Course in the photoculture of plants] Kurs svetokul'tury
rastenii. Moskva, Gos. izd-vo "Vysshaya shkola," 1961. 205 p.
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1. Laboratoriya iskusstvennogo klimata Sel'skokhozyaystvennoy
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(Plants, Effect of light on)

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Ivanovna, assistant; SEMIKHATOVA, Ol'ga Anatol'yevna,
assistant; KAFYSHEVA, V.S., red.; PAVLOVA, V.A., tekhn.
red.

[Practical training work in microbiology] Praktikum po mikro-
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(MICROBIOLOGY—STUDY AND TEACHING)

VOYNAR, Aleksey Iosifovich; KAFYSHEVA, V.S., red.; YEZHNOVA, L.L.,
tekhn. red.

[Trace elements in living nature] Mikroelementy v zhivoi pri-
rode. Moskva, Vysshaya shkola, 1962. 91 p. (MIRA 15:11)
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MIKHINA, Tat'yana Nikolayevna; FROLOVA, Yelena Nikolayevna; SHCHERBINA, Tat'yana Vladimirovna; KAPYSHEVA, V.S., red.; MURASHOVA, V.A., tekhn. red.

[Laboratory manual on the zoology of invertebrates] Praktikum po zoologii bezpozvonochnykh. Pod red. E.N.Frolovoi. Moskva, Vysshaya shkola, 1962. 207 p. (MIRA 15:11)
(Invertebrates)

IOFF, Nikolay Abramovich[deceased]; BELOUSOV, L.V., red.; KAPYSHEVA,
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Moskva, Vysshaya shkola, 1963. 171 p. (MIRA 16:8)
(Histology--Laboratory manuals)

VORONTSOV, Aleksey Ivanovich; KAFYSHEVA, V.S., red.

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3473. Development [in Hungary] of prefabricated medium-voltage metal-clad (sheet-steel-enclosed) switchgear. F. ROMKAY, A. KARA AND L. HULLAI. *Elektrotechnika*, 41, 98-113 (April, 1954) In Hungarian.

The history of metal-clad switchgear is reviewed and present-day designs are described. A standard scheme has been worked out with 7 basic cell units. These units permit the construction of single-busbar switchgear to cover all practical requirements. Designs are given incorporating bulk oil, small oil volume and expansion (water) circuit breakers. It is concluded that with the possible exception of large stations, metal-clad gear can be used to advantage. In the case of power stations, transformer stations connected to the national network or large industrial installations, the superiority of metal-clad gear over open-cell construction might, however, be open to argument. Problems of manufacture are discussed in detail.

L. CSUROS

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