"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, K.V.; FEDOROVA, Ye.F.

Development of the Volga Valley's productive forces in the sixth five-year plan. Izv. AN SSSR Ser. geog. no.2:80-93 Mr-Ap '57. (MIRA 10:12)

1. Institut geografii AN SSSR.
(Volga Valley--Economic policy)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

Dolgopolov, K.V.

DOLGOPOLOV, K.V.; PEL'T, N.N.; FEL'DMAN, Ya.I.

Survey of scientific reports at the coordination conference. Izv. AN SSSR, Ser. geog. no.5:29-37 S-O '57. (MIRA 11:2)
(Natural resources)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, K.V.

AUTHORS: Dolgopolov, K.V.
Fedorova, Ye.F.

26-10-8/44

TITLE: On the Banks of the Great Russian River (Na beregakh velikoy Russkoy reki)

PERIODICAL: Priroda, October 1957, No 10, pp 63-72 (USSR)

V.46

ABSTRACT: The Volga river flows through the major part of the European USSR. The region along the Volga was formerly only known as Russia's traditional granary. During the Communist regime it has become an important agricultural center and is now one of the largest producers of grain and meat. This was achieved by systematic cultivation of the entire black soil area and by putting under cultivation vast regions of virgin soil. The Volga region is now also known for its metal industry, especially concentrating on the production of combine harvesters, cars, tractors, oil drilling equipment and cranes. It produces more than 7% of the entire output of the Soviet machine-building industry. Since the water power resources of the Volga are estimated at 8 million kw, the importance of the river is growing with every new electric power station. The one at Kuybyshev is nearing completion by the end of 1957 and will yield 2,100,000 kw. The Stalingrad power station

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On the Banks of the Great Russian River

26-10-8/44

will be completed in 1958 and is expected to produce 2,310,000 kw. The Volga river area is very rich in crude oil, oil shale and fuel gas deposits, common and magnesia salts, native sulfur and bitumen. The richest oil deposits are located in the eastern part of the Tartar ASSR and in the Kuybyshev area. During the sixth five-year plan period, the Volga region is expected to develop the largest oil producing industry in the USSR.

The article contains 9 photos and 2 schematic maps.

ASSOCIATION: Institute of Geography of the USSR Academy of Sciences (Institut geografii AN SSSR) Moscow

AVAILABLE: Library of Congress

Card 2/2

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

SOV-26-58-8-2/51

AUTHORS: Dolgopolov, K.V.; Sokolov, A.V.; Fedorova, Ye.F. (Moscow)

TITLE: The Utilization of Natural and By-Product Gases (Prirodnyye i poputnyye gazy - na sluzhbu narodnomu khozyaystvu)

PERIODICAL: Priroda, 1958, Nr 8, pp 13-20 (USSR)

ABSTRACT: In the USSR, the chemical industry still uses agricultural raw material on a big scale. Natural and by-product gases are used as raw materials only in small quantities. The components of natural gas, like methane, propane, butane, pentane, etc. are especially useful for many syntheses. The composition of the by-product gases depends on the composition of the crude oil and the method of processing. The content of methane in these gases varies from 30 - 40%, ethane from 9 - 13%, ethylene from 4 - 23%, etc. In the light cracking of 1 ton of oil, 40 kg of gas are produced, in thermal cracking 200 kg, etc. The hydrocarbons of the methane gases are especially useful for synthetic purposes. They are decomposed by pyrolysis, i.e. by the action of high temperatures, to form acetylene which is the raw material for synthetic rubber, or acetaldehyde for the production of acetic acid, etc. A gas mixture of hydrogen and carbon is used in the synthesis of

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

ammonia, synthetic gasoline, methanol, etc. The oxidation of the mentioned hydrocarbons produces methyl alcohol which is the raw material for plastics, tannins, and other products. Carbon black is made by the incomplete burning of natural gases. It is used in the rubber industry for increasing the mechanical resistance of rubber products. From 1 m^3 of gas 95 g of black is obtained. Synthetic products now have mechanical properties which are better than those of natural products. The prime cost is often lower than that of present products. Nitrogen fertilizer made from natural gas is 40% cheaper than that made by the coking of coal. Artificial silk threads have a resistance to breaking which is 4.2 times that of natural silk, whereas the resistance of steel threads is only 3.68 times that of natural silk. Chassis of motor-cars, the hulls of small boats, etc are now made of plastics. Prospecting for natural gas in the USSR is being developed on a big scale. In the last 5 - 6 years 75% of the present reserves of gas were discovered. In the 5th Five-Year Plan, 1,250 km of prospecting holes were drilled. In the years 1959 - 1965 the drilling of 15,000 km is planned. The regions of the Northern Caucasus and the Ukraine are especially rich in natural gas. One of the richest gas regions of the

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USSR is Stavropol' from where the gas is delivered by pipeline to Moscow. In the Ukraine very productive regions are near Dashava, which supplies Kiyev, Moscow, etc, and Shebelinka, supplying Khar'kov, Dnepropetrovsk, etc. Rich deposits are also found in the Volga region. The gas of Azerbaydzhan is 94% methane. Last year, the deposits of Karadag and Kyanizadag were discovered. In the Komi ASSR, deposits have been discovered near Ukhta, Voy-Vozhsk, Dzhebol, etc. In Central Asia the rich deposit near Bukhara is being prospected. It will supply Tashkent and Samarkand by a pipeline. In Siberia deposits were discovered in the lowlands of the Ob' river near Berezovo, of the Lena-Vilyuy with one gusher having a daily output of 1 million m^3, in the Lena-Baykal region, etc. The production of by-product gases is especially high in the Volga region. Every ton of oil produced in Bashkiria and the Volga region contains 100 - 200 m^3 of by-product gas. In 1958, in the oil fields of the USSR alone, 9 billion m^3 of by-product gases will be produced. These gases are often burned or escape into the atmosphere. Gas reservoirs or devices for catching the gas are lacking. Many cities have no urban gas pipelines to use the natural gas. Voronezh was connected with a branch of the gas pipe-

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line Stavropol' - Moscow but could make use of the gas only half a year later because there were no pipelines within the city. A plant for the processing of these gases is being built near the Stalingrad refinery. The USSR is in the use of these gases and the products made from them, behind several other countries. In the production of artificial fibers, the USSR occupies 6th place, and in the production of plastics, 5th. By the end of 1965, it is planned to increase the production of synthetic fibers 4.6 times, plastics and synthetic resins 8 times, synthetic rubber 3.4 times, over 1957 figures. The network of gas pipelines is to be united and new pipelines are to be built.
There are 6 photos and 1 map.

1. Natural gas--Applications 2. Natural gas--Production 3. Gases --Sources 4. Gases--Applications 5. Waste gases--Disposal

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

3(5) SOV/10-59-2-5/29

AUTHOR: Dolgopolov, K.V.

TITLE: Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 2, pp 50-57 (USSR)

ABSTRACT: The author gives a survey of the development and present state of the economy of the Central-Black Earth oblasts of the RSFSR connected with considerations and suggestions for the further development of these areas. With regard to the latter, the author thinks that the areas considered as a whole, under the assumption of a common power base and common utilization of the local raw material, labor and other resources, can well constitute a territorial-economic complex, in which industrial branches specialized on an All-Union level will be well connected with branches furthering their de-

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Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

velopment as well as local consumption. The Black-Earth center does not dispose of its own fuel and hydrotechnical resources. On the basis of this a powerful energy base could be established. The electrification problem should be resolved not only by uniting the economy of the areas to the Cherepetskaya GRES (Cherepet' GRES) and the power line Stalingrad-Moscow, but also by the construction of an atomic power plant. The author also considers the Donbass surplus production of culm, (Low-grade anthracite), for the utilisation of which a number of thermal power stations are under construction or planned. The construction of power lines conveying energy from these plants to the district would further contribute to the solution of the power problem. Another capital problem is the rational utilisation of local raw materials.

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SOV/10-59-2-5/29

Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

The lack of combustible materials is richly compensated for by the presence of iron ore and minerals useful in the construction of building materials. At present the iron ore reserves of the Kursk Magnetic Anomaly are estimated at 50 billion tons, about 15 billion tons of which can be considered as ore with a high iron content. The basic mass of prospected ore lies on the territory of the Belgorod Oblast' (Belgorod and Staryy Oskol iron ore districts). To the share of the Kursk Oblast', where up to now only the Mikhaylovskoye mestorozhdeniye (Mikhaylovka formation) was carefully examined, go more than 500 million tons of rich ore and more than 9 billion tons of iron quartzites . The Mikhaylovskoye and Lebedinskoye (Lebedin formations near Staryy Oskol) will yield (Open mining method) the first ore in 1960. In 1965 the ore production of these mines can exceed

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Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

20 million tons per year. The ore of the prospected Yakovlevskoye and Gostishchevskoye formations ("Yakovlevskoye i Gostishchevskoye mestorozhdeniya") near Belgorod lies at a depth of more than 500 m. In view of unfavorable hydrogeological conditions, the construction of large mechanized shafts is planned, with the aid of which an annual output of 20 million tons of iron ore (60% iron) and more could be obtained. In this way the Central-Black Earth areas will be able to produce some dozens of millions of tons of highly qualified iron ore in the near future. The ore of the Kursk Magnetic Anomaly will be needed mainly by the Novolipetskiy zavod (Novolipetskiy Plant) and the Novotul'skiy zavod (Novotul'skiy Plant), where the full cycle of metallurgical production is being developed. The transformation of the Black Earth center into one of the

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SOV/10-59-3-5/29

Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

most important Soviet iron ore districts requires, of course, the enlargement of its ferrous metallurgy. Up to now it has been represented by the two metallurgical plants of Lipetsk. One of these, the "Svobodnyy Sokol", is enlarging the production of cast iron and cast iron pipes, and the other, the above-mentioned Novolipetskiy plant, is adopting the production of open-hearth and transformer steel, electric steel and cold-rolled sheets. The development of the Lipetsk metallurgy (reconstruction of existing and construction of new blast furnaces) will initially require all the iron ore extracted in the mines of the Kursk Magnetic Anomaly. As to the construction of new metallurgical plants, the Kursk and Belgorod sovnarkhozes have advanced proposals for two plants to be located near L'gov and Novyy Oskol respectively. The proposals, however, show deficiencies, and the projects remain undecided as yet. Ore mining and

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SOV/20-59-2-5/29

Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

ferrous metallurgy are connected with the further development of the machine building industry. According to the author, machine building in the Black Earth center should be more closely tied to the general economic development of these areas. Drilling equipment is produced in Shchigry, rock excavators and concentration plant equipment in Voronezh, ferrous metallurgy equipment in Uman', electric and radio apparatus in Voronezh, Kursk etc., road construction and building machines in Voronezh and Orel. Agricultural machine building, however, is weakly developed, though the Black-Earth center needs these products more than anything else. With the exception of grain threshers this branch of machine building does not produce much. In connection with the growth of sugar beet cultivation in these areas, the production of the needed equipment should be emphasized. The author further criticizes the type of

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SOV/10-59-2-5/29

Ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

produced tractors (NDP-35) as inadequate to the needs of local agriculture. He thinks that LTZ has to pass quickly to the production of wheeled and small-sized caterpillar tractors of a capacity of 30-35 HP (for sowing and harvesting technical crops). The chemistry of organic synthesis developed in the Black Earth center (Voronezh) on the basis of food raw material. It became a basis of rubber production. During the Seven-Year-Plan, after the completion of the second and third section of the gas pipe lines North Caucasus - Moscow and the gas pipe line Shebelinka-Bryansk, the industry of organic synthesis, will be able to dispense with food raw materials. It will adopt the production of rubber (Voronezh), detergents (Shebekino) and synthetic fibers. The production of building materials is still rather undeveloped. The only Cement plants are in Belgorod and Podgornoye (Voronezh Oblast').

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ways of Developing the Economy of the Central-Black Earth Oblasts of the RSFSR

While the Podgornoye plant is an enterprise of average capacity, the Belgorod plant, already uses five rotary furnaces, which number shall be increased to seven. Equipment for new cement plants could be supplied by the Pervomayskiy mekhanicheskiy zavod (Pervomayskiy Mechanical Plant) in the Tambov Oblast'. In accordance with the growth of sugar beet cultivation (Orel, Lipetsk and Tambov Oblasts), new sugar plants are being built, most of them in the mentioned oblasts (3-4 in each). Together with the Ukrainian SSR, the Central-Black Earth areas will be the chief sugar supplier in the Soviet Union.

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(Institute of Geography of the AS USSR)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

GERASIMOV, I.P.; ARMAND, D.L.; DAVITAYA, F.F.; DOLGOPOLOV, K.V.; SIL'VESTROV, S.I.

Scientifically based agricultural management in the U.S.S.R. and tasks in Soviet geography. Izv. AN SSSR, Ser. geog. no.5:3-10 S-O '60. (MIRA 13:10)

1. Institut geografii AN SSSR.
(Agricultural geography)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, Konstantin Vasil'yevich; FEDOROVA, Ye.F.; MIRONOV, B.P.; ANISHCHENKO, K.A.; POKSHINSEVSKIY, V.V., otv. red.; LYUBIMOV, I.M., red.; KONOVALNUK, I.K., mladshiy red.; KISELEVA, Z.A., red. kart; VILENSKAYA, E.N., tekhn. red.

[Central Black Earth Region; economic and geographical characteristics] TSentral'no-chernozemnyi raion; ekonomiko-geograficheskaia kharakteristika. Moskva, Gos. izd-vo geogr. lit-ry, 1961. 414 p. (MIRA 14:10)
(Central Black Earth Region—Geography, Economic)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, Konstantin Vasil'yevich; SOKOLOV, Aleksey Vasil'yevich; FEDOROVA, Yevgeniya Fedorovna; SKOBNIKOV, M.L., retsenzent; TYLKINA, M.A., st. nauchn. sotr., retsenzent; FREYKIN, Z.G., st. nauchn. sotr., retsenzent; RODIONOVA, F.A., red.; PASHCHENKO, O.V., red. kart; KARPOVA, T.V., tekhn. red.

[Iron ores of the U.S.S.R.] Zheleznye rudy SSSR; posobie dlia uchitelia. Moskva, Uchpedgiz, 1963. 157 p. (MIRA 17:2)

1. Glavnyy spetsialist Gosplana SSSR (for Skobnikov).
2. Institut chernoy metallurgii imeni Baykova (for Tylkina).
3. Institut geografii AN SSSR (for Freykin).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, K.V., otv. red.; MINTS, A.A., otv. red.; POKSHISHEVSKIY, V.V., red.

[Geographical problems of developing the important economic regions of the U.S.S.R] Geograficheskie problemy razvitiia krupnykh ekonomicheskikh raionov SSSR. Moskva, Mysl', 1964. 517 p. (MIRA 17:10)

1. Akademiya nauk SSSR. Institut geografii.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, Mikhail Ivanovich; TRUYNEVTSEVA, M.F., redaktor; KOZLOVSKAYA, M.D., tekhnicheskiy redaktor

[Principles of crop cultivation; manual for students in class 8 of the rural secondary school] Osnovy agrotekhniki; uchebnoe posobie dlia uchashchikhsia VIII klassa sel'skoy srednei shkoly. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR. Pt. 1. [General agriculture] Obshchee zemledelie. 1956. 190 p. (Field crops) (MLRA 9:10)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

KATALYMOV, M.V., otv.red.; KOROLEV, L.I., red.; SOKOLOV, A.V., red.; TURCHIN, F.V., red.; UNANYANTS, T.P., red.; DOLGOPOLOV, M.I., red.; GRIGOR'YEVA, A.I., red.; HALLOD, A.I., tekhn.red.

[Manual on mineral fertilizers; theoretical and practical aspects of their use] Spravochnik po mineral'nym udobreniiam; teoriia i praktika primeneniia. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1960. 551 p. (MIRA 14:1)
(Fertilizers and manures)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.

Separation factor. Znan.sila 35 no.3:42-43 Mr '60. (MIRA 13:6)
(Separators(Machines))
(Ultrasonic waves--Industrial applications)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.

Manufacturing trusses with a span of 24m. Na stroi. Ros. 3 no.5:28 My '62. (MIRA 15:9)

1. Glavnyy inzh. zavoda zhelezobetonnykh izdeliy tresta Magnitostroy.
(Trusses)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N. Font

AUTHOR: Dolgopolov Nifont 4-6-6/30

TITLE: Antarctica Today (Antarktida segodnya)

PERIODICAL: Znaniye - Sila, 1957, Nr 6, p. 8 (USSR)

ABSTRACT: The article deals with I.P.Ruban, a Soviet painter, who is participating in arctic and antarctic expeditions, concentrating his work on the painting of polar landscapes.

After ten years in the Arctic, Ruban went to the Antarctic in 1955-56 where he carries on his work.

There is one photograph and seven sketches.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.G

AID P - 2118

Subject : USSR/Engineering

Card 1/1 Pub. 35 - 7/20

Author : Goryunov, B. F. and Dolgopolov, N. G.

Title : Standard pre-assembled reinforced concrete piles

Periodical: Gidr. stroi., no.3, 22-23, 1955

Abstract : Research on reinforced concrete piles 20 to 25 m long with 6 different types of members is described. Tests made on bending are described. Possible savings of steel by using standard materials and dimensions and type of joints are stressed and a table is given. Three diagrams.

Institution: None

Submitted : No date

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

GORYUNOV, B.F., kandidat tekhnicheskikh nauk; DOLGOPOLOV, N.G., kandidat tekhnicheskikh nauk.

Reinforced concrete piles made of precast elements. Bet.i zhel.-bet. no.3:91-95 Mr '56. (Concrete piling) (MLRA 9:7)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.G., kandidat tekhnicheskikh nauk.

Reinforced concrete slab-envelopes for marine hydraulic structures. Gidr. stroi. 26 no.4:13-15 Ap '57. (MIRA 10:6)
(Hydraulic engineering) (Reinforced concrete construction)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N., kand.tekhn.nauk

Specialists increase their knowledge. NTO 2 no.2:51 F '60. (MIRA 13:5)

1. Chlen oblastnogo soveta Nauchno-tekhnicheskogo obshchestva stroitel'noy industrii, Leningrad.
(Leningrad--building research)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

CHUDESOV, I.D.; BORISOV, A.M.; ZAYTSEVA, S.I.; DOLGOPOLOV, N.L.; KRAVTSOV, Yu.I.; VOLK, P.I.

[Technology of the repair of tires of motor vehicles, tractors and agricultural machinery] Tekhnologiia remonta shin avtomobilei, traktorov i sel'skokhoziaistvennykh mashin. Moskva, 1963. 200 p. (MIRA 18:5)

1. Perovo. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy tekhnologicheskiy institut remonta i ekspluatatsii mashinno-traktornogo parka.

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CA

DOLGOPOLOV, N.N.

Products of the reaction between ethylene oxide and ethyl alcohol. N. N. Dolgopolov, N. N. Mel'nikov, and S. S. Nametkin. *J. Applied Chem.* (U.S.S.R.) [illegible] (1947) (in Russian). — (1) The yields of Cellosolve, $EtOCH_2CH_2OH$ (I), Carbitol, $EtOCH_2CH_2OCH_2CH_2OH$ (II), and polyglycols (III) were detd. in the reaction between $(CH_2)_2O$ and EtOH in an autoclave, 4–24 hrs. at lower temps., 1–4 hrs. at higher temps. With 1% H_2SO_4 as catalyst, only I was formed below 85° (85 and 54% at 20–25° and 48–50°, resp.); above 200°, the products are charred or resinifi d; between 160° and 180°, the yields of I, II, and III are 18, 17, and 30%, resp.; the optimum temp. range is 100–30°, with the yields 40, 29, and 20%, I + II 70%, total yield 98%. At the const. temp. [illegible] 30°, [illegible] g. $(CH_2)_2O$, 91 g. EtOH, the yields in 1, 2, 3, and 4 hrs. were: 40, 17, and 11; 40, 27, and 22; 42, 27, and 14; 42, 29, and 23%; the optimum length of reaction is 4–6 hrs. At 120°, increase of the molar ratio EtOH: $(CH_2)_2O$ from 1:1 to 6:1 has little effect on II but increases I (from 21 to 53%) and somewhat decreases III (from 25 to 6%); the optimum lies between 2:1 and 3:1. At 110–30°, 1–3 hrs., the optimum amt. of H_2SO_4 proved to be 0.5–1.5 g. per 77 g. $(CH_2)_2O$, further increase being without beneficial effect. Still at the const. temp. 120–30°, 2.5–3 hrs., catalysts other than H_2SO_4 proved as effective: $C_6H_4Me_2$ 3% (of the wt. of EtOH), Me_2SO_4 3%, NMe_3 11%, $MeC_6H_4SO_3H$ 2.5%. (2) I and II are in part converted into one another by heating with H_2SO_4, e.g.: 60 g. I with 1 g. H_2SO_4 at 130°, 3 hrs., gave EtOH [illegible] g., II 4 g., esters of III [illegible] g., unreacted 36 g.; 50 g. II in 8 g. EtOH, 1 g. H_2SO_4, at 105°, 5 hrs., gave EtOH 6 g., I 4 g., esters of III 10 g., unchanged 36 g. (3) I + $(CH_2)_2O$ at 120–30°, molar ratio 1:1.1 to 1:1.3, with H_2SO_4, $KHSO_4$, or Me_2SO_4 as catalysts, gave at most 70% II + III; at least 30% of the initial I remains unreacted. — N. Thon

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BUR'YAN, Yu.L.; BYKHNSKIY, M.G.; DOLGOPOLOV, N.N.; EPSHTEYN, G.M.; YERMAN, B.I.

Gelatin extraction. Patent U.S.S.R. 77,271, Dec.31, 1949.
(CA 47 no.19:10262 '53)

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Changes of the electric characteristics of coal in thermal and in dielectric heating. Yu. L. Sevsat'yanov, N. N. Dolgopolov, Yu. L. Bur'yan, and V. S. Margolin (Moscow Chapter, Mendeleev Chem. Soc.). *Doklady Akad. Nauk S.S.S.R.* 74, 755-7(1950).—Heating of finely ground (grain size <0.3 mm.) gas coal with the aid of a burner causes a progressive fall of the elec. resistance R, from about 100 megohm between 20 and 240°, still over 10 megohms at 340°, to about 1 megohm at 400°. In heating with a high-frequency field, the coal becomes conducting at 240-70°, its R falls to a few ohms, and is as low as 1 ohm at 400°. The dielec. loss angle tg δ increases on heating with a burner up to 100°, then decreases, and increases again from 300° up; the dielec. const. increases from about 1.5 to 2.5 up to 100°, then decreases asymptotically to 1.5. In heating with a burner, the change of R with the temp. t between 350 and 450° is representable by $\log R = -0.011\,t + 11$; in heating with high-frequency, between 250 and 450°, $\log R = -0.00366\,t + 1.60$, and, between 250 and 500°, $\log \text{tg}\,\delta = 0.0032\,t + 1.35$. Heating with a flame and heating with high-frequency evidently involve entirely different mechanisms.

N. Thon

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PROCESSES AND PROPERTIES INDEX

E

F

PYROLYSIS OF COAL THROUGH ACTION OF HIGH FREQUENCY CURRENTKa

Karavaev, N., Sevast'yanov, Yu. L., Dolgopolov, N.N. and Bur'yan, Yu. L. (Doklady Akad. Nauk SSSR (Rep. Acad. Sci. USSR), 11 Apr. 1951, vol. 77, (5), 871-874). Pyrolysis was carried out in the laboratory under conditions of dry distillation, entirely by dielectric heating, i. e., with no heat coming from outside, in the temperature range 10° to 1000°C. Particular attention was paid to the low temperature carbonisation range, 480 to 570°C. Quantities and composition of semicoke, tar and gas produced differed from those obtained when coal is heated in the usual way. Further study is intended. (L)

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

11228* **Humates of Peat and Coal—Stimulant to Plant Growth.** (Russian.) N. N. Dolgopolov and E. L. Ruban. *Priroda*, v. 41, Mar. 1952, p. 102-104.

Discusses the effect of peat, peat extracts, and humates extracted from coal on the growth of roots of bean sprouts.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

31

13995* The Action of Ultrasonic Vibrations on the Early Phases of Plant Growth. (Russian.) E. I. Rubin and N. N. Dolgopolov. *Doklady Akademii Nauk SSSR*, new ser., v. 84, May 21, 1952, p. 623-626.

Bean, cereal, and olive seeds were subjected to ultrasonic vibrations. Chemical changes and growth characteristics were observed. Data are tabulated.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

N.N.

SSR

The effect of ultrasonic vibrations on heterogeneous processes in the diffusion range. N. N. Dolgopolov, V. M. Frishman, and N. M. Karavaev. *Doklady Akad. Nauk S.S.S.R.* 93, 94-5(1953).—The effects of ultrasound were studied on the soln. rate of single-crystal specimens of $K_3Fe(CN)_6$ with no stirring, with stirring at 300 to 1500 r.p.m., and under the influence of supersonic vibrations of 1200 kc. frequency with an 8 v./sq. cm. current. The rate of soln. const. varied between 0.048 cm./min. with the soln. at rest, through 0.094-0.2-3 cm./min. with stirring at the speeds indicated, and to 0.347 with ultrasound. The const. for a Cu plate in 7.5% HNO_3, with 6.9% $NaNO_3$ as catalyst, and 3% H_2O_2 to prevent gas-formation (conditions under which Cu dissolves by a diffusion process) varied at 300-1200 r.p.m. between 0.0104 and 0.0332, whereas under the action of ultrasound it was equal to 0.0435 cm./min.

W. M. Sternberg

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5

The effects of ultrasonic vibrations on diffusional processes. N. N. Dolgopolov, V. M. Fridman, and N. M. Karavaev. *Doklady Akad. Nauk S.S.S.R.* 93, 305-6 (1953).—The effect of ultrasound on the diffusion rate was studied for the diffusion of $CuSO_4$ in 5% gelatin, and the results were compared with results obtained with varying hydrodynamic conditions (using mixers at various r.p.m.); also the diffusion of $Na_2S_2O_3$ through a swollen gelatin film 0.015 cm. thick was studied. A higher stirring rate increased the diffusion rate, but less than did ultrasonic vibrations. The diffusion rate consts. rose from 0.81×10^{-4} with no stirring in the first test to $(1.8) \times 10^{-4}$ with ultrasound, and in the 2nd test from 2.6×10^{-4} to 11.7×10^{-4}; this shows that ultrasonic vibrations change the value and the nature of diffusional resistance at the solid-liquid interface.

W. M. Sternberg

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N. N.

BERLINER, M.A.; DOLGOPOLOV, N.N.; KOVDA, V.A., redaktor; YEGOROV, N.G., redaktor; ASTAF'EVA, G.A., tekhnicheskiy redaktor

[Electrometric determination of the salt content of soil, subsoil and underground waters] Elektrometricheskoe opredelenie solesoderzhaniia pochv, gruntov i gruntovykh vod. Moskva, Izd-vo Akademii nauk SSSR, 1954. 81 p. (MLRA 7:8)

1. Chlen-korrespondent Akademii nauk SSSR (for Kovda)
(Salts, Soluble) (Soils--Analysis)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

FRIDMAN, V.M., kandidat tekhnicheskikh nauk; ZAYDES, A.L., kandidat tekhnicheskikh nauk; DOLGOPOLOV, N.N., kandidat tekhnicheskikh nauk; MIKHAYLOV, A.N., doktor tekhnicheskikh nauk.

Use of ultrasonic waves for accelerating the processes of leather production. Leg.prom.14 no.2:43-44 F '54. (MLRA '4:5)
(Leather industry)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

GARLINSKAYA, Ye.I.; BEZZUBOV, A.D.; DAMASKINA, G.B., redaktor; DOLGOPOLOV, N.N., kandidat tekhnicheskikh nauk, redaktor; BABAT, G.I., professor, doktor tekhnicheskikh nauk, retsenzent; KISLINA, Ye.I., tekhnicheskiy redaktor

[Supersonic waves and methods of using them in the food industry] Ul'trazvuk i puti ego primeneniia v pishchevoi promyshlennosti. Moskva, Pishchepromizdat, 1955. 94 p. (MIRA 9:3)
(Supersonic waves)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

FROST, Andrey Vladimirovich, professor; DOLGOPOLOV, N.N., sostavitel'; TOPCHIYEVA, K.V., doktor khimicheskikh nauk, otvetstvennyy redaktor; GERASIMOV, Ya.I., redaktor; KOROBOV, V.V., kandidat khimicheskikh nauk, redaktor; SMIRNOVA, I.V., kandidat khimicheskikh nauk, redaktor; TETEVSKIY, V.M., doktor khimicheskikh nauk, redaktor; TILICHEYEV, M.D. doktor tekhnicheskikh nauk, redaktor; SHCHEKIN, V.V., redaktor izdatel'stva; ZHLENKOVA, Ye.V., tekhnicheskiy redaktor

[Papers on kinetics and catalysis] Trudy po kinetike i katalizu. Moskva, Izd-vo Akademii nauk SSSR, 1956. 538 p. (MLRA 9:7)

1. Chlen-korrespondent AN SSSR (for Gerasimov)
(Catalysis) (Hydrocarbons) (Chemical reaction)

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15-57-4-5505

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, p 196 (USSR)

AUTHOR: Dolgopolov, N. N.

TITLE: Supersonic Drilling (Ul'trazvukovoye bureniye)

PERIODICAL: Novosti neft. tekhn. Neftepromysl. delo, 1956, Nr 7, pp 21-22

ABSTRACT: Supersonic methods of destruction of rock are based on use of a very high vibrator frequency (1 200 000 to 6 000 000 vibrations per min) and a shattering action of vibrations. The shattering action results from the formation of gas pockets at the bottom of the hole and from subsequent collapse of these pockets under extremely high local pressures. The rock in the process of destruction first undergoes compression as a result of the formation of the gas pockets, and then expansion at the moment the pockets

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begin to collapse. Rates of application of external load should be increased as far as possible in order to decrease the volume of work expended to create plastic and elastic deformations of the rocks in drilling. The rate of application of the load may be extremely high and may reach the rate of travel of sound waves in the drilling liquid (1500 m/sec). The supersonic method of drilling hard materials was tested under laboratory conditions to produce shaped holes in ceramics, glass, precious stones, and electric materials which do not conduct electricity. Further study of the mechanics involved in supersonic destruction of rock will make it possible to design entirely new types of high-production drills.

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DOLGOPOLOV, N., kandidat tekhnicheskikh nauk,

Underground echo. Zhur.sila 31 no.9:33 S '56. (MLRA 9:10)
(Oilwell drilling) (Sounding and soundings) (Ultrasonic waves)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.N., kandidat tekhnicheskikh nauk.

Toward the North Pole at any cost. Znan.sila 31 no.10:10-11 O '56. (MLRA 9:11)

(Arctic regions--Ice-breaking vessels)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.

Sound spectrum. Znan.sila.31 no.12:42-43 D '56. (MLRA 10:1)
(Sound)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.N., kandidat tekhnicheskikh nauk.

Acoustics and the petroleum industry. Neftianik 2 no.4:19-24 Ap '57.
(Prospecting--Geophysical methods) (MLRA 10:5)
(Oil well drilling--Equipment and supplies)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N. [redacted]

Future of globe lightning. Znan. sila 32 no.3:17-19 Mr '57.
(Lightning) (Nuclear reactions) (MIRA 10:6)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.

The rocks give way. Znan.sila 33 no.12:22-23 D '58. (MIRA 11:12)
(Boring)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.N., kand.tekhn.nauk

Modern physics and the building materials industry. Stroi. mat. 7 no.10:37-3 of cover O '61. (MIRA 14:10)
(Building materials industry)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, Nifont Nikolayevich; GUZMAN, M.A., red. izd-va; KASIMOV, D.Ya., tekhn. red.

[Methods of ultrasonic chemistry used in building materials technology] Zvukokhimicheskie metody v tekhnologii stroitel'nykh materialov. Moskva, Gosstroiizdat, 1962. 138 p. (MIRA 15:7)

(Ultrasonic waves—Industrial applications)
(Building materials)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

BUT, T.S.; VINOGRADOV, B.N.; GAVRILOVA, T.I.; GORSHKOV, V.S.; DOLGOPOLOV, N.N.; MYAGKOVA, M.A.; SIROTKINA, N.L.; FADEYEVA, V.S., doktor tekhn. nauk, red.; GURVICH, E.A., red. izd-va; GOL'BERG, T.M., tekhn. red.

[Modern methods of studying building materials]Sovremennye metody issledovaniia stroitel'nykh materialov [By] T.S.But i dr. Pod obshchei red. V.S.Fadeevoi. Moskva, Gosstroiizdat, 1962. 238 p. (MIRA 16:1)

(Building materials)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, Nifont Nikolayevich; ZAYCHIKOVA, E.A., red.

[Electrophysical methods in the technology of building materials] Elektrofizicheskie metody v tekhnologii stroitel'nykh materialov. Moskva, Stroiizdat, 1964. 310 p. (MIRA 17:8)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

PUSTOVALOV, L.V., otv. red.; AL'TGAUZEN, M.N., doktor geol.-min. nauk, red.; DOLGOPOLOV, N.N., red.; IVENSEN, Yu.P., doktor geol.-min. nauk, red.; VLASOV, K.A., doktor geol.-min. nauk, red.; POZHARITSKIY, K.L., doktor geol.-min, nauk, red.; SERDYUCHENKO, D.P., doktor geol.-min. nauk, red.

[Metals in sedimentary formations; ferrous metals, non-ferrous light metals] Metally v osadochnykh tolshchakh; chernye metally, tsvetnye legkie metally. Moskva, Izd-vo "Nauka," 1964. 443 p. (MIRA 17:8)

1. Akademiya nauk SSSR. Laboratoriya osadochnykh poleznykh iskopayemykh. 2. Chlen-korrespondent AN SSSR (for Pustovalov, Vlasov).

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SIMONYAN, S.G.; DOLGOPOLOV, N.N.

Automatic weighing of test pieces during drying. Zav. lab. 31 no.2: 252 '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

PAVLOV, Aleksey Petrovich, akademik [deceased]; VARSANOFIYEVA, V.A., glav. red.; MENNER, V.V., otv. red.; YANSHIN, A.L., akademik, red.; GERASIMOV, N.A., red.; DOLGOPOLOV, N.N., red.; MIKHAYLOV, N.P., red.; PUSHCHAROVSKIY, Yu.M., red.; SHANTSER, Ye.V., red.

[Comparative stratigraphy of the Boreal Mesozoic of Europe] Sravnitel'naia stratigrafiia boreal'nogo mezozoia Evropy. Moskva, Nauka, 1965. 294 p. (MIRA 18:11)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

DOLGOPOLOV, N.N.; SIMONYAN, S.G.

Measuring the surface temperature of materials in high-frequency and acoustical drying. Zav. lab. 31 no.9:1114-1115 '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

PUSTOVALOV, L.V., otv. red.; AL'TGAUZEN, M.N., doktor geol.-min. nauk, red.; VLASOV, K.A., red.[deceased]; DOLGOPOLOV, N.N., red.; IVENSEN, Yu.P., doktor geol.-min.nauk, red.; POZHARITSKIY, K.L., doktor geol.-min. nauk, red.; SERDYUCHENKO, D.P., doktor geol.-min. nauk, red.; KRASNOVA, N.E., red.

[Metals in sedimentary formations; heavy nonferrous, minor and rare metals] Metally v osadochnykh tolshchakh; tiazhelye tsvetnye metally malye i redkie metally. Moskva, Nauka, 1965. 389 p. (MIRA 19:1)

1. Moscow. Laboratoriya osadochnykh poleznykh iskopayemykh.

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L 29851-66 EWP(e)/EWT(m)/EWP(t)/EWP(k)/ETI IJP(c) JD/WH

ACC NR: AP6012685 (A) SOURCE CODE: UR/0170/66/010/004/0542/0544

57
B

AUTHOR: Simonyan, S. G.; Dolgopolov, N. N.

ORG: All-Union Institute for New Construction Materials, Moscow (Vsesoyuznyy institut novykh stroitel'nykh materialov)

TITLE: Combined acoustical and high frequency drying of capillary-porous materials

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 4, 1966, 542-544

TOPIC TAGS: drying, high frequency, acoustic effect, thermocouple, HF vibration

ABSTRACT: The experimental apparatus (diagram shown) consists basically of a gas jet heater, a chamber, and a modernized high frequency generator. The capillary-porous material investigated was a cylindrical plastic plate with a diameter of 110 mm and a thickness of 24 mm, and a moisture content of 0.28 kg/kg. Thermocouples were inserted into the sample to a depth of 40 mm. Measurements were made of the weight loss and the temperature in three layers of the sample. The parameters of the acoustical field were a sound pressure of 168 decibels and a frequency of 7 kilocycles. The high frequency generator had a voltage on the electrodes of 0.6 kilovolts at a frequency of

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ACC NR: AP6012685

40.68 megacycles. Combined drying was carried out under exactly the same conditions. Experiments carried out under different drying methods show that the combined method makes it possible to increase the drying rate by 30-90% compared with the acoustical method and by 60-30% compared with the high frequency method. Orig. art. has: 2 figures and 1 table.

SUB CODE: 11, 20/ SUBM DATE: 19May65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410810018-8

ACC NR: AT7006784 (A) SOURCE CODE: UR/3236/65/002/000/0074/0080

AUTHORS: Dolgopolov, N. N. (Candidate of technical sciences); Polak, L. S. (Doctor of physico-mathematical sciences); Fridman, V. I. (Engineer); Vurzel', F. B. (Engineer); Maksimov, A. I. (Engineer)

ORG: none

TITLE: High-frequency electrodeless discharge and the possibilities of its application in the production of polymeric materials

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov. Sbornik trudov, no. 2(10), 1965. Elektrofizicheskiye metody issledovaniya stroitel'nykh materialov (Electrophysical methods of investigating building materials), 74-80

TOPIC TAGS: silicon compound, silicon dioxide, gas discharge, electric discharge

ABSTRACT: A high-frequency electrodeless discharge burner is described. The burner design is similar to that reported by A. V. Donskoy and S. V. Dresvin (Zh. Elektrotermiya, No. 5, 37, 1963). A schematic of the apparatus is presented. The temperature distribution in the flame was determined in terms of the absolute intensities of number of argon emission lines. The experimental results are shown graphically (see Fig. 1). A scheme for the continuous production of pure silicon

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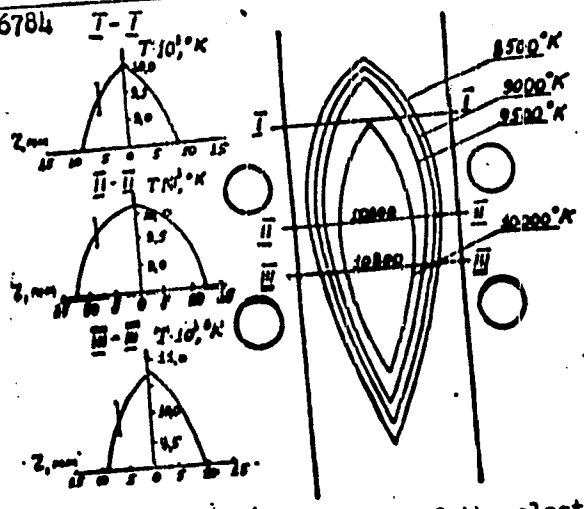

Fig. 1. Spatial distribution of temperature in an argon discharge containing additions of hydrogen

monoxide and silicon dioxide with the aid of the electrodeless burner was developed. This scheme is based on the following system of reactions:

$$SiCl_4 + O_2 \rightarrow SiO_2 + 2Cl_2,$$

$$2SiCl_4 + O_2 \rightarrow 2SiO + 4Cl_2$$

The experimental results are tabulated. It was found that the use of the electrodeless discharge method introduces a considerable simplification in the production

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of high purity silicon dioxide. Orig. art. has: 1 table, 3 graphs and 2 equations.

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Treating coals from the Sangar region (Yakutsk A.S.S.R.). N. M. Karavaev and N. N. Dolgopolov. Izvest Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk 1947, 849-52. These coals yield 12-20% light tar and 62-67% semicoke. A typical light tar consisted of a 12% nonacidic fraction b. 62-200°, a 30% fraction b. 200-300°, which was rich in phenols, and a 58% fraction b. above 300°. H. K. L.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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DOLGOPOLOV, N. N.

AFANAS'YEV, G.D., doktor geologicheskikh-mineralogicheskikh nauk, redaktor; BARSANOV, G.P., redaktor; VOROB'YEVA, O.A., redaktor; ZALESSKIY, B.V., redaktor; LAPIN, V.V., redaktor; LEBEDEV, A.P., redaktor; NALIVKIN, V.V., akademik, redaktor; PETROV, V.P., redaktor; SVETKOV, A.I., redaktor; DOLGOPOLOV, N.N., sostavitel'.

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ARKHANGEL'SKIY,A.D.; SHATSKIY,N.S., akademik, redaktor; STRAKHOV,N.M., akademik, redaktor; VARENTSOV,M.I., redaktor; ARKHANGEL'SKAYA,N.A. kandidat geologo-mineralogicheskikh nauk, redaktor; DOLGOPOLOV,N.N., redaktor; ARSEN'YEV,A.A., redaktor; AUZAN,N.P., tekhnicheskiy redaktor

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(Talysh Mountains--Geology)

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DOLGOPOLOV, N N

3(5) 15(6) PHASE I BOOK EXPLOITATION SOV/1254

Akademiya nauk SSSR. Otdeleniye geologo-geograficheskikh nauk

Boksity, ikh mineralogiya i genezis (Mineralogy and Origin of Bauxites) Moscow, Izd-vo AN SSSR, 1958. 438 p. 2,200 copies printed.

Compiler: Dolgopolov, N.N.; Chief Ed.: Strakhov, N.M., Academician; Resp. Ed.: Bushinskiy, G.I.; Ed. of Publishing House: Nosov, G.I.; Tech. Ed.: Polenova, T.P.

PURPOSE: The book is intended for scientists working in geology and associated fields, and managers of industrial and engineering concerns.

COVERAGE: This collection of articles by various authors on the mineralogy and geochemistry of bauxites appeared as a result of a 1955 conference on the origin of bauxite (Chairman, Academician N.M. Stakhov). The conference discussed the genetic theories propounded by various scientists, underlining the weakness of L.S. Berg's biochemical theory and the hydrothermal theories developed by some French scientists. The majority of Soviet geologists appear to be in accord with the sedimentary origin theory. The book discusses problems on the origin of bauxite and describes some deposits found in the USSR. Each article is accompanied by Soviet and other references, photographs, diagrams, tables and maps.

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(Mines and mineral resources)

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YANSHIN, A.L., akademik, red.; VYALOV, O.S., red.; DOLGOPOLOV, N.N., red.; MENNER, V.V., red.; ROSSOVA, S.M., red.izd-va; MAKOGONOVA, I.A., tekhn.red.

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(Russia, Southern--Geology, Stratigraphic)

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SHATSKIY, Nikolay Sergeyevich, akademik, glav. red. [deceased]; SMIRNOV, V.I., red.; SHCHERBAKOV, D.I., akademik, red.; GORSKIY, I.I., red.; DOLGOPOLOV, N.N., red.; PUSHCHAROVSKIY, Yu.M., red.; SOKOLOV, G.A., red.; TUGOLESOV, D.A., red. izd-va; KASHINA, P.S., tekhn. red.

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ANDRUSOV, Nikolay Ivanovich, akademik; SHATSKIY, N.S., akademik, glav.red. [deceased]; SHCHERBAKOV, D.I., akademik, glav. red.; DAVITASHVILI, L.Sh., akademik, otv. red.; YANSHIN, A.L., akademik, red.; BEZRUKOV, P.L., red.; DOLGOPOLOV, N.N., red.; ZENKEVICH, L.A., red.; MENNER, V.V., red.; MERKLIN, R.L., red.; NEVESSKAYA, L.A., red.; EBERZIN, A.G., red.; SHEVCHENKO, G.N., tekhn. red.

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(Geology, Stratigraphic)

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L 16068-66 EWT(1)/EWP(e)/EWT(m)/ETC(f)/EIF(n)-2/EWG(m)/T/EWP(t) IJP(c)
ACC NR: AT6004494 JD/GS/AT/WH SOURCE CODE: UR/0000/65/000/000/0223/0232

AUTHOR: Vurzel', F. B.; Dolgopolov, N. N.; Maksimov, A. I.; Polak, L. S.; Fridman, V. I.

ORG: none

TITLE: Application of high frequency electrodeless plasma generator to production of pure silicon and its oxides

SOURCE: AN SSSR. Institut neftekhimicheskogo sinteza. Kinetika i termodinamika khimicheskikh reaktsiy v nizkotemperaturnoy plazme (Kinetics and thermodynamics of chemical reactions in low-temperature plasma). Moscow, Izd-vo Nauka, 1965, 223-232

TOPIC TAGS: plasma generator, high energy plasma, plasma device, silicon, silicon dioxide, silicon carbide, plasma chemistry

ABSTRACT: The high frequency electrodeless plasma generator in chemical technology is superior to the electrode-type plasma generator since it eliminates the problem of contamination by the electrode material. The electrodeless plasma generator can handle the chemically agressive as well as nonagressive gases and it is particularly suitable for high temperature chemical processes. The typical conditions of opera-

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tion of a high frequency electrodeless plasma generator are: argon flow rate 36-51 l/min, oxygen flow rate 1.1-2.1 l/min, hydrogen flow rate 1.2-1.8 l/min, discharge input 3.4-5.2 kilowatts, portion of input carried away by the gases 1.9-2.4 kilowatts, and loss of the input energy 1.5-3.3 kilowatts. The unit utilizes a power supply LGD-32 operating within 15-30 megacycles. A detailed temperature distribution in argon plasma is given. It is indicated that the high frequency electrodeless plasma technique can be employed to decomposition of SiO_2 into elemental silicon or silicon monooxide. Other important applications include the decomposition of $SiCl_4$, formation of silicon carbide from methyldhlorosilane, oxidation of $SiCl_4$ to silicon mono- or dioxide, and reduction of silicon dioxid. The temperature dependence of the concentration χ of silicon and silicon monooxide in silicon-containing decomposition products is shown in Fig. 1. Orig. art. has: 4 figures, 4 tables, 5 formulas.

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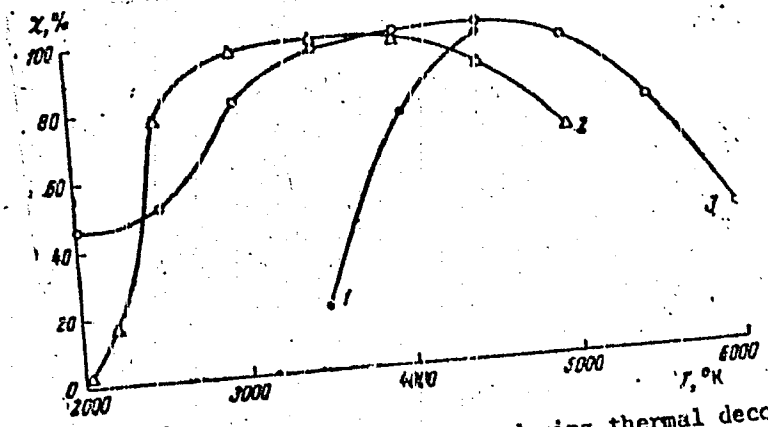

Fig. 1. 1--concentration of elemental silicon during thermal decomposition of $SiCl_4$; 2--concentration of SiO during oxidation of $SiCl_4$ with oxygen; 3--concentration of SiO during thermal decomposition of SiO_2.

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LEKSAU, Igor' Nikolayevich; ARODZERO, Aleksandr Mikhaylovich; GAL'PERIN, Zinoviy Samoylovich; GORBACHEVSKIY, Viktor Andreyevich; DARAGAN, Leonid Dmitriyevich; KLYCHKOV, Pavel Dmitriyevich; LAKH, Yevgeniy Ivanovich; PRASOLOV, Boris Aleksandrovich; RYZHKOV, Aleksey Nikolayevich; SUKHARNIKOV, Iosif Osipovich; TURASS, Aleksey Leont'yevich; DOLGOPOLOV, N.P., red.; KONARDOVA, T.F., red. izd-va; VDOVINA, V.M., tekhn. red.

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1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

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