SEMENOV, Georgiy Vasil'yevich; KASHTANOV, F., red.; KALECHITS, G., tekhred.

[Apply progressive practice in production] Peredovoi opyt - v proizvodstvo. Minsk. Gos.izd-vo BSSR, Red.proizvodstvennoi lit-ry, 1960. 57 p. (MIRA 14:3)

1. Direktor Orshanskogo l'nokombinata (for Semenov).
(Orsha--Textile industry)

GAL'PERIN, Grigoriy L'vovich; KAGANOV, Il'ya Lipovich; KASHTANOV, F., red.; KALECHITS, G., tekhn.red.

[Make greater use of the potentialities of automotive transportation; from the practices of automotive unit No.12 of the Minsk City Motor Vehicle Trust] Shire ispol'zovat' rezervy avtotransporta; iz opyta raboty avtobazy No.12 Minskogo gorodskogo avtotresta. Minsk, Gos.izd-vo BSSR, Red. proizvodstvennoi lit-ry, 1960. 58 p. (MIRA 14:3)

(Minsk--Transportation, Automotive)

DEMIDOV, Ivan Nikolayevich; BABUK, Valentin Vladimirovich; KASHTANOV, F., red.; KALECHITS, G., tekhn. red.

[Our practice in using dynamic vibration dampers on milling machines] Nash opyt primeneniia dinamicheskikh vibrogasitelei na frezernykh stankakh. Minsk, Gos. izd-vo BSSR. Red. proizvodstvennoi lit-ry, 1960. 19 p. (MIRA 14:10)
(Milling machines—Vibration) (Damping (Mechanics))

NOVASH, Vladimir Ivanovich; KASHTANOV, F., red.; YERMOLENKO, V., tekhn. red.

[Control, signaling, and protection of elctrical systems] Upravlenie, signalizatsiia i zashchita elektricheskikh ustanovok. Minsk, Gos.izd-vo BSSR. Red. proizvodstvennoi litry, 1961. 198 p. (MIRA 15:8)
(Electric power distribution—Equipment and supplies)
(Electric protection) (Electric relays)

TRILING, Sholom Mikhaylovich; KASHTANOV, F., red.; NOVIKOVA, V., tekhn. red.

[Our practice in production mechanization] Nash opyt mekhanizatsii proizvodstva. Minsk, Gos.izd-vo BSSR, 1962. 16 p. (MIRA 16:4)

1. Brigadir kompleksnoy brigady Grodnenskogo zavoda bytovykh priborov (for Triling).

(Grodno--Household appliances--Technological innovations)

MISUNOV, Semen Matveyevich, bul'dozerist, Geroy Sotsialisticheskogo Truda; KASHTANOV, F., red.; VARENIKOVA, V., tekhn. red.

[Mechanisms should be fully loaded] Mekhanizmam - polnuiu nagruzku. Minsk, Gos.izd-vo BSSR, Red. proizvodstvennoi litry, 1962. 26 p. (MIRA 15:11)
(Earthwork)

KOROBKO, Aleksandr Il'ich; ZHDANOVICH, Aleksandr Stepanovich; KASHTANOV, F., red.; KALECHITS, G., tekhn. red.

[Reduce production costs; from the work practice of machinery manufacturing and machine-tool enterprises of the White Russian Economic Council] Snizhat' sebestoimost' produktsii; iz opyta raboty predpriiatii mashinostroeniia i metalloobrabotki SNKh BSSR. Minsk, Gos. izd-vo BSSR. Red. proizvodstvennoi lit-ry, 1962. 31 p. (MIRA 15:5)
(White Russia--Machinery industry--Costs)
(White Russia--Machine-tool industry--Costs)

SUCHKOV, Andrey Yevdokimovich; BARANOVSKIY, M.A., kand. tekhn. nauk, red.; KASHTANOV, F., ved. red.; BOLDYREVA, N., tekhn. red.

[Conserve and economize on the use of metal] Berech' i ekonomit' metall. Minsk, Gosizdat BSSR, 1963. 47 p. (MIRA 16:12)

1. Glavnyy spetsialist Gosplana BSSR (for Suchkov).
(Metalwork) (Metals, Substitutes for)

DMITROVICH, Anatoliy Mikhaylovich; KASHTANOV, F., red.; KARPINOVICH, Ya., tekhn. red.

[Hole machining and threaded joints] Obrabotka otverstii i rez'bovye soedineniia. Minsk, Gosizdat BSSR, 1963. 149 p. (Bibliotechka slesaria, no.5) (MIRA 17:1)

MEKHEDKO, Fedor Vasil'yevich; KUZNETSOV, Boris Vladimirovich;
KASHTANOV, F., red.

[Asynchronous motors] Asinkhronnye dvigateli. Minsk, Izd-vo "Belarus'," 1963. 157 p. (Bibliotechka elektromontera, n.10)
(MIRA 17:5)

KUZNETSOV, Boris Vladimirovich; MEKHEDKO, Fedor Vasil'yevich; KASHTANOV, F., red.

[Welding transformers and generators; their installation and operation] Svarochnye transformatory i generatory: ustroistvo i ekspluatatsiia. Minsk, Belarus', 1964. 138 p. (MIRA 17:12)

KOROLEV, Vitaliy Arkad'yevich; DMITROVICH, A.M., kand. tekhn. nauk, red.; KASHTANOV, F., red.

[Mechanization of benchwork] Mekhanizatsiia slesarnykh rabot. Minsk, Izd-vo "Belarus'," 1964. 176 p. (Bibliotechka slesaria, no.6) (MIRA 18:1)

POLZIK, Palladiy Vasil'yevich; NIKONOV, Aleksandr Romanovich; KASHTANOV, F., red.

[Preventive maintenance of the power equipment of industrial enterprises] Planovo-predupreditel'nyi remont energeticheskogo oborudovaniia promyshlennykh predpriiatii. Minsk, Belarus', 1964. 125 p. (MIRA 18:4)

KASHTANOV, I.N., glav. red.; BEREZIN, V.P., red.; IOSIFOVICH, N.L., red.; POTEMKIN, S.V., red.; SHILO, N.A., doktor geol.-miner. nauk, prof., red.; FROLOVA, M.F., red.

[10 years of Magadan Province] 10 let Magadanskoi oblasti. Magadan, Magadanskoe knizhnoe izd-vo, 1963. 210 p. (MIRA 17:8)

1. Direktor kompleksnogo nauchno-issledovatel'skogo instituta Sibirskogo otdeleniya AN SSSR (for Shilo). 2. Direktor nauchno-issledovatel'skogo instituta zolota i redkikh metallov (for Potemkin). 3. Sekretar' oblastnogo komiteta KPSS (for Kashtanov).

KASHTANOV, L. N., inzh.

Some results of studying safety turboclutches. Mekh. i avtom. v gornci prom. no.2:243-262 '62. (MIRA 16:1)

(Coal mines and mining—Equipment and supplies)
(Clutches(Machinery))

TEKHMISHCHYAN, A. V., kand. tekhn. nauk; KASHTANOV, L. N., inzh.

Results of tests in mines of the drive of a plow made by the "Westphalia-Lunen" Company. Mekh. i avtom. v gornoi prom. no.2: 262-267 '62. (MIRA 16:1)

(Germany, West—Coal mining machinery)

KASHTANOV, L.N.

Determination of the dynamic characteristics of safety turbo-clutches. Nauch.soob.IGD 14:119-133 '62. (MIRA 16:1)
(Clutches (Machinery))

DOKUKIN, Aleksandr Viktorovich, laureat Gosudarstvennoy premii, zasl. deyatel' nauki i tekhniki RSFSR, prof., doktor tekhn. nauk; BERMAN, Valerian Mikhaylovich, kand. tekhn. nauk; PONOMARENKO, Yuriy Filippovich, kand. tekhn. nauk; KUSOV, Yevgeniy Fedorovich, kand. tekhn. nauk; KOVAL', Yuriy Viktorovich, inzh.; KASHTANOV, Leonid Nikolayevich, kand. tekhn. nauk; ABRAMOV, V.I., ved. red.

[Centrifugal and displacement hydraulic transmissions and the prospects for their use in the mining industry] TSentrobezhnye i ob"emnye gidroperedachi i perspektivy ikh primeneniia v gornoi promyshlennosti. [By] A.V.Dokukin i dr. Moskva, Nedra, 1964. 369 p. (MIRA 18:2)

KASHTANOV, L. V.

Agriculture

Breeding in horse raising. Moskva, Gos. izd-vo selkhoz lit-ry, 1950

9. Monthly List of Russian Accessions, Library of Congress, June 1952 1953. Unclassified.

KASHTANOV, L. V.

Horse Breeding

Methods of breeding by strains for the improvement of horse breeds. Konevodstvo 22 no. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

KASHTANOV, L. V.

USSR/Farm Animals - Horses. Q-2

Abs Jour : Ref Zhur -Biol., No 1, 1958, 2551

Author : L. Kashtanov
Inst :
Title : Horse Breeding on a Range.

Orig Pub : Konevodstvo, 1957, No 2, 16-20

Abstract : Suggests a group maintenance of horses on ranges in areas where the virgin and waste lands have been completely ploughed under. The suggested plan provides the organization of a green conveyer, supplementary feeding during the period when the horses are on pasture, new techniques of maintenance on ranges and pastures. In zones where the land has been only partially cleared, and large pasturages still remain, though unsuitable for agriculture, this land may be successfully utilized for many variations of scientific methods of horse-breeding on a range. These methods result in an increase of the height of the newly bred

Card 1/2

KASHTANOV, L. V.

USSR/Farm Animals. Horses. Q

Abs Jour: Ref Zhur-Biol., No 4, 1958, 16744.

Author : Kashtanov L.
Inst :
Title : Breeding of Horses in the USSR (Konevodstvo v SSSR)

Orig Pub: Konevodstvo, 1957, No 7, 3-10.

Abstract: The article ddscribes the origin and development of horse breeding in the USSR from the oldest times. A singular popular selection contributed to the production of such high quality breeds as Akhal-Tekinskaya, Kabardinskaya, Viyatskaya, Narymskaya, Yakutskaya, etc. In the later period Bityug, Don and Orel were famous. To produce these breeds, methods of complicated crossbreeding, selection,

Card : 1/2

KULESHOV, Vasiliy Nikolayevich; KASHTANOV, M.F., dotsent, otv.red.; ROZHDESTVENSKAYA, V.A., red.

[Conversion of solar energy to electric power] Preobrazovanie solnechnoi energii v elektricheskuiu; lektsiia po kursu "Energetika predpriiatii sviazi." Moskva, Vses.zaochnyi elektr. in-t sviazi, 1961. 18 p. (MIRA 15:4)
(Solar batteries)

3(5)

SOV/12-91-2-10/21

AUTHOR: Kashtanov, S.G., Kashtanov, M.S.

TITLE: A Large Residual Mountain at the Mouth of the Kama River

PERIODICAL: Izvestiya Vsesoyuznogo geograficheskogo obshchestva, 1959, Nr 2, pp 170 - 173 (USSR)

ABSTRACT: The author describes the Pichkasy residual mountain (ostanets) situated near the mouth of the river Kama at its confluence with Volga. It is about 75 m high and 2 km long, and has been described by other Soviet geologists, such as Yazykov, Krotov, Nechayev and V.A. Cherdyntsev. It is composed of dolomite, limestone and marl with nests of crystalline gypsum interspersed. The lime is being quarried near the village of Pichkasy. The formation dates from the transition period between

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Large
A/Residual Mountain at the Mouth of the Kama River

SOV/12-91-2-10/21

Paleogene and Neogene and is typical of the whole Kama - Volga area. The author thinks that the mountain came into being at the early Quaternary period. There are 2 diagrams and 16 Soviet references.

Card 2/2

KASHTANOV, M.S.

Material for the study of the Kurzhunkul'skiy iron deposit. Uch.zap. Kaz.un. 120 no.4:43-57 '60. (MIRA 14:6)
(Kurzhunkul'skiy region—Iron ores)

KASHTANOV, S.D.

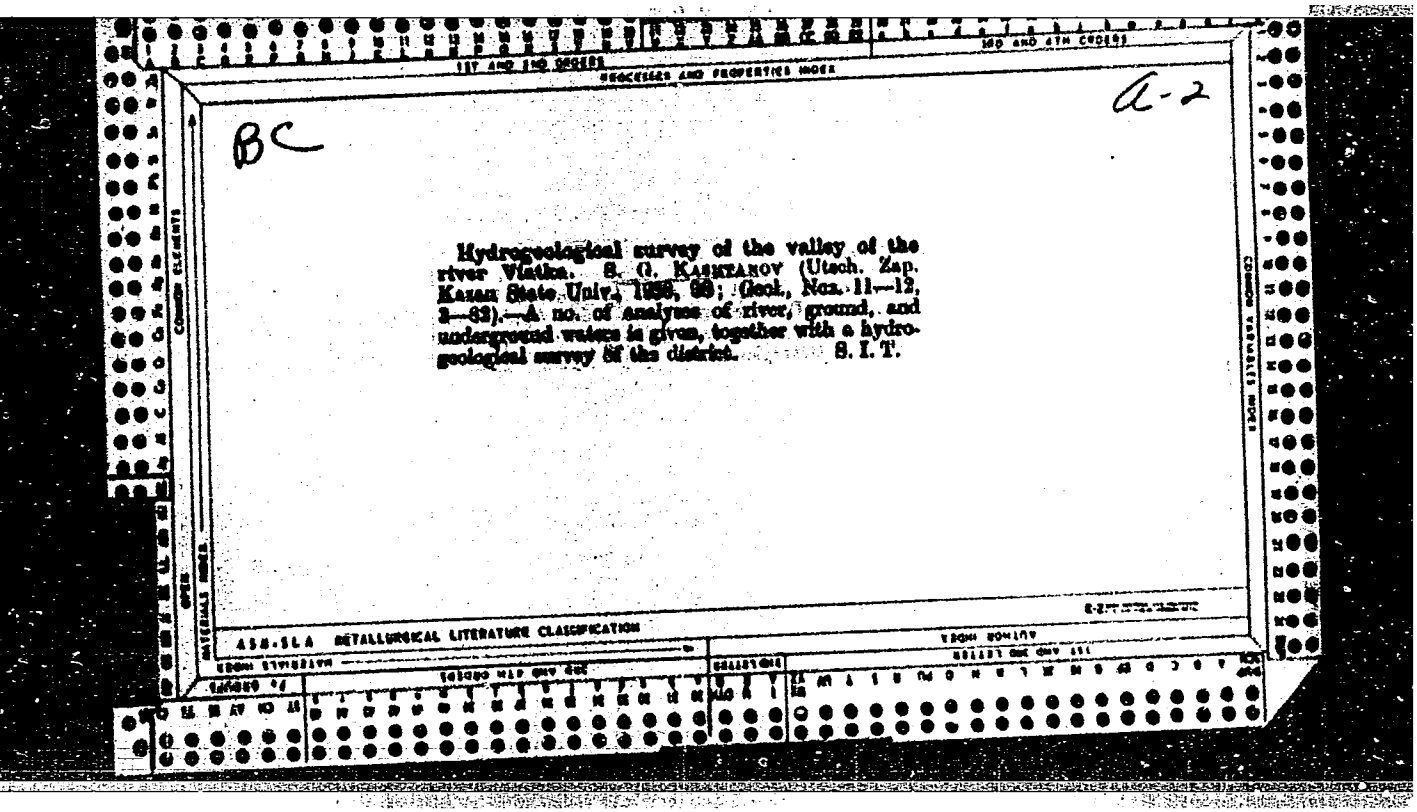
Use of gunite for waterproofing mine superstructures. Shakh. stroi. no.1:27 Já '59. (MIRA 12:1)

1.Zamestitel' glavnogo inzh. tresta Stalinshakhtostroy.
(Gunite) (Waterproofing)

KASHTANOV, S.D.

Rapid construction of reinforced concrete headframes without struts.
Shakht.stroi. no.2:25-26 F '59. (MIRA 12:3)

1. Zamestitel' glavnogo inzhenera tresta Stalinshakhtostroy.
(Mine buildings)



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Hydrogeological survey of the valley of the river Viatka. S. G. KASHTANOV (Utech. Zap. Kazan State Univ., 1956, 99; Geol., Nos. 11—12, 2—63).—A no. of analyses of river, ground, and underground waters is given, together with a hydrogeological survey of the district. S. I. T.

KASHTANOV, S.G.

Karstic phenomena in the region of Morkinskaya Upland. Geog. sbor. 1:88-92 '52. (MLRA 6:7)
(Morkinskaya Upland--Karst) (Karst--Morkinskaya Upland)

KASHTANOV S. G.

Kurorty Tatarii (Health Resorts of Tatar by Z. N. Blyumshteyn N. F. Pushkin, S. G. Kashtanov) Kurorty, Sanatorii, Doma Otdykha. Kazan', Tatgosizdat, 1953. 150 P. Illus., Map, Tables.

SO: 747N/5
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KASHTANOV, S.G.

History of the paleo-Kama River during the Pliocene. Izv.Vses. geog.ob-va 86 no.1:85-89 Ja-F '54. (MLRA 7:2)
(Kama Valley--Paleogeography) (Paleogeography--Kama Valley)

KASHTANOV, S. G., AND SELIVANOVSKIY, B. V.

Certain Peculiar Forms of Relief in the Central Region Along the Volga

The authors discuss the Syukeyevsk caverns located on the right bank of the Volga further south than Kazan. They confirm the opinion of other investigators that these caverns are galleries tunneled for mining of gypsum (7th to 14th Centuries), which afterwards were transformed, mainly by flood waters. The activity of man explains also the pseudokarst forms in the region of the Arzamas river and certain "structural terraces" in the lower reaches of the Nola river and other regions. The first ones represent breakthroughs on underground workings of limestones and dolomites; the second, refuse dumps of gangue from abandoned mining pits and galleries. (RZhGeol, No. 4, 1955) Uch. Zap. Kazansk. un-ta, 114, bk. 3, No 21 (Geol.), 1954, 171-179.

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

KASHTANOV, S.G.

Some results of hydrogeological research in the central portion of the Volga-Kama region. Uch.zap. Kaz.un. 114 no.9:109-123 '54. (MLRA 10:3)

(Volga Valley--Hydrology)

KASHTANOV, S.G. (Kazan'); AFANAS'YEV, T.P. (Kazan'); NELIDOV, N.N. (Kazan')

Underground waters of the Volga-Kama region. Uch.zap.Kaz.un. 115 no.10:126-129 '55. (MLRA 10:5)
(Volga Valley--Water, Underground)

KASHTANOV, S.G.

V.A. Cherdyntsev. Biul.MOIP.Otd. geol. 31 no.2:93-96 Mr-Ap '56.
(MLRA 9:8)
(Cherdyntsev, Viktor Alekseevich, 1882-1954)

KASHTANOV, S.G.

New data on the history of Paleozoic developments in the Kama river region. Dokl.AN SSSR 106 no.4:708-711 F '56.(MLRA 9:6)

1.Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova-Lenina. Predstavleno akademikom N.M.Strakhovym.
(Kama Valley--Geology, Stratigraphic)

KASHTANOV, S.G.

Formation of underground waters at the Tatar anticline. Dokl.AN SSSR 108 no.4:715-717 Je '56. (MLRA 9:9)

1.Predstavlene akademikom N.M.Strakhovym.
(Tatar A.S.S.R.--Water, Underground)

KASHTANOV, S. G.

15-57-2-1424

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 2, p 35 (USSR)

AUTHORS: Sementovskiy, V. N., Polyanin, V. A., Kashtanov, S. G.

TITLE: Geomorphology and Geology of the Volga and Kama Valleys in the Region of Tatarskaya Republic (Geomorfologiya i geologiya poym rek Volgi i Kamy v predelakh Tatrespubliki)

PERIODICAL: Uch. zap. Kazansk. un-ta, 1956, Vol 115, Nr 15, 104 pp.

ABSTRACT: Bibliographic entry

Card 1/1

KASHTANOV, S. G.

15-57-7-9977

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 180 (USSR)

AUTHOR: Kashtanov, S. G.

TITLE: Ground Water of the Middle Volga and Lower Kama Districts as a Source for Water Supply /Podzemnyye vody Srednego Povolzh'ya i Nizhnego Prikam'ya (v tselyakh vodosnabzheniya)/

PERIODICAL: Uch. zap. Kazansk. un-ta, 1955, Vol 115, Nr 16, pp 161-210

ABSTRACT: The present article describes the ground water of the Middle Volga and Lower Kama districts. The water of the alluvial deposits lies at depths of 2 to 6 m and 30 to 60 m. It is fed by atmospheric precipitation, river waters and inflow from primary rock deposits. The mineralization of the water increases to 1.8 to 2.6 g/liter and the content of sulfates increases

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Chair of General Geology

Ground Water of the Middle Volga (Cont.)

(Kazan', Volzhsk, and other places) in the hydrogeological "windows" on bottomland terraces, on the edges of the ancient valley of the Volga River, and in places of buried tectonic structures. Hydrocarbonates predominate in the water of the upper zone; the average mineralization is 0.3 to 0.6 g/liter; the hardness is 8 to 18 German degrees. The output of the wells is about 50 cu m/hour. The Domashkinskiy and Kinel' water-bearing levels are distinguished in the cross section of Neogene deposits. The Kinel' level plays an important part in the hydrogeology of the trans-Kama area and is associated with the rocks filling the ancient valleys of the Kama, Vyatka, Belaya, and other rivers. Artesian waters lie at depths up to 60 m to 120 m. Waters of high mineralization are found together with drinking water. The output of the level is determined by the lithologic composition of the rock and reaches 0.6 to 2.0 liters/sec. The waters in Cretaceous and Jurassic deposits in the southwestern part of the Tatar Republic have a higher hardness and a low flow. Two water-bearing series occur in the Tatar deposits of the Volga district: 1) an upper (arenaceous-argillaceous) series with a lower

Ground Water of the Middle Volga (Cont.)

water content, and 2) a lower (argillaceous-marly) series with a higher water content. The drinking water lies above the level of the rivers; its mineralization is 0.3 to 0.4 g/liter; its hardness-- 18 to 23 German degrees. Water with a mineralization of 2.0 to 0.3 (sic) g/liter and a hardness of 70 German degrees and over lies at a lower level. The mineralization is of calcium-magnesium bicarbonate. The water has a higher mineralization and a calcium-sulfate composition at lower levels and in places where gypsum is present (Tetyukhe, Aksubayevo). The conditions and quality of the waters in the Kazan' deposits vary with the conditions of their deposition and the lithology of the rocks. They are fed by regions within the limits of brachyanticlinal structures (the Shugurovskaya, Bavlinskaya, Mariysko-Vyatskaya and others). The waters here are fresh (0.3 to 0.4 g/liter) and form numerous springs with a rate of flow from a weak seepage to 5 liters/sec; the composition is calcium sulfate and bicarbonate. The waters in the zone of subsidence of the Tatar rocks are artesian, strongly mineralized (up to 15 g/liter),

Ground Water of the Middle Volga (Cont.)

and have a magnesium-calcium sulfate and sometimes a sodium chloride composition. The latter composition is found in the areas of Cheboksary, Vasil'sursk, and others. The rate of flow of the wells is about 4 to 9 liters/sec. The Ufa River water-bearing level extends through the eastern and northeastern part of the described territory. The waters which lie above the river bed are fresh, low-flow, and bicarbonate or sulfate-bicarbonate. The water-bearing levels which lie below the level of the river bed acquire pressure and gain in calcium sulfate or sulfate-chloride, with a mineralization up to 2 to 2.5 g/liter. A similar situation is observed in the lower Permian waters, which are outstanding in their variety of chemical composition. This variety is associated with a possible discharge of mineralized waters of the Carboniferous in places of tectonic structures (the Izhevsk, Shugorovskiye and other springs). The waters of the Carboniferous and Devonian deposits, revealed by deep wells, have a sodium sulfate-chloride, and basically a calcium chloride composition. The Volga-Kama region is divided into the

KASHTANOV, S. G.

15-57-7-9975

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 179 (USSR)

AUTHORS: Nelidov, N. N., Kashtanov, S. G.

TITLE: Effect of Local Feeding Recharge on the Formation of Ground Water in the Volga and Kama River Valleys (O vliyanii mestnykh oblastey pitaniya na formirovaniye podzemnykh vod v dolinakh rek Volgi i Kamy)

PERIODICAL: Uch. zap. Kazansk. un-ta, 1956, Vol 115, Nr 16, pp 211-218

ABSTRACT: Under the action of drainage the rate of seepage of ground water increases in the vertical as well as the horizontal direction at the focal points of discharge. As a result, the mineralized waters rise and saturate alluvial deposits. The opposite case is true in sectors where alluvial terraces constitute the local recharge regions. Here the mineralized water is forced

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down under pressure of fresh water. Chemical analysis confirms the process of "forcing down" of the mineralized waters in the environs of Kazan' on a terrace up to 35 m in elevation. (The boundary of mineralized waters in the valley of the Volga River lies between the +20 and +30 m elevations.) Similar conditions exist in the Kama River valley in the area near the town of Yelabuga. These phenomena should be considered in studying problems of water supply.

I. K. Gabich

NEPRIMEROV, N.N.; SHARAGIN, A.G.; NUZHIN, M.T., prof., otv. red.; MARKOV, M.T., prof., zamestitel' otv. red.; KASHTANOV, S.G., prof., red.; ARBUZOV, B.A., akademik, red.; AL'TSHULER, S.A., prof., red.; LIVANOV, N.A., prof., red.; NORDEN, A.P., prof., red.; PISAREV, V.I., prof., red.; TIKHVINSKAYA, Ye.I., prof., red.; BARYSHNIKOV, V.G., dots., red.; KOLESNIKOVA, Ye.A., dots., red.; KOLOBOV, N.V., dots., red.; MOROZOV, D.G., dots., red.; KHARITONOV, A.P., dots., red.; YUDIN, I.N., red.; SAMITOV, Yu.Yu., red.

[Investigations of wells and development of preventive paraffin control methods] Issledovanie skavazhiny i razrabotka preventivnykh metodov bor'by s parafinom. Kazan' 1957. 108 p. (Kazan. Universitet. Uchenye zapiski, vol. 117, no.3). (MIRA 11:5)

1. Rektor Kazanskogo gosudarstvennogo universiteta (for Nuzhin). 2. Prorektor po nauchnoy rabote Kazanskogo gosudarstvennogo universiteta (for Markov). 3. Prorektor po uchebnoy rabote Kazanskogo gosudarstvennogo universiteta (for Kashtanov). 4. Sekretar' partkoma Kazanskogo gosudarstvennogo universiteta (for Yudin).
(Oil wells) (Petroleum engineering)

KASHTANOV, S.G.

Hydrochemical characteristics of the Kazanka River. Uch. zap. Kaz. un. 117 no.9:282-290 '57. (MIRA 13:1)

1.Kazanskiy gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina. Kafedra obshchey geologii.
(Kazanka River--Water--Analysis)

KASHTANOV, S.G.; NELIDOV, N.N.

Relationship between the dome and depression types of horizons bearing mineralized water in the Volga Valley. Trudy Lab.gidrogeol. probl. 16:82-85 '58. (MIRA 12:2)

1. Kazanskiy gosudarstvennyy universitet.
(Volga Valley--Water, Underground)

KASHTANOV, S.G.; KUSURGASHEV, I.M., red.

[Ground water of Kazan] Gruntovye vody g.Kazani. Kazan', Izd-vo Kazanskogo univ., 1959. 161 p. (MIRA 15:1)
(Kazan—Water, Underground)

KASHTANOV, S.G.

Change in the qualitative composition of water in Central Kaban Lake under hydrostatic pressure in Kuybyshev Reservoir. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.2:122-124 '59. (MIRA 12:8)

1. Kazanskiy universitet, geograficheskiy fakul'tet.
(Central Kaban Lake--Water--Analysis)

SOV/12-91-2-10/21

3(5)

AUTHOR: Kashtanov, S.G., Kashtanov, M.S.

TITLE: A Large Residual Mountain at the Mouth of the Kama River

PERIODICAL: Izvestiya Vsesoyuznogo geograficheskogo obshchestva, 1959, Nr 2, pp 170 - 173 (USSR)

ABSTRACT: The author describes the Pichkasy residual mountain (ostanets) situated near the mouth of the river Kama at its confluence with Volga. It is about 75 m high and 2 km long, and has been described by other Soviet geologists, such as Yazykov, Krotov, Nechayev and V.A. Cherdyntsev. It is composed of dolomite, limestone and marl with nests of crystalline gypsum interspersed. The lime is being quarried near the village of Pichkasy. The formation dates from the transition period between

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KASHTANOV, S.G.

Underground water in the central and southern portions of the Vyatka Val. Izv. vys. uchęb. zav.; geol. i razv. 2 no.12: 115-118 '59. (MIRA 14:6)

1. Kazanskiy gosudarstvennyy universitet.
(Vyatka Val—Water, Underground)

KASHTANOV, S.G.

Paleovalley of the Kama River in the Kazan portion of the trans-Kama region. Izv. AN SSSR. Ser. geog. no.6:61-66 N-D '60. (MIRA 13:10)

1. Kazanskiy Gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina.
(Kazan Province--Paleogeography)

SELIVANOVSKIY, B.V.; KASHTANOV, S.G.

Karst in the central Volga Valley. Uch.zap.Kaz.un. 121 no.6:3-22 '61. (MIRA 14:10)

(Volga Valley—Karst)

KASHTANOV, S.G.

Washout of the mouth of the Kama. Uch.zap.Kaz.un. 121 no.6:34-39 '61. (MIRA 14:10)

(Kama Valley--Erosion)

KASHTANOV, S.G.

Early Cenozoic karst on the territory of the middle Volga Valley.
Izv. AN SSSR. Ser. geog. no.3:79-84 My-Je '63. (MIRA 16:8)

1. Kazanskiy gosudarstvennyy universitet im. V.I.Ul'yanova-Lenina.
(Volga Valley—Karst)

KASHTANOV, S. G.

A recent karst sink. Izv Vses geog ob-va 96 no. 1:57
Ja-F '64. (MIRA 17:5)

KASHTANOV, V.A.; GOL'BERT, A.V.

Geology and mineralogy of Mesozoic and Genozoic sediments in the Yenisey trough and an estimation of their possible reserves. Geol. i geofiz. no.4:88-99 '63. (MIRA 16:10)

1. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya, Novosibirsk.

KASHTANOV, V.A.; GOL'BERT, A.V.

Conditions governing the formation of Upper Cretaceous sediments and some minerals in the Ob' Valley portion of the West Siberian Plain. Trudy SNIGGIMS no.6:163-172 '61. (MIRA 15:7)
(Ob' Valley--Ore deposits)

BELOUS, N.Kh., st. nauchn. sotr.; KAZANSKIY, Yu.P.; VDOVIN, V.V.; KLYAROVSKIY, V.M.; KUZNETSOV, V.P.; NIKOLAYEVA, I.V.; NOVOZHILOV, V.I.; SENDERZON, E.M.; AKAYEV, M.S.; BABIN, A.A.; BERDNIKOV, A.P.; GORYUKHIN, Ye.Ya.; NAGORSKIY, M.P.; PIVEN', N.M.; BAKANOV, G.Ye.; GEBLER, I.V.; SMOLYANINOV, N.M.; SMOLYANINOVA, S.I.; YUSHIN, V.I.; D'YAKONOVA, N.D.; REZAPOV, N.M.; KASHTANOV, V.A.; GOL'BERT, A.V.; SIDOROV, A.P.; GARMASH, A.A.; BYKOV, M.S.; BORODIN, L.V.; RYCHKOV, L.F.; KUCHIN, M.I.; SHAKHOV, F.N., glav. red.; SHPAKOVSKAYA, L.I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorudnyi bassein. Novosibirsk, Red.-izd. otdel Sibirskogo otdniia AN SSSR, 1964. 447 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR (for Belous, Kazanskiy, Vdovin, Klyarovskiy, Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N.Kh.---(continued). Card 2.

Tomskiy politekhnicheskiy institut (for Bakanov, Gebler, Smolyaninov, Smolyaninova). 5. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya(for Yushin, D'yakonova, Rezapov, Kashtanov, Gol'bert). 6. Institut ekonomiki sel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskiy institut (for Bykov, Borodin, Rychkov). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuchin). 9. Chlen-korrespondent AN SSSR (for Shakhov).

KASHTANOV, V.I.

Experience of mixed brigades in saving metal. Avt.trakt.prom. no.7:6-7 Jl '53. (MLRA 6:8)

1. Khar'kovskiy traktornyy zavod. (Forging)

13,2000

S/024/62/000/002/009/012
E140/E135

AUTHORS: Kazantsev, V.V., and Kashtanov, V.N. (Leningrad)

TITLE: On a reliability criterion for automatic control systems

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.2, 1962, 136-139

TEXT: The article seems to be devoted to a consideration of autopilot reliability considerations. Three types of system faults are distinguished; where the character of the transient process is changed, where the deviations are changed, and where the magnitudes of the overshoots or maxima of the coordinates are affected. For example, an autopilot fault which permits flight to continue at an altitude lower than that prescribed is a fault of the second type. In the analysis of the system, each element is assigned to the group corresponding to the type of system fault produced by its breakdown. The reliability of the system can be calculated on analogue computer models if the actual system is inaccessible for reliability tests.

Card 1/1 SUBMITTED: August 7, 1961

KAZANTSEV, V.V. (Leningrad); KASHTANOV, V.N. (Leningrad)

Concerning a certain criteria for evaluating the reliability of automatic control systems. Izv.AN SSSR.Otd.tekh.nauk.Energ.i avtom. no.2:136-139 Mr-Ap '62. (MIRA 15:4)
(Automatic control)

KASHTANOV, V.S.

SOV/112-58-1-593

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 1, p 89 (USSR)

AUTHOR: Kashtanov, V. S.

TITLE: Distinctive Features of New TBU-1 Trolley Bus Construction (Konstuktivnyye osobennosti novogo trolleybusa TBU-1)

PERIODICAL: Transp. mashinostroyeniye, 1956, Nr 1, pp 20-24

ABSTRACT: Plant imeni Uritskiy has built an experimental TBU-1 trolley bus 11,620 mm long, weighing 10,780 kg, which has an all-metal body of no-frame carrier-type construction. The body skeleton is made of welded sections assembled from pressed profile material 1.5 mm thick. The bus is equipped with forced electric ventilation and heating. Starting-resistor heat is used for heating, and a centrifugal electric fan is used for ventilation. The body is supported by semi-ellyptic main springs. Rear main springs have variable elasticity, thanks to a spring seat situated under the main spring. Transmission of torque from the traction motor to the reducer of the rear axle is effected by means of a hollow shaft with 2 rigid universal needle-type joints; the reducer

Card 1/3

Distinctive Features of New TBU-1 Trolley Bus Construction

has 2 steps. The first step consists of 2 bevel gears with spiral teeth, with transmission ratio 2.27, module 10, tooth incline angle 35°; the gears are made of 12 x 2NCh steel. The second step consists of 2 cylindrical gears with skew teeth, with transmission ratio 4.25, module 7, tooth angle 13°7'; made of 18 x GT steel. The overall gear ratio of the reducer is 9.65. The reduction gear is designed for operation without replacement of any major part for 200,000-250,000 km. Axle shafts have a diameter of 52 mm in the middle and 62 mm at the ends; the material is 40 x NChA steel. The maximum torsional stress in the axle shafts is 2,800 kg/cm^2, the torsion angle is 8° or less. Design speed is 64.5 km/h, steady speed on the plain is 53 km/h, speed against the grade of 20‰ is 45 km/h, mean acceleration during the starting period (before automatic running characteristic is attained), with motor full-field, is 1.35 m/sec^2. Type DK-204B traction motor is used. The control generator and fans are driven by a common, type KPDN-2U, electric motor, continuous rating 4.2 kw, 2,320 rpm, 600 v. Stopping distance with electro-pneumatic

SOV/112-58-1-593

Distinctive Features of New TBU-1 Trolley Bus Construction

braking is 7.1 m for a loaded bus, 4.5 m for an empty bus. All technical characteristics of TBU-1 are given, as well as drawings of the rear-axle suspension, reducer, and shaft coupling.

T.A.K.

AVAILABLE: Library of Congress

1. Passenger vehicles---Design

Card 3/3

ZHILIN, P.G.; KASHTANOV, V.S.

The ZIU-5 standardized trolley bus. Biul.tekh.-ekon.inform. no.1:74-75 '60. (MIRA 13:5)
(Trolley buses)

KASHTANOV, V. V.

Horse Trainigg

Improve the conduct of hippodrome trials for riding-and harness-horse breeds/ Konevodstov 22, no. 6. 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952. Unclassified.

KASHTANOV, Ye.I.

Processing cottonseeds without rupturing the oil cells. Masl.-zhir. prom. 27 no. 4:38-40 Ap '61. (MIRA 14:4)

1. Karasuyskiy maslozekstraktsionnyy zavod.
(Cottonseed)

KASHTANOV, Ye.I.

Recovering cottonseed kernels in a husking mill. Masl. - zhir. prom. 27 no.8:42 Ag '61. (MIRA 14:8)

1. Karasuyskiy maslookstraktsionnyy zavod.
(Cottonseed)

KASHTANOV, Ye.I.

Seed bin with a day's capacity. Masl.-zhir. prom. 27 no.9:38 S '61. (MIRA 14:11)

1. Karasuyskiy masloekstraktsionnyy zavod. Vneshtatnyy korrespondent zhurnala "Masloboyno-zhirovaya promyshlennost'".
(Oil industries--Equipment and supplies)

KASHTANOV, Ye.I.

Modernization of washing drums in the Karasuisk oil-extraction plant. Masl.-zhir.prom. 28 no.7:38 Jl '62. (MIRA 15:11)

1. Karasuyskiy masloekstraktsionnyy zavod.
(Cottonseed)

KASHTANOV, Ye.I.

Copying lath. Masl.-zhir.prom. 28 no.12:31 D '62. (MIRA 16:1)

1. Karasuyskiy masloekstraktsionnyy zavod.
(Lathes)

KASHTANOVA, A. M.

Dissertation: "Production of Semiconducting Ceramics Based on WO_3 and Research Into Their Electrical and Thermoelectric Properties." Cand Phys Math Sci, Moscow City Pedagogical Inst, Moscow 1953

W-30928

SO: Referativnyy Zhurnal, No. 5, Dec 1953, Moscow, AN USSR (NXXXXXX)

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27681

perature conductivity factor is positive. The termo-emf in all the specimens is of thenegative sign. The magnitude of the temperature factor of the thermo-emf varies between the limit of 0.7 and 0.85 mv per degree and depends on the synthesis conditions and the type of the addition. Sintering in oxygen flow permits to obtain a greater thermo-emf as compared with sintering in air. The magnitude of the factor of the thermo-emf remains constant in the temperature range from 20 to 220°. The factor of heat conductivity increases with the temperature rise. The great concentration of current carriers does not allow to measure Hall's constant. It is surmised that the dissociation $4WO_3 \rightleftarrows 2W_2O_5 + O_2$ takes place at the thermal treatment; this dissociation may be reduced by sintering in oxygen flow. The dissociation furthers the rise of the number of defects in the crystalline lattice, which results in the rise of the electrical conductivity. The electrical conduct-

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27681

ivity rise observed at a fast cooling of specimens is explained also by the structural defects, the removal of which by a return addition of oxygen requires roasting. A rise of the content of additions causes a drop of the specific electrical conductivity, which is probably caused by the formation of polytungstates of they type of $Na_2WO_4 \cdot nWO_3$, possessing a greater thermal stability than pure WO_3. The dependence of specific electrical conductivity on the temperature is studied and the factors determining the dependence of the logarithm of electrical conductivity on the inverse temperature: $\log \delta = f(1/T)$ are found out.

Category : USSR/Electricity - Semiconductors G-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4227

Author : Shanavi, G.I., Kashtanova, A.M.
Title : Concerning a Procedure for Measuring the Coefficient of Thermoelectromotive Force of Semiconductors

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 4, 895-899

Abstract : Two setups are described for the measurement of thermoelectromotive forces: 1) The oven contains a table made of refractory steel with a horseshoe bracket, under which the specimen, in the form of an elongated (not less than 8 mm) parallelopiped, is placed on an insulating asbestos liner. The bracket contains two screws along the axis, into which thermocouples are inserted, and which serve to clamp the specimen. The thermoelectromotive force is measured between two copper-constantan thermocouples passing through the screws. A temperature gradient is produced by a heated copper rod, brought against the face of the specimen. Measurements up to 230 -- 240° are made with a high-resistance potentiometer. The accuracy is 3 -- 4%. 2) Specimens 60 -- 70 mm long and 4 mm in diameter are clamped in a vertical position inside the oven.

Card : 1/2

Category : USSR/Electricity - Semiconductors G-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4227

The clamps have additional heaters. Three thermocouples are clamped on the side with springs. The contacts between the thermocouple and the specimen, as in the first case, are thermally insulated. The thermal insulation is produced by mixing soaked asbestos with a small amount of liquid glass. Measurements were carried out up to 320 -- 340°.

Card : 2/2

KASHTANOVA, A. M.

AUTHORS Skanavi, G.I., Kashtanova, A.M. 57-8-17/36

TITLE Preparation of a Group of Glasses with Enhanced Dielectric Permeability and Investigation of their Dielectric Properties. (Polucheniye i issledovaniye dielektricheskikh svoystv gruppy stekol s povyshennoy dielektricheskoy pronitsayemost' yu.)

PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 8, pp. 1770-1777 (USSR)

ABSTRACT Barren boron-lead-titanium glasses with relatively high dielectric constants (= 35 and = 32) as well as with high a breakdown voltage (= 2.10^6 V/cm) were produced. These barren glasses show a relatively small value for the tangent of the angle of loss ($tg\delta \simeq 0{,}003 \div 0{,}004$) which depends little on the frequency and the temperature in a relatively wide temperature- and frequency range, as is the case with the dielectric constant. The data of the x-ray analysis and the petrographic inspection of the samples of barren glasses made it possible to explain the character of becoming barren as well as the reason for the enhanced values of the dielectric constant and of the electric strength. An additional crystallization of the barren glasses investigated leads to an increase of the dielectric constant and to a decrease of electric strength. (With 6 illustrations, 4 tables and 4 Slavic references).

Card 1/2

KASHTANOVA, A. M.

Kashtanova, A.M. and Skanavi, G.I. [Fizicheskiy institut imeni P.N. Lebedeva AN SSSR (Physical Institute imeni P.N. Lebedev, AS USSR)] The Dielectric Constant of Several Metallic Bismuthates

(The Physics of Dielectrics; Transactions of the All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1958. 245 p. 3,000 copies printed.

This volume publishes reports presented at the All-Union Conference on the Physics of Dielectrics, held in Dnepropetrovsk in August 1956 sponsored by the "Physics of Dielectrics" Laboratory of the Fizicheskiy institut imeni Lebedeva An SSSR (Physics Institute imeni Lebedev of the AS USSR), and the Electrophysics Department of the Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University).

AUTHORS: Kashtanova, A. M., Skanavi, G. I. 48-22-3-2o/3o

TITLE: The Dielectric Constant of the Bismuthates of Some Metals (Dielektricheskaya pronitsayemost' vismutatov nekotorykh metallov)

PERIODICAL: Izvestiya Akademii Nauk SSSR Seriya Fizicheskaya, 1958, Vol. 22, Nr 3, pp. 319 - 32o (USSR)

ABSTRACT: The authors tried to obtain by sintering compounds which may be called bismuthates by analogy with the titanates, i.e. compounds the layer of which would contain equimolar parts of Bi_2O_3 and one oxide with markedly developed basic properties as well as such oxides as CuO, ZnO, Al_2O_3.

It was possible to obtain well sintered ceramic samples with inner porosity, not more than 5%, with sintering of bismuth-trioxide Bi_2O_3 with metallic oxides Be, Mg, Ca, Zn, Sr, Ba.

Debye's samples for bismuthates Ca, Zn, Sr, Ba are very complicated and differ entirely from those of the initial substance. Debye's samples for Be-and Mg-bismuthates contain no lines characteristic for Be-and Mg-oxides. According to the

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The Dielectric Constant of the Bismuthates of Some Metals

number of lines they almost entirely agree with Debye's samples for Bi_2O_3, only the intensity of some lines is different. The dielectric properties were investigated by means of the acoustic "bridge" and the q-meter.(table). The bismuthates have increased ε-values which decrease according to the frequency. The values of the dielectric constant of the Be-, Mg- and Zn-bismuthates are higher than a those of the corresponding titanates. The obtained substances have relatively high values of specific resistance which is characteristing of good dielectrics (exception: Zn-bismuthate). Contrary to titanates and rutile, bismuthates have a positive

$$TK\varepsilon \left(\frac{1}{\varepsilon_1} \cdot \frac{d\varepsilon}{dT}\right).$$

The cause for the high values of the dielectric constant can only be determined after the determination of the structure of the bismuthates and after determination of the dependences of

The Dielectric Constant of the Bismuthates of Some Metals 48-22-3/20/30

both temperature and frequency of ε and $tg\,\delta$ in a greater temperature - and frequency-interval. There are 2 figures, 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute imeni P. N. Lebedev, AN USSR)

AVAILABLE: Library of Congress

1. Bismuth compounds--Dielectric properties 2. Metal oxide compounds--Dielectric properties 3. Sintering--Applications

Card 3/3

S/048/60/024/02/01/009
B006/B014

24.2130

AUTHORS: Kashtanova, A. M., Kurtseva, N. N., Skanavi, G. I. (Deceased)

TITLE: Investigation of the Polarization Relaxation and Phase Composition of Dielectrics of the System $SrTiO_3$ - $Bi_2O_3 \cdot nTiO_2$ (n=2,3)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 2, pp. 114 - 123

TEXT: The article under review was read at the Second All-Union Conference on the Physics of Dielectrics (Moscow, November 20 - 27, 1958). In previous papers, which deal with the properties of these dielectrics, it was found that the dielectrics of this system exhibit polarization relaxation within a wide concentration range of their components. This fact results in a very high dielectric constant ε' (without Seignette-electric properties). In the present paper, the authors give further results of investigations of this system on the basis of petrographic, chemical, and X-ray structural analyses. The results of investigations confirmed the assumption that TiO_2 or Bi_2O_5 are dissociated under the formation of oxygen, and phases of different conductivity are formed when ceramic dielectrics of this type are sintered at high temperatures (1,400 - 1,600°C) with

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Investigation of the Polarization Relaxation and Phase Composition of Dielectrics of the System $SrTiO_3$ - $Bi_2O_3 \cdot nTiO_2$ (n=2,3)

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B006/B014

an insufficient amount of oxygen. Such dielectrics have a defective structure, and besides polarization relaxation also Maxwellian relaxations may occur. The authors sintered 10 - 12 ceramic samples of the above-mentioned type with different concentrations of their components in hydrogen atmosphere. Subsequently, the samples were annealed at 1,050 - 1,200°C for 10 - 14 days and then examined. The samples were finally shaped like tabloids, had a thickness of 3-4 mm, a diameter of about 13 mm, and a bright yellow color. Results of chemical, X-ray, and microscopic analyses are given in Tables 1 and 2. The chemical analyses were made by I. D. Borneman and O. A. Alekseyeva at the IGYeM AN SSSR, and a polarographic analysis was made by N. M. Dyatlova at the Institut chistykh reaktivov (Institute for Pure Reagents). The X-ray analyses were carried out by K. V. Filippova. Various properties such as shape, structure, and composition of the numbered samples are discussed next. Figs. 1 and 2 show microphotographs of samples 1 and 2. Electrical measurements (in vacuum) were made in a wide temperature- and frequency range. Results are shown in diagrams. Fig. 3 shows the concentration dependence of ε' and $\tan\vartheta$ at 1.1 Mc/sec and 20°C for samples of the compound with n=3. The temperature dependences of ε' for n=3 and n=2 are shown in Fig. 4. The numbers of the curves are identical with the numbers of the samples. Almost all samples

Investigation of the Polarization Relaxation and Phase Composition of Dielectrics of the System $SrTiO_3$ - $Bi_2O_3 \cdot nTiO_2$ (n=2,3)

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B006/B014

attained their maximum dielectric constants between -80°C and -160°C. Fig. 5 shows the temperature dependence of tanδ for the same samples. tanδ also has a maximum in this temperature range. Fig. 6 shows the temperature dependence of ε' of a sample having the molecular composition 90.4 % $SrTiO_3$ + 9.6 % $Bi_2O_3 \cdot 3TiO_2$ at different frequencies between 0.1 and 1,100 kc/sec. The maximum is the higher the lower the frequency, and it is shifted toward low temperatures the more the lower the frequency. These curves as well as Figs. 7a and 7b clearly show the relaxation character of the polarization of solid solutions. There are 8 figures, 3 tables, and 5 references, 3 of which are Soviet.

Card 3/3

GUBKIN, A.N.; KASHTANOVA, A.M.; SKANAVI, G.I. [deceased]

Electric transfer in interstitial solid solutions. Fiz. tver. tela 3 no. 4:1117-1121 Ap '61. (MIRA 14:4)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR, Kiyev.
(Solutions, Solid) (Ions)

22046
S/181/61/003/004/012/030
B102/B214

94780Q (1136, 1137, 1153)

AUTHORS: Gubkin, A. N., Kashtanova, A. M., and Skanavi, G. I. (Deceased)

TITLE: Investigation of the dielectric properties of strontium bismuth titanates at low temperatures

PERIODICAL: Fizika tverdogo tela, v. 3, no. 4, 1961, 1110-1116

TEXT: The present work is a continuation of a series of investigations of the dielectric properties of strontium bismuth titanates (SBT). The SBT have a high dielectric constant and show a very strongly marked relaxation polarization. SBT have no ferroelectric properties - the high ε-value is related, however, with the relaxative character of polarization. In order to determine accurately the character of polarization in SBT, a large number of different kinds of experiments are required. The present paper makes a contribution to this by investigating the frequency and temperature dependence of ε and tan δ, as well as the dielectric hysteresis in $SrTiO_3$ - $Bi_2O_3 \cdot 3TiO_2$. The composition (in mole%) and the

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Investigation of the ...

sintering temperature of the 15 samples studied are given in the table. The results of the investigations are illustrated in diagrams. It is seen that all pastes with a bismuth titanate content of more than 0.1 mole% (at 1 kc/sec) have one maximum of ε that is shifted toward higher temperatures with increasing bismuth titanate content (pastes 2-9). Pure $SrTiO_3$ (paste 1) shows the highest value (ε = 6300) at $T < -196^{\circ}C$. The temperature dependence of tan δ (at 1 kc/sec) shows two maxima. The first lies at about -250°C, is low for pastes 1 and 2, and highest for paste 4, higher than the second (which is a special case). Its intensity again decreases rapidly; for paste 9 it is most indistinct. Its position remains unchanged. The second maximum increases throughout in intensity and width; however, it is shifted rapidly toward higher temperatures. The curves $\varepsilon(T)$ and tan $\delta = f(T)$ are seen to be practically independent of frequency for paste 1. It is seen further that the low-temperature maximum relative to its position is independent not only of the composition but largely also of frequency. The second maximum is shifted toward higher temperatures, and with increasing frequency it decreases in intensity for ε and increases for tan δ. Figs. 6, 7, and 8

show the corresponding curves for pastes 9, 12, and 15, respectively. All pastes showed hysteresis loops at low temperatures, but not at room temperatures (at least up to field strengths of 50-60 kv/cm). At the temperature of N, the saturation is hardly marked. Pure $BaTiO_3$, by contrast, shows saturation at He temperature, and that already at 3 kv/cm; at 10 kv/cm, it is very clearly marked. The results obtained can be explained from two points of view: 1) on the basis of relaxation polarization due to structural defects, and 2) on the assumption of spontaneous polarization. In this case, the relaxation phenomena are related to the domain mobility. Further investigations should clarify finally the problem of the nature of polarization. There are 10 figures, 1 table, and 4 Soviet-bloc references.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR Moskva (Institute of Physics imeni P. N. Lebedev, AS USSR, Moscow)

SUBMITTED: July 7, 1960 (initially) and October 20, 1960 (after revision)

22798
S/070/61/006/003/009/009
E073/E535

24.7800 (1153, 1160, 1136)

AUTHORS: Go: ina, Yu.I., Kashtanova, A.M., Maksimova, G.V. and Skanavi, G.I. (Deceased)

TITLE: Producing single crystals of strontium-titanate and some data on their dielectric properties

PERIODICAL: Kristallografiya, 1961, Vol.6, No.3, pp.473-475

TEXT: In other work the authors deal with the results of tests on growing single crystals of $SrTiO_3$ by the method of Verneuil from a charge produced by sintering equimolar parts of TiO_2(r) and $SrCO_3$. The obtained single crystals were dark-brown, tg δ equalled 0.007 to 0.0006, Laue patterns taken after annealing for 24 hours at t_{max} = 1200°C with subsequent slow cooling indicate the presence of tension and twining. More perfect crystals were grown from charges produced by the oxalate method. In this paper the method of preparing such charges and some data on the electric properties of the produced single crystals are given. The preparation of $SrTiO_3$ from strontium oxalate and titanate was as follows. The saturated solution of distilled $TiCl_4$ was prepared by gradual addition of the latter to water. It was experimentally

Producing single crystals of ... S/070/61/006/003/009/009
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established that saturation was reached when about 40 ml $TiCl_4$ was added to 100 ml of water. The concentration of the obtained solution was determined by precipitating titanium with ammonia and subsequent weighing in the form of TiO_2. Then, a 25% solution of $SrCl_2$ was prepared and both solutions were mixed; the obtained cold mixture was poured into a prepared 10% solution of hot ammonium oxalate. For neutralizing the forming oxide, ammonia was added until a smell could be detected. The obtained precipitate of a double salt of Sr and Ti oxalate was washed in water to remove chlorine, dried and sintered at 450°C for one hour so as to obtain $SrTiO_3$. After sintering, the powder was crushed in a porcelain mortar to such a size that it should pass through a sieve with 1000 holes per cm^2. Single crystals of $SrTiO_3$ were grown according to the Verneuil method in a corundum furnace. $SrTiO_3$ forms with silit rods, which are used as supports, easily fusible compounds, as a result of which the base of the crystal becomes soft. To prevent this, the base of the cone of the charge should be located in a zone with sufficiently low temperatures. It was established experimentally that the base of the cone should be at a distance of 3 cm from the top at the instant of formation of a

Producing single crystals of ... S/070/61/006/003/009/009
E073/E535

drop on it ($t \simeq 2000°C$); therefore, prior to drop formation, the charge cone was 3 cm high. In a number of experiments bases were used which were made of pressed $SrTiO_3$ powder sintered at 1400°C. The crystals were grown without germinations at an average speed of 10 to 30 mm/hour. The flame conditions varied from a reducing one to an oxiding one. Under oxiding conditions, bright transparent crystals 30 mm long with a diameter of over 5 mm were produced. The reflection index determined by the immersion method equalled 2.39. According to spectrum analysis, the contents of the admixtures did not exceed the following values in %: Mg - 0.006, Si - 0.006, Al - 0.01, Fe - 0.003. The produced single crystals were annealed to remove internal stresses. Then, slices 6 x 5 x 1 mm were cut perpendicularly to the axis of growth. Silver electrodes were burned on after the coherence of the surface had been checked by a microscope. The dielectric constant varied between 315 and 320 and was independent of frequency. At sonic frequencies tg δ did not exceed 0.004. Fig.1 shows the dependence of ε and tg δ on the temperature for $SrTiO_3$ single crystals at the frequencies 200 c.p.s., 1 and 5 kc/s for the values denoted by 1, 2, 3 and 1', 2', 3' in

the plot. At temperatures below 77°K a sharp increase in ε was observed. In the range 3 to 4°C above the liquid helium temperature ε remains practically constant, reaching a value of about 15 000. The temperature dependence of tg δ is characterized by a very pronounced maximum (at $T \sim 13$°K), the position of which is practically independent of frequency. In the temperature range 48 to 98°K a second, weak maximum was observed for tg δ, which shifts towards higher temperatures with increasing frequency. Investigation of the dielectric hysteresis was at 293, 77, 4.2 °K. No hysteresis loops were detected at room temperature and liquid nitrogen temperature. The maximum potential of the electric field in these cases did not exceed 30 kV/cm. The results obtained at liquid helium temperature are plotted in Fig.2 (graph 1 - E = 1 kV/cm, graph 2 - E = 3 kV/cm, graph 3 - E = 5 kV/cm). They show that, at this temperature, the hysteresis loop is very narrow without a pronounced saturation. Due to breakdown of the investigated specimens, the authors were unable to observe hysteresis loops at higher field strengths. Work is proceeding on elucidating the influence of the purity of single crystals on their dielectric

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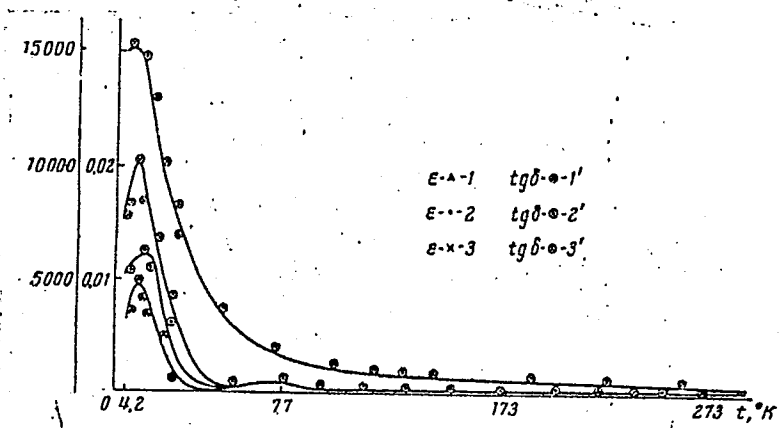
properties and the dependence of the latter on various small additions. There are 2 figures and 1 Soviet reference.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva (Physics Institute imeni P. N. Lebedev)

SUBMITTED: July 25, 1960

Fig.1



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B108/B102

AUTHORS: Gubkin, A. N., Kashtanova, A. M., Potapov, Ye. V., and Solodukhin, A. V.

TITLE: Nonlinear properties and phase transitions in strontium-bismuth titanates

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3293 - 3300

TEXT: Earlier work (FTT, 2, 12, 3077, 1960; 3, 4, 1110, 1961) in studying the nonlinear properties of the system $SrTiO_3$-$Bi_2O_3 \cdot 3TiO_2$ is continued. The specimens had relaxation properties. The maxima of the ε and tan δ versus temperature curves are shifted to higher temperatures when the frequency of the field applied is increased. The dependences of ε and tan δ on the field strength, and the hysteresis loop, both have the same characteristics as those of ferroelectrics, but the characteristic jumps of ε associated with phase transitions do not occur. This fact supports the suggestion that the nonlinear properties may be caused by relaxation polarization, but low-temperature minima of the coefficient of linear expansion are indicative of phase transitions from the paraelectric into

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Nonlinear properties and phase...

the ferroelectric state at low temperatures. There are 7 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moskva
(Physics Institute imeni P. N. Lebedev AS USSR, Moscow)

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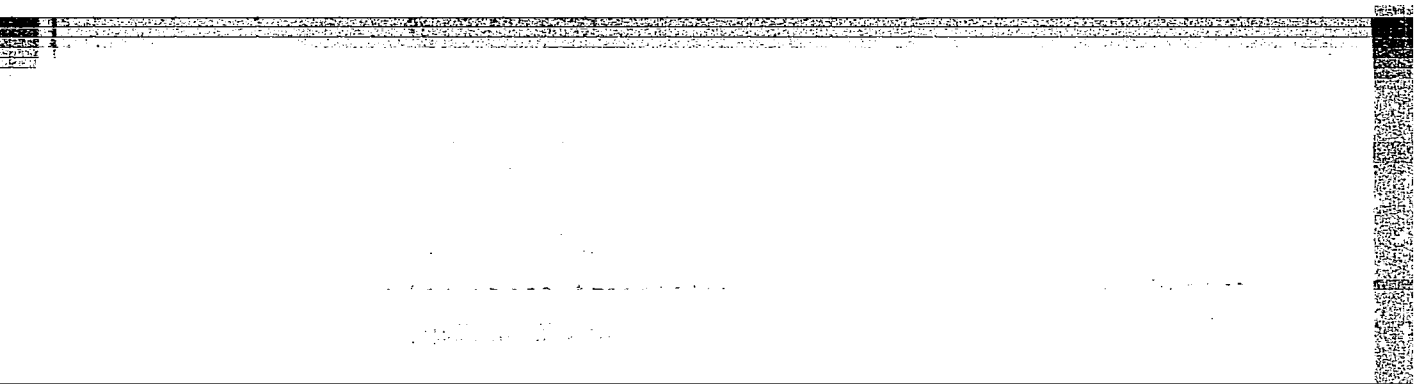
Card 2/2

GUBKIN, A.N.; KASHTANOVA, A.M.

Electrode polarization in some metal bismuthates. Zhur. fiz. khim. 37 no.5:1138-1140 My '63. (MIRA 17:1)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.



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TOPIC TAGS: single crystal, phase transition, x ray diffraction,

in this region. The crystals were grown by the Verneuil technique.

completely disappeared and the double refraction began to rise rapid-