

KORZINKINA, Z.; VATLETSOV, V.; MEYLAKHS, M., master sporta; BOROVIKHIN, D.

Facts, events, people. Kryl. rod. 16 no.9:18-19 S '65.

(MIRA 18.12)

1. Obshchestvennyy instruktor Kirovskogo oblastnogo komiteta Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR (for Vatiletsov). 2. Zamestitel' nachal'nika Tsentral'nogo doma aviatsii i kosmonavtiki (for Borovikhin).

BYENTOVA, M.S.; MYLAKOVA, D.Sh. *

Oxidation of hydrocarbons by oxygen: Oxidation of phenylcyclohexane
and dicyclohexyl. Vest.Mosk.un.10 no.10:103-109 0 '55. (MIRA 9:4)

1.Kafedra khimii i nefii.
(Hydrocarbons) (Oxidation)

MEYLANOVA, D. Sh.

AUTHORS: Karaulova, Ye. N., Meylanova, D. Sh.,
Gal'pern, G. D.

79-11-27/56

TITLE: On the Thermal Isomerization of Allylarylsulfides
(O termicheskoy izomerizatsii allilarilsul'fidov).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3034-3040
(USSR)

ABSTRACT: According to Claisen the characteristic property of the allylaryl-esters is the so-called regrouping, the ability of isomerizing into o-allylphenols on heating. It was attempted to apply the thermal isomerization to the sulfur-analogues of these esters, to allylphenylsulfide and o- and p-allyltolylsulfide. In contrast to the results obtained by Hurds and Greengards it was found that on heating (boiling) of allylphenylsulfide without solvents no allylthiophenol is to be obtained, but only propenylphenylsulfide which, if heated, yields concentration products. The structure of the product obtained in the thermal isomerization of allylphenylsulfide was determined by hydrogenation over nickel. Thus this isomerization with subsequent formation of allylthiophenols (Claisenian

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On the Thermal Isomerization of Allylarylsulfides

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regrouping), like in the analogous oxygen compounds, has no effect. In thermal isomerization the allylarylsulfides are converted to the corresponding propenylarylsulfides. At first they obtained allyl-o-tolylsulfide, allyl-o-tolylsulfone, propenyl-o- and p-tolylsulfides, propenyl-o-tolylsulfone, cis- and trans-propenylphenylsulfones. Allylphenylsulfide and propenylphenylsulfide are split up by the solution of mercuric chloride in alcohol, on which occasion mercuric chloride of thiophenol forms. There are 1 figure, and 12 references, 2 of which are Slavic.

ASSOCIATION: Petroleum Institute AS USSR (Institut nefti Akademii nauk SSSR).

SUBMITTED: December 10, 1956

AVAILABLE: Library of Congress

Card 2/2

1. Allylarylsulfides - Isomerism

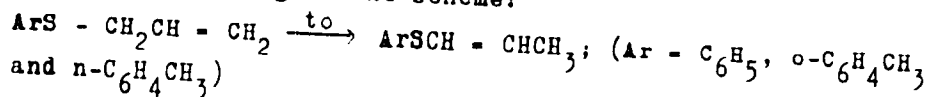
112 1241 11 11

AUTHOR: KARAULOVA, Ye.N., MEYLANOVA, D.Sh.
CAL'PERN, G.D. 20-6-26/59

TITLE: On KLEISEN's Rearrangement in the Allylarylsulphide Series.
(O peregruppirovke Klayzena v ryadu allilarilsul'fidov, Russian)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 6, pp 1280 - 1282
(U.S.S.R.)

ABSTRACT: This rearrangement is an isomerization which, according to the opinion of some scientists, is characteristic not only of the allylarylethers but also of their analogs. In contrast to Hurd and Greengard the authors found that in the case of boiling of allylphenylsulphide without solvent practically no allylthiophenol is formed, but an isomerization of the former in propenylphenylsulphide occurs. It is identical with the product insulated by Tarbell and Mc Call which they obtained by the action of sodium alcoholate in an alcoholic solution on allylphenylsulphide. When standing or warming propenylphenylsulphide forms condensation products. The thermal isomerization of the allylarylsulphides develops according to the scheme:



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Furthermore, the single reactions with yields and experimental

20-6-26/59

On KLEISEN's Rearrangement in the Allylarylsulphide Series.
conditions are described in detail. A colored reaction with sulphuric acid is characteristic of the here investigated propenylarylsulphides: A red coloring results, which quickly changes into brown. In contrast to this, allylarylsulphides, after addition of concentrated H_2SO_4 , turn only faint yellow. The obtained results allow the conclusion that KLEISEN's rearrangement does not take place in the case of the allylarylthioethers, in contrast to corresponding oxygen-compounds. Allylarylthioethers isomerize in the case of heating in corresponding propenylarylsulphides. (1 Slavic reference).

ASSOCIATION: Petroleum Institute of the Academy of Science of the U.S.S.R.
PRESENTED BY: A.V.Topchiyev, Member of the Academy
SUBMITTED: 24.12.1956
AVAILABLE: Library of Congress

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5(3)

AUTHORS:

Karaulova, Ye. N., Meylanova, D. Sh.,
Gal'pern, G. D.

SOV/20-123-1-26/56

TITLE:

Synthesis of 2-Methyl- and 3-Methyl-1-Thia-Indans and
2-Ethylthiaindene (Sintez 2-metil- i 3-metil-1-tiaindanov
i 2-etiltiaindena)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 1,
pp 99 - 101 (USSR)

ABSTRACT:

In connection with the investigation of the sulfur-
containing compounds of the medium naphtha fractions
so-called semiaromatic sulfur compounds are of interest.
Among them, particular attention deserve the alkyl
derivatives of the 1-thia-indan (2,3-dihydro-thia-
naphthene) with substituents in a 5-membered ring. The
authors found, in search for a synthesis method for
such compounds, that the hitherto unknown 2- and 3-
methyl-1-thia-indans (III) can be easily produced
by a gradual reduction of the sulfones (I) of the
corresponding 2- and 3-methyl-thia-indenes. A simple

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Synthesis of 2-Methyl- and 3-Methyl-1-Thia-Indans and
2-Ethylthiaindene

307/26-123-1-26, 56

method of synthesis of the 2-alkyl-thia-indenes is the metallization of the thia-indene (thia-naphthene) by n-butyl lithium with subsequent alkylation by dialkyl sulfates. By the influence exerted by di-methyl- and diethyl sulfate upon 2-thia-indenyl lithium the 2-methyl-thia-indene and the 2-ethyl-thia-indene heretofore not described were obtained. The first can be oxidized by hydrogen superoxide to form 2-methyl-thia-indene sulfone (Ia). The structure of the 2-methyl-1-thia-indan (IIIa) was confirmed by a synthesis according to the given scheme. Experimental data (being not denoted as such), are following. There are 6 references, 1 of which is Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute of the Academy of Sciences, USSR)

PRESENTED: June 14, 1959, by A.V.Topchiyev, Academician
Card 2/3

MEYLANOVA, D. Sh., Candidate Chem Sci (diss) -- "The synthesis of 2- and 3-alkyl-1-thiaindanes and the transformations of arylalkenylsulfides and sulfones". Moscow, 1959. 12 pp (Acad Sci USSR, Inst of Petroleum-Chem Synthesis), 180 copies (KL, No 24, 1959, 128)

MEYLANOVA, D. S.

11(6) FROM 1 BOOK EXPLOSION 807/877

Analizy snov SSSR. Raznitsy siliv, etc. Raznye neorganicheskie sredstva, odobrennykh v seriyah i neopredelennykh (seriya III neorganicheskie) (Chemistry of Sulphur Compounds Contained in Petroleum and Petroleum Products) (Papers of the State Scientific Session) Moscow, Izd-vo AN SSSR, 1979. 370 p.

Editorial Board: B.D. Gubantsev (Dep. Ed.) Doctor of Chemical Sciences; G.A. Gal'per, Doctor of Chemical Sciences; Ya. B. Chertkov, Doctor of Technical Sciences; V.P. Pavlov, Candidate of Technical Sciences; and V.P. Novikostevskiy, Tech. M.S. T.P. Polozova.

FOREWORD: This book is intended for chemists, chemical engineers, and technicians specializing in the chemistry of petroleum. CONTENTS: The book is a collection of papers presented at the Third Scientific Session on the Chemistry of Organic Sulfur- and Nitrogen Compounds Contained in Petroleum and Petroleum Products. The scientific session was held in Ufa, June 3-6, 1977. The book consists of six sections: 1) Synthesis, characterization, and analysis of organic sulfur compounds; 2) Separation and competition of organic sulfur compounds contained in petroleum and petroleum products; 3) Transformation of organic sulfur compounds in petroleum and petroleum products; 4) Properties of and the formation in sulfur-containing petroleum compounds; 5) Uses of organic sulfur compounds and by-products; 6) Physiological properties of organic sulfur compounds and by-products mentioned. There are 513 references, of which 179 are Soviet, 110 English, 3 French, 12 German, and 1 Czech.

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Chemistry of Sulphur Organic Compounds (Cont.) 807/877

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Klimenko, A.V., E.O. Palyubinskiy. The Problem of the Effect of Organic Sulphur Compounds on the Rate of Deparaffination of the Heavy Fraction With Catalysts 150

PART III. HETEROCATALYTIC TRANSFORMATION OF ORGANIC SULFUR COMPOUNDS

Isotopov, B.V., S.P. Semova. Thermodynamics of Some Reactions of Sulfur-containing Compounds 157

Kozlov, Ye. S., D. Sh. Meylanova, G.B. Gal'pern. Transformations of Alkyl Aryl Sulfoxides and Alkyl Aryl Sulfones 160

Vite-Svetitskaya, I.B., P.A. Maslova. Synthesis and Transformations of Sulphur Derivatives of Petralis in the Presence of an Aluminosilicate Catalyst 170

AUTHORS: Karaulova, Ye. N., Meylanova, D. Sh., Gal'pern, G. D. SOV/79-29-2-63/71

TITLE: Synthesis of 3-Methyl-1-thiaindane and Regrouping of Allyl-aryl Sulfones (Sintez 3-metil-1-tiaindana i peregruppirovka allilarilsul'fonov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 662-666 (USSR)

ABSTRACT: Of topical interest is the synthesis of the so-called "semi-aromatic" bicyclic compounds, as components of various mineral oils, especially those of the homologues of 1-thiaindane, with substituents in the hydrogenized ring. H. I. Backer and N. Dost (Ref 1) found that on heating allylphenyl sulfone with H_2SO_4 which contains boron fluoride, an isomerization takes place under formation of a product, to which the structure of 3-methyl-2,3-dihydroindonaphthene sulfone was ascribed. The reduction of the sulfone group therein should lead to 3-methyl-1-thiaindane (3-methyl-2,3-dihydronaphthene). However, on reducing the "cycloisomerization product" of allylphenyl sulfone, which was obtained according to reference 1, the authors found no 3-methyl-1-thiaindane, but propylphenyl

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Synthesis of 3-Methyl-1-Thiaindane and Regrouping
of Allylaryl Sulfones

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sulfone, almost quantitatively. Thus the compound assumed by the above authors as being 3-methylthiaindane sulfone has no bicyclic structure; the isomerization product of allylphenyl sulfone was found to be a propenylphenyl sulfone. Likewise, propenyl-n-tolyl sulfone forms on the action of H_2SO_4 in the presence of boron fluoride upon allyl-n-tolyl sulfone; on the reduction with $LiAlH_4$ the latter is transformed into propyl-n-tolyl sulfone. Thus, on the action of H_2SO_4 upon allylaryl sulfones no cyclization takes place under formation of 3-methyl-1-thiaindane sulfone. In this connection, allylaryl sulfones isomerize immediately into propenyl compounds in the way shown by scheme in reference 2. Further experiments showed that the synthesis of 1-thiaindanes by cyclization of allylaryl sulfides and sulfones is not possible in good yields. The synthesis of 1-thiaindanes was also attempted over thiaindenes (benzothiophenes) and their derivatives. 3-methyl-1-thiaindane was obtained by the reduction of 3-methylthiaindene sulfone (Scheme 2). The structure of 3-methyl-1-thiaindane was

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Synthesis of 3-Methyl-1-Thiaindane and Regrouping
of Allylaryl Sulfones

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determined by hydrodesulphurization over nickel (Scheme 3)
The yield in 3-methyl-1-thiaindane amounts to 41 %, calcu-
lated for thiophenol. There are 10 references, 2 of which
are Soviet.

ASSOCIATION: Institut nefti Akademii nauk S.SSR (Petroleum Institute of
the Academy of Sciences, USSR)

SUBMITTED: December 4, 1957

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KARAUQVA, Ye.N.; MEYLANOVA, D.Sh.; GAL'FERN, G.D.

Synthesis of methyl-1-thiaindanes. Khim.sera-i azotorg.sod.v neft.
i nefteprod. 3:25-33 '60. (MIRA 14:6)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Benzothiophene)

Karaulova, Ye.N.; MEYLANOVA, D.Sh.; GAL'PERN, G.D.

Synthesis of 2- and 3-alkyl-1-thiaindans. Zhur.ob.khim. 30 no.10:
3292-3297 0 '61. (MIRA 14:4)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Thiaindan)

VASIL'CHIKOV, M.V.; VOLKOV, M.M.; MEYLER, B.A.

New techniques for making billets for worm-gear cutters. Stan.1
instr. 30 no.4:7-9 Ap '59. (MIRA 12:6)
(Gear-cutting machines)

1

MEYLER, M.A.

Stresses in the messenger rope during ship drifting caused by waves.
Trudy VNIRO 1 no.1:63-80 '59. (MIRA 15:10)
(Fishing nets)

EL'KIN, I., inzh.; MEYLIKHOV, M., inzh.; CHERNYAK, A., inzh.; YUDITSKIY, I.,
inzh.

Increasing the capacity of hermetically sealed refrigeration
compressors. Khol.tekh. 37 no.3:18-21 My-Je '60. (MIRA 13:7)

1. Khar'kovskoye opytno-konstruktorskoye byuro Ukr torogoborudovaniya.
(Compressors)

MEYLIKHOV, M.; EL'KIN, I.

Automatic soft drink dispenser. Obshchestv. pit. no. 7:38-41 J1 '58.
(MIRA 11:7)

1. Nachal'nik otdela kholodil'nykh mashin Khar'kovskogo opytno-konstruktorskogo buyro(for Meylikhov). 2. Glavnyy konstruktor Khar'kovskogo opytno-konstruktorskogo buyro(for El'kin)
(Carbonated beverages--Equipment and supplies)

ADOL'F, Viktor Aleksandrovich; LEBEDENSKIY, G.V.; MEYLIKHOV, M.M.;
MEKSHIN, M.A.; SEPITYI, V.T.; MEDVEDEV, I.N., inzhener, redaktor;
KOBYLIAKOV, L.M., redaktor; PERSYKINA, Z.D., tekhnicheskiy
redaktor; BALLOD, A.I., tekhnicheskiy redaktor

[Disassembling and assembling KhTZ-7 tractors] Razborka i sborka
traktora KhTZ-7. Pod red. I.N.Medvedeva. Moskva, Gos. izd-vo
selkhoz. lit-ry, 1956. 194 p. (MLRA 9:7)
(Tractors)

MEYLIKHOV, M. Ye., inzhener; DMITRIYEVSKIY, M. M., inzhener

The new RTN-M turbine pump for locomotives. Tekh. zhel. dor. 7 no. 1:
27-29 Ja '48. (MLRA 8:11)

(Locomotives) (Pumping machinery)

AUTHORS: Bartosh, Ye.T., and Meylikhov, M.Ye. (Moscow) 47-4-2/20

TITLE: Construction of Locomotives During the Sixth 5-Year Plan
(Lokomotivostroyeniye v shestoy pyatiletke)

PERIODICAL: Fizika v shkole, 1957, No 4, pp 9-28 (USSR)

ABSTRACT: The authors point out that at the beginning of the Sixth 5-Year Plan the freight turnover on the Soviet railroads by means of electric and Diesel locomotives amounted to only 14%. The plan provides for an increase of 40 - 45%. For this purpose the railroads will be supplied with at least 2,000 electric and 2,250 double-section Diesel locomotives during 1956 - 1960. The construction of new powerful gas-turbine locomotives is also planned. They indicate that fuel is the most important component of the net cost of freight transportation. This factor, the kind of fuel and its availability will have to be taken into consideration when comparing the various types of locomotives. After describing in detail the construction, the working process and the economic factors of the locomotives used at present, the authors arrive at the conclusion that the steam engine's efficiency is only 4 - 5%, while that of the Diesel is 4 - 6 times higher. The authors compare the kind of fuel used by these engines and examine the possibility of

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Construction of Locomotives During the Sixth 5-Year Plan

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utilizing solid fuel for Diesel locomotives by gasifying it in the locomotives or at gas compressor stations with subsequent delivery to the engines in cylinders. But the efficiency of this type of locomotive is about 22% lower than the normal Diesel engines, and they require considerable investment of capital. Referring to the gas-driven turbine locomotives, of which there are only 30 in the world, the article states that their main advantage is the high specific capacity and the possibility to construct powerful engines of small size. They can work on liquid, solid and gaseous fuel. In 1955, Professor N.I. Belokon' suggested a gas turbine engine with a so-called double-stage fuel burning. His scheme provided a series connection of the air boiler working on solid fuel with the combustion chamber for the liquid fuel. The air, going from the compressor to the gas turbine, is preheated to a temperature of 575 - 600° C in the air tank and is later heated by liquid fuel in the combustion chamber to 720 - 750° C. It enables the economic use of solid fuel and ensures favorable conditions for the turbine blades. The efficiency of turbine locomotives run on liquid fuel is at present 16 - 17%, on solid fuel 14.5 - 15.5% and with the so-called "non-shaft piston gas generators" 28 - 30%. Dealing with electric locomotives the authors state

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that the efficiency is considerably higher if the energy is supplied by hydrostations as compared with energy from heat electric stations. The short analysis shows that the replacement of steam locomotives by electric and gas-driven turbine engines is a natural step in technical progress. The high exploitation qualities of electric locomotives and their remarkable efficiency and capacity places the electrification of railroads in the foreground. It is intended to electrify 8,100 km of railroad lines during the Sixth 5-Year Plan. The following lines will be electrified: Moscow - Kuybyshev - Chelyabinsk, Omsk - Novosibirsk - Irkutsk, Moscow - Khar'kov - Slavyansk, Chelyabinsk - Sverdlovsk, Inskaya - Belovo, Belorechenskaya - Tuapse - Sukhumi, Pyatikhatka - Nizhnedneprovsk - Chaplino - Yasinovataya, and others. Also the suburban lines of the biggest cities - Moscow, Leningrad, Khar'kov, Kiev, Stalingrad, Baku will be electric. At the same time powerful Diesel engines will be installed on the lines: Penza - Povovino - Valuyki, Dzhusaly - Arys', Karaganda - Mointy, Akmolinsk - Barnaul, Kalinin - Leningrad, and others. The following electric locomotives will be built: "H8", "BJ-22M" and "BJ-23" working on direct current, and "HO" running on alternating current. The first three engines work on a voltage of the net

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Construction of Locomotives During the Sixth 5-Year Plan

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of 3,300 volt. Table 1 shows the characteristics of these 3 locomotives. The authors deal with the question of changing over to alternating current, considering the direct current to be uneconomical. They describe the difficulty of using one-phase alternating current. On the section Ozherel'ye - Pavlety of the Moscow - Kursk - Donbass RR, alternating current with a tension of 22 kw is already being used. Electric locomotives "HO" (NO), constructed at the Novochoerkassk Plant are running there. Figure No 9 shows a basic electric circuit diagram of locomotive "HO". The engines built are freight locomotives. Special passenger locomotives are not at present being constructed, but Soviet designers are working on special passenger locomotives for a speed of over 150 km per hour. For the suburban passenger traffic, electric engines C_3^P have been built which do not satisfy the demand because of slow speed (85 km/h) and poor acceleration (0.45 m/sec^2). The Riga RR Car Construction Plant (Rizhskiy vagonostroitel'nyy zavod) produced recently a 10-car electric train ЭР-1 which proved to be satisfactory. The comparative characteristics of C_3^P and ЭР-1 are indicated on table 2. A considerable number of freight Diesel locomotives ТЭ-1 and ТЭ-2 operate on the USSR railroads. Their efficiency and speed no longer satisfies the

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Construction of Locomotives During the Sixth 5-Year Plan

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demand. They will be supplemented by new powerful freight Diesel locomotives TЭ-3 (Figure 11). They have a 2-cycle, 10-cylinder engine type 2Д-100, without compressor and with opposing pistons. The electric circuit diagram of this engine is shown in Figure 12. Its capacity is 2,000 hp with 850 rpm. The article gives further particulars about the TЭ-3 Diesel locomotive. The speed is 100 km/h. On the basis of the TЭ-3 locomotive, the Khar'kov Diesel Locomotive Plant has constructed for experimental purposes, new powerful three-section Diesel freight locomotives of 6,000 hp and two-section passenger locomotives TЭ-7 of 4,000 hp with a construction speed of 140 km/h. The construction of TЭ-7 and TЭ-3 is much alike and makes mass production simple. During recent tests a metal-car passenger train took 5 hours 55 minutes from Moscow to Leningrad. A number of gas generator locomotives TЭ-4, developed by the All-Union Scientific Research Institute of Railroad Transport (Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta), are already in use. They consist of two sections of Diesel engine TЭ-2 with a gas generator tender installed between the sections. The Murom Works (Muromskiy zavod) have already constructed new 400-hp Diesel shunting-engines ТГ^М ready for testing. In addition to the ТГ^М the

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Voroshilovgrad Plant has built experimental 750-hp shunting-engines with hydro-mechanical gear. The Bryansk Plant works on the construction of a Diesel shunting-engine of 1,000 - 1,200 hp. The Kaluga Works of the MPS (Kaluzhskiy zavod MPS) have built a narrow-gage Diesel locomotive TY-2 with a 4-cycle non-compressor, 12 cylinder, V-like 300-hp Diesel engine. The Kolomna Plant (Kolomenskiy zavod) has started constructing various assemblies of the two-section gas turbine locomotives for heavy liquid fuel (mazut) of 3,740 hp. The Voroshilovgrad Transport Engine Plant (Voroshilovgradskiy zavod transportnogo mashinostroyeniya) is working on the construction of a gas turbine locomotive with a shaftless piston gas generator of 3,000 hp capacity in each section. Figure 16 shows the disposition of this locomotive's equipment. During the next few years the construction of a gas turbine locomotive is planned with two-stage fuel burning, as per a project developed by the TsNII MPS. Figure 17 illustrates the disposition of the locomotive's equipment. The fuel: 20 - 30% liquid and 70 - 80% solid. The principal characteristics of the discussed gas-turbine locomotives are contained in Table 3. The problem of gas-turbine locomotives is of recent origin but wide prospects for their development can be seen already.

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There are 11 figures, 1 diagram, 3 tables and 6 photos.

ASSOCIATION: TsNII MPS (Moscow)

AVAILABLE: Library of Congress

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PHASE I BOOK EXPLOITATION

SOV/451

Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnykh transporta.
Voprosy gazoturbovozostroyeniya i transportnoy teploenergetiki; sbornik statey
(Problems in Gas-Turbine Locomotive Building and Heat-Power Engineering and
Transportation; Collection of Articles) Moscow, Transzheldorizdat, 1977.
(Its: Trudy, vyp. 187) 1,000 copies printed.

Sponsoring Agency: Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnykh transporta.

Eds. (Title page): Ye. T. Bartosh, Candidate of Technical Sciences, and A.V. Kas'yanov, Candidate of Technical Sciences; Ed. (Inside book): I.K. Pechenkin.
Tech. Ed.: P.A. Khitrov.

PURPOSE: This book is intended for engineering and technical personnel.

COVERAGE: The book consists of 13 articles on the results of theoretical investigation of gas turbine units with two-stage fuel combustion, and on the theoretical and laboratory investigations of air tank units and their components. Special features

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Problems in Gas-Turbine Locomotive Building (Cont.)

SOV

of variable regimes of locomotive gas turbine engines and problems of economy in locomotive and stationary units are discussed. Most of the articles mentioned. References accompany some of the articles.

TABLE OF CONTENTS:

Ivanov, I.A., Director of the Institute, and L.A. Ilayev, Deputy Head of the Department of Power Engineering. Foreword

Maylikhov, M. Ye., Engineer. Analysis of Locomotive Gas Turbine Units With Two-Stage Fuel Combustion

Shevchenko, L.A., Engineer. Characteristics of a Locomotive Single Shaft Gas Turbine Unit Under Partial Loads

Maylikhov, M. Ye., Engineer. Investigation of Basic Diagrams of Gas Turbine Locomotive Air Regenerator Tanks

Syzyumova, Ye. M., Candidate of Technical Sciences. Research on a Two-Stage Combustion Turbine Unit of a Gas Turbine Locomotive

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Problems in Gas-Turbine Locomotive Building (Cont.)

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Bartosh, Ye. T., Candidate of Technical Sciences. Flow Distribution
in Clusters of Pipes

Yevtushenko, A.M., Candidate of Technical Sciences. Cutting Principles
of Self-Sealing, Equal-Section Gasket Rings

Kas'yanov, A.V., Candidate of Technical Sciences, Yu. Ye. Radin,
Candidate of Technical Sciences, and Ye. P. Khil'kovskaya, Engineer.
Aerodynamic Investigation of Gas Turbine Locomotive Air Tank Elements

Kulagin, L.V., Engineer. Determining Tolerances for the Dimensions
of Centrifugal Fuel Swirlers

Chernomordik, B.M., Engineer, Candidate of Technical Sciences, and
K.F. Dobrikov, Engineer. Influence of Generator Gas Composition on
the Combustion Process in a Piston Chamber

Pavlov, S.F., Candidate of Technical Sciences. Experimental Investigation
of Heat Exchange in Boiling on the Heating Surface of Clusters of Pipes

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• Problems in Gas-Turbine Locomotive Building (Cont.) 80V/454

• Postarnak, S.F., Engineer. Investigation and Selection of Types of Steam Turbines for Small Electric Power Stations

Samokhvalova, A.I., Engineer. Aerodynamics of the Combustion Chamber of a Jet-Layered Fire Box With Pneumatic Fuel Stoking

Yudayeva, Ye. M., Engineer. Test Stand Results of the Investigation of the Air Tank of a Gas Turbine Locomotive

AVAILABLE: Library of Congress

Card 4/4

MAJ. KHON, M. Ye., inzh.

Analyzing the layout of locomotive gas-turbine systems with two-stage fuel combustion. Trudy TSNII MPS no.187:4-26 1960.

(MIRA 13:11)

(Gas-turbine locomotives)

MEYLIKHOV, M. Ye., insh.

Study of the basic systems of the air-preheater generator of gas-turbine locomotives. Trudy TSNII MFS no.187:43-70 '60.
(MIRA 13:11)

(Gas-turbine locomotives)

ALEKSEYEV, L.N., inzh.; MEYLIKHOV, M.Ye.

Choice of surface type of the heat exchangers of locomotive gas turbine systems. Trudy TSNII MPS no.241:83-93 '62.

(MIRA 15:12)

(Gas turbines)

(Heat exchange)

MEYLIKHOV, M.Ye., inzh.; MITROFANOV, I.M., kand. tekhn. nauk

Results of the field tests of G1-01 gas-turbine locomotives.
Vest. TSNII MPS 22 no.4:3-8 '63. (MIRA 16:8)

(Gas-turbine locomotives--Testing)

MFY: IKHOV, M. G. . . 1928.

Method of the field tests of G1-01 gas-turbine locomotives.
Trudy VNIIM, No. 8, 5-13, 1967. (MIRA 17:10)

Effect of the design parameters of a locomotive gas-turbine engine
on its operation. Ibid., No. 10, 1967.

L 32449-65 ENT(m)/EPF(c)/T Fr-4 DJ/WE

ACCESSION NR: AT4049521

S/2917/64/000/282/0014/0034

AUTHOR: Meylikhov, M. Ye. (Engineer); Mitrofanov, I. M. (Candidate of technical sciences); Pavlov, S. P. (Candidate of technical sciences); Sen-Zhelan, Ye. A. (Engineer);

TITLE: Results of field tests of the first Soviet G1-01 gas turbine locomotive

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta. Trudy, no. 282, 1964. Rezul'taty issledovaniy gazoturbovoza G1-01 i lokomotivnykh gazoturbinnnykh dvigateley (Results of research on the gas turbine locomotive G1-01 and locomotive gas turbine engines), 14-34

TOPIC TAGS: gas turbine, gas turbine locomotive, distillate fuel, gas turbine compressor, locomotive field test

ABSTRACT: The gas turbine locomotive discussed in this paper was manufactured by the Kolomenskiy teplovozostroitel'nyy zavod imeni V. V. Kuybysheva (Kolomna Diesel Plant) at the end of 1959. Only one section of a two-section freight gas-turbine locomotive was made. The wheel arrangement was 3₀-3₀; working weight 139.4 tons; turbine shaft h.p. 3,500; traction engine h.p. 2,700; calculated gas turbine speed 3,500 rpm; calculated gas temperature in front of the engine 727C; ratio of limiting compression pressures 6; number of compressor stages 12; number of turbine stages 4; h.p. of 1D6N auxiliary engine 220; fuel reserve in kg: distillate fuel

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L 32449-65

ACCESSION NR: AT4049521

4

9,500 and diesel fuel 1,500; calculated speed 100 km/hr. Several test runs were made with trains weighing up to 2,000 tons. On the basis of adjustment tests a new engine was designed with higher casing rigidity which resulted in lower engine vibration. Engine No. 3 was replaced by this newly designed engine No. 4. Further tests were made between the stations of Kochetovka and Rybnoye with grades up to 8%, and then between Kochetovka and Pavelets. Operation showed that the gas turbine locomotive could undergo routine inspection and repairs in regular railroad repair shops. Repairs would be needed at the plant only when there are no special devices or spare parts and assemblies. The time lost for repairs was 60% of the total time of operation. The total number of runs was 90 with freight trains weighing up to 2,870 tons. The average speed was 50-53 km/hr, without any speed limitations along the road. The distillate fuel used in the engine had the following properties: density 0.917-0.924; viscosity at 50C 1.58-1.60; solidification point -7C to +3C; flash point 65-82C; content of sulfate tars 17-18%; content of admixtures 0.03-0.12%; ash content 0.0079-0.0086%; vanadium content 0.0009-0.0027%; sulfur content 2.5-3%; calorific value 9,745-9,734 Cal/kg. Water was found in the fuel tank and was regularly drained, as the presence of water leads to the formation of harmful emulsions. The diesel fuel consumption was 2-10% (5.4% average) of the entire fuel consumption. Lubricant consumption was 0.1 l/hp-hr, or 10-15% of that in diesel locomotives. In the winter (-20 to

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ACCESSION NR: AT4049521

0

+5C) the maximum horsepower of the gas turbine was 2,700-2,800 h.p. and 2,200-2,300 kW, while in the summer (up to +30C) the maximum h.p. was 2,500-2,600 and 1,900-2,000 kW. This is explained by limitation of engine power at temperatures above +15C. The performance curve (Fig. 1 of the Enclosure) depends on the DC drive installed on the G1-01 gas turbine locomotive. The locomotive was set at constant speed by manual adjustment of main generator excitation. As the gas turbine was tested the results became better at higher engine power. The power efficiency between Kochatovka and Rybnoye was 0.68-0.70. Increased experience of the locomotive engineer and team leads to improved operation, lower fuel consumption, etc. Thus, during the first few trips, the gas turbine was never shut off as the engineer was not sure whether he could start it again if required. Calculations and operational tests show that the weight of the freight train may be increased up to 3,000-3,100 tons. Fuel consumption may be lowered by decreasing idling speed and by a sharp drop in gas turbine speed while the auxiliary diesel engine is running at idling speed. The field test data coincide with laboratory tests of the gas turbine in relation to speed and power, the same being true in relation to the compressor. Constant power of the generators may be obtained by adjusting the main generator excitation when the temperature changes from -20 to +25C. Distillate fuel has been approved as a standard petroleum fuel for gas turbine locomotive engines (GOST 10443-63). Several defects were eliminated during the field

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L 32449-65

ACCESSION NR: AT4049521

tests, such as suction of exhaust gases into the compressor, the input air temperature being 5-10C higher than the outer air temperature, as well as compressor surge. Opening of the compressor after 46,000 km showed that the flow parts of the compressor were in good condition. Even before the governor was installed the engine could be started with ease. The main deficiency in the combustion chamber was smokey exhaust, with both distillate and diesel fuels. Fig. 2 of the Enclosure shows the revised design of the turbine vane fastening. Slide bearings resulted in lower vibration and they are to be installed on all new engines. The main fuel pump and circulation pump failed several times due to poor packings. The horse-power of the auxiliary diesel engine should be increased from the initial 150 h.p. to 300-400 h.p., instead of the reinstalled 220 auxiliary diesel engine. Finally, it is noted that the gas turbine locomotive engine ran satisfactorily. However, tests with only one locomotive are insufficient and several should be built with automatic governors and controls on the gas turbine for testing the entire system. Orig. art. has: 14 figures and 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta, Moscow (All-union railroad transport scientific research institute)
SUBMITTED: 00 ENCL: 02 SUB CODE: PR
NO REF SOV: 002 OTHER: 000
Card 4/6

32449-65

ACCESSION NR: AT4049521

ENCLOSURE: 01

0

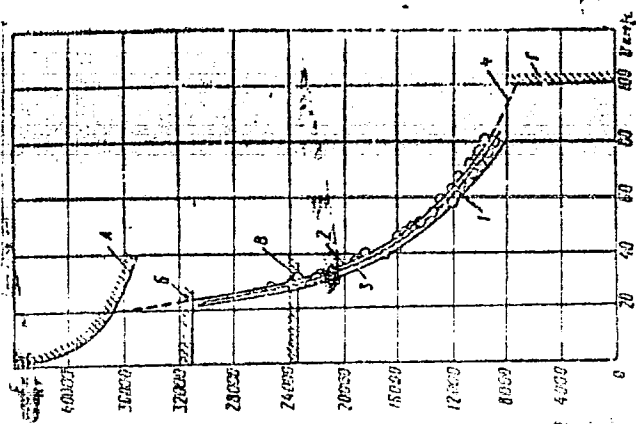


Fig. 1. Performance curve of G1-01 gas turbine locomotive at 8,500 rpm 1-spring-fall season; 2-winter season; 3-summer season; 4-"Elektro-tyazhmash" design; A-limitation for friction; B-the same for starting current; C-for long-time current; D-for calculated speed

Card 5/6

L 32449-65

ACCESSION NR: AT4049521

ENCLOSURE: 02

0

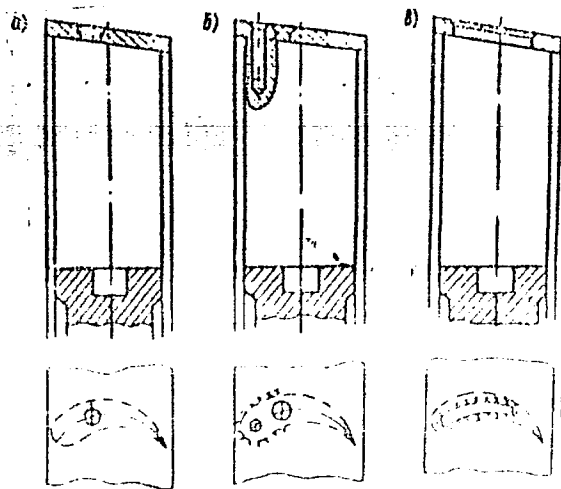


Fig. 2. Fastening of turbine vanes
a-initial design;
b-improved design;
c-design worked out for future
gas turbine engines

Card 6/6

KIST'YANTS, L.K.; NAYMAN, A.M.; SERDELEVICH, G.Ye.; LEBEDEV, B.P.,
doktor tekhn. nauk, prof., retsenzent; VINOGRADOV, N.S.,
retsenzent; MEYLIKHOV, M.Ye., inzh., red.

[Combustion chambers of gas-turbine locomotive engines]
Kamery sgoraniia lokomotivnykh gazoturbinnnykh dvigatelei.
Moskva, Mashinostroenie, 1965. 147 p. (MIRA 18:8)

L 65245-65 EWT(l)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/GG

ACCESSION NR: AP5012570

UR/0181/65/007/005/1529/1534

AUTHOR: Meylikhov, Ye. Z. 44.85

53
50
B

TITLE: Determination of the parameters of the adhesion and recombination levels in CdS

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1529-1534

TOPIC TAGS: adhesion, cadmium sulfide, recombination coefficient, energy band structure, photoconductivity

ABSTRACT: The photoconductivity of single-crystal CdS was investigated by a resonator method in the 3 cm band, with an aim at finding the stationary photoconductivity characteristics and determining from them the parameters of the adhesion and recombination levels in semiconductors of the CdS type. The theory of the process is briefly described. The experimental set-up used is shown in Fig. 1 of the Enclosure. The single-crystal CdS measured 0.4 x 0.25 x 0.1 cm and was placed on the broad wall of the resonator and illuminated through a hole in the narrow wall by a 400-watt motion picture lamp whose light was focused on the sample. The light wavelength was in the strong-absorption region (4750 Å). An analysis of the lux-ampere characteristics obtained at 300--500K yields the energy distribution of the adhesion levels in the energy range 0.15--0.40 eV, and shows the presence of two recom-

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L 65245-65

ACCESSION NR: AP5012570

3

bination levels. The concentration of the adhesion levels is of the order of 10^{17} cm^{-3}/eV and agrees with the values obtained on the photocurrent growth curves obtained by volume photoexcitation. The values obtained for the recombination coefficients are 10^{-12} and 10^{-13} cm^3/sec for the two local recombination levels observed. Orig. art. has: 5 figures and 12 formulas.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physicotechnical Institute)

u4,75
SUBMITTED: 27 Jul 64

ENCL: 01

SUB CODE: SS, OP

NR REF SOV: 003

OTHER: 003

Card 2/3

L 65245-65

ACCESSION NR: AP5012570

ENCLOSURE: 01

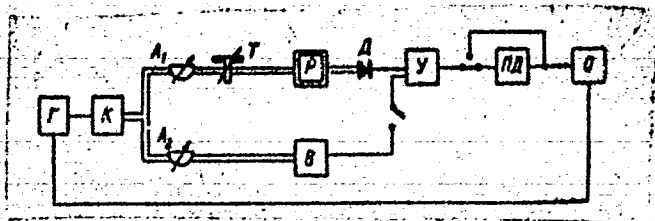


Fig. 1. Block diagram of measuring setup.

К - klyatron, Г - sawtooth voltage generator, А - attenuators, Т - matching transformer, Р - measuring resonator, Д - low-frequency detector, У - amplifier, ПД - peak detector, О - oscillograph, В - wavemeter.

Card

712R
3/3

1. 2199-66 EWT(1)/EWT(m)/ETC/EMD(m)/T/EMP(t)/EMP(b)/EHA(h) IJP(c) HDW/JD/AT
ACCESSION NR: AP5014574 43
40
B

AUTHOR: Meylikhev, Ye. I. 44.55

TITLE: Concerning the anomalous temperature dependence of carrier mobility in selenium

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1743-1748

TOPIC TAGS: selenium, semiconductor carrier, temperature dependence, crystal lattice structure, hole mobility, electron mobility 44.55

ABSTRACT: The purpose of the investigation was to check whether the presence of activation barriers in selenium crystals is responsible for anomaly in the temperature dependence of the carrier mobility. To exclude the influence of the barriers, the measurements were made at microwave frequencies ($\sim 10^{10}$ cps), which is about one order of magnitude larger than the dispersion frequency. The experiments were made by a resonator method, using apparatus described by the author earlier (PTT v. 7, 1529, 1965). By comparing the temperature variation at microwave frequencies and with direct current it becomes possible to explain the role of the polycrystalline structure in the determination of the electric properties of hexagonal selenium.

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L 2199-66

ACCESSION NR: AP5014574

3

The anomalous behavior of selenium is shown to be exhibited only in dc measurements, whereas at microwave frequencies the mobility decreases monotonically with increasing temperature. The results agree with the notion that polycrystalline selenium contains activation barriers which separate the individual crystals of the hexagonal selenium. Once the influence of these barriers is eliminated, the true carrier mobility in hexagonal selenium exhibits the usual behavior predicted by the theory with account of phonon scattering. Orig. art. has: 5 figures and 5 formulas.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut Ministerstva vysshego i srednego spetsial'nogo obrazovaniya (Moscow Physicotechnical Institute of the Ministry of Higher and Secondary Special Education)

SUBMITTED: 23Dec64

ENCL: 00

SUB CODE: 00

NR REF SOV: 007

OTHER 008

44.55

Card

2/2 SP

L 63830-65 EWT(m)/EPF(c)/EPA(w)-2/T DS/TFW
ACCESSION NR: AP5020226

UR/0069/65/027/004/0552/0555
541.18 : 537

23
22
B

AUTHOR: Maylikhov, Ye. Z.

TITLE: Kinetics of the thermal ionization of an aerosol

SOURCE: Kolloidnyy zhurnal, v. 27, no. 4, 1965, 552-555

TOPIC TAGS: aerosol, ionization, coagulation, kinetic gas theory, kinetic theory

ABSTRACT: A differential equation describing the thermal ionization of an aerosol has been derived as

$$\frac{dy(t)}{dt} = \frac{B \exp(i/2\sigma_0^2) \exp[-y(t)/\sigma_0^2] - \alpha N \{y(t) + \sigma_0^2 \partial \ln \phi_3[y(t), 2\pi\sigma_0^2] / \partial y(t)\}}{1 + \sigma_0^2 \partial^2 \ln \phi_3[y(t), 2\pi\sigma_0^2] / \partial y^2(t)}$$

where the parameter $y(t)$ is given by

$$N_m(t) = \frac{N}{\sqrt{2\pi\sigma_0^2}} \exp\left\{-\frac{[m-y(t)]^2}{2\sigma_0^2}\right\} \phi_3[y(t), 2\pi\sigma_0^2]$$

$$n_r(t) = N \left\{ y(t) + \sigma_0^2 \frac{\partial \ln \phi_3[y(t), 2\pi\sigma_0^2]}{\partial y(t)} \right\}$$

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L 63830-65

ACCESSION NR: AP5020226

B by

$$B = \frac{A_0 \Omega T^2}{e} \exp\left(-\frac{\phi + \delta e^2/r}{kT}\right),$$

σ_0^2 by

$$\sigma_0^2 = r k T / e^2; \quad y_0 = \sigma_0^2 \ln(B / \alpha n_0^2) + 1/2;$$

α by

$$\alpha = \pi r^2 A_0 / A_0 (8 k T / \pi m_e)^{1/2},$$

Θ_3 is the elliptical function of A. M. Zhuravskiy (Spravochnik po ellipticheskim funktsiyam, Izd-vo AN SSSR, 1941), t - the time, k - the Boltzman constant, T - the absolute temperature, n_e - the electronic concentration, N_m and ϕ_m - the concentration and work function of aerosol particles of charge me respectively, r - particle radius, A_0 - Richardson's constant, and $\Omega = 4\pi r^2$ is the surface area of an aerosol particle. The equation is solved for the case I, for which $1/2\pi < \sigma_0^2 < 1$, and for case II, in which $2\pi\sigma_0^2 < 1$. For case I, the differential equation becomes

$$dy(t)/dt = B \exp(1/2\sigma_0^2) \exp[-y(t)/\sigma_0^2] - \alpha N y(t).$$

Integration of this equation shows that the time required for the attainment of equilibrium conditions increases with increase in the value of the work function ϕ . For case II, integration yields the expression

$$n_e(t) = N \sqrt{\frac{B}{\alpha N}} [1 - \exp(-2\alpha N t)].$$

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L 63230-65

ACCESSION NR: AP5020226

It follows from this equation that the time for the attainment of a 90% equilibrium ion concentration is given by

$$\tau_i = 0.83/\alpha N$$

The coagulation process was also investigated, and it was found that the times required for a significant change in the concentration τ_N and particle size τ_r to occur are given by

$$\tau_N \sim 1/KN_0, \tau_r \sim 10/KN_0$$

where K , V and γ are given by

$$K = 2\sqrt{2\pi r^2 V \gamma}, V = (8kT/\pi M)^{1/2}, \gamma = \lambda/(\exp \lambda - 1), \lambda = y_0^2 e^2 / 2rkT$$

M is the mass of an aerosol particle. It is concluded that the coagulation process is much slower than thermal ionization. Orig. art. has: 2 graphs and 21 equations.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskii institut g. Dolgoprudnyy (Moscow Physico-Technical Institute)

SUBMITTED: 04Feb64

ENCL: 00

SUB CODE: GC ME

NO REF SOV: 004

OTHER: 002

awm/
Card 3/3

L 5035-66 EWT(m)/EPF(c)/EPA(w)-2/T DS/WW/JAJ

ACCESSION NR: AP5024020

UR/0069/65/027/005/0728/0730
541.18.2/.3:537.311.35

62
59

AUTHOR: Meylikhov, Ye. Z. 44.55

TITLE: Conductivity of a thermally ionized aerosol 7,44,55

SOURCE: Kolloidnyy zhurnal, v. 27, no. 5, 1965, 728-730

TOPIC TAGS: electric conductivity, aerosol, thermal ionization, plasma charged particle, collision cross section

ABSTRACT: Analytical expressions are derived for the conductivity of an equilibrium aerosol plasma created by the thermal ionization of an aerosol for the case of relatively low temperatures T or small size r of the aerosol particles ($rkT \ll 1$). The following formulas were obtained for two special cases.

Case 1. For $1/2\pi \ll \sigma_0^2 \ll 1$ (where $\sigma_0^2 = rkT/e^2$),

$$\sigma = 0.532 \frac{e^2}{(m_e kT)^{1/2}} \left[\frac{1}{\sigma_0^2 + 1} + \exp\left(-\frac{1}{2\sigma_0^2}\right) (2\sigma_0^2)^{1/2} + \sum_{n=1}^{\infty} \frac{(-1)^n}{n} \sigma_0^{2n} \right]$$

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ACCESSION NR: AP5024020

(where N(k) and Q(k) are respectively the concentration and electron collision cross section for k-kind particles of the gaseous component of the system).
Case 2. For $2\pi^2 \sigma_0^2 < 1$,

$$\sigma = 0,532 \frac{\sigma^2}{(m_e kT)^{1/2}} \cdot \exp\left(\frac{y}{\sigma_0^2}\right) \left[\exp\left(\frac{y}{\sigma_0^2}\right) + \exp\left(\frac{1}{2\sigma_0^2}\right) \right]^{-1} \times$$

$$\times \left(Q_{\text{cont}} \exp\left(\frac{y}{\sigma_0^2}\right) \left[\exp\left(\frac{y}{\sigma_0^2}\right) + \exp\left(\frac{1}{2\sigma_0^2}\right) \right]^{-1} + \exp\left(-\frac{y^2}{\sigma_0^2}\right) + \sum_k \frac{N^{(k)}}{N} Q^{(k)} \right)^{-1}$$

Orig. art. has: 15 formulas.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskii institut (Moscow Physicotechnical Institute)

SUBMITTED: 04Feb64

ENCL: 00

SUB CODE: ME

NO REF SOV: 003

OTHER: 004

Card 2/2

8/057/63/033/003/020/021
B104/B180

AUTHORS: Komel'kov, V. S., Meylikhov, Ye. Z., and Pimoshin, A. A.

TITLE: Pulsed needle-shaped breakdown gaps in strong magnetic fields

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 3, 1963, 373 - 374

TEXT: Pulsed magnetic fields with 50, 75 and 100 kilooerstedes were produced in a single-turn steel coil by discharge from a 110 μ f. capacitor battery. The current period was 13.3 μ sec, the square voltage pulse length 0.3 μ sec and amplitude up to 15 kv. The discharge tubes were 25 and 3 mm diam with electrodes of molybdenum wire diam 0.8 mm. They were placed in the uniform magnetic field of the coil along or across the lines of force. The breakdowns were produced at pressures between 35 and 760 mm Hg, and the gap lengths were 3.4, 4.7, 5.0, 6.0 and 6.4 mm. Results show that, even in strong magnetic fields where the Larmor radius of the electrons is half their mean free path the magnetic field hardly affects the discharge. This is attributed to the fact that the Townsend element

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S/057/63/033/003/020/021
B104/B180

Pulsed needle-shaped ...

in the pulsed breakdown is comparatively small.

SUBMITTED: July 30, 1962

Card 2/2

L 18860-63

EWT(1)/BDS/ES(w)-2

AFFTC/ASD/ESD-3/AFWL/IJP(C)/SSD

Pg 4

ACCESSION NR: AP3005504

S/0057/63/033/008/0943/0944

AUTHOR: Komel'kov, V.S.; Mejlikhov, Ye.Z. 65

TITLE: Growth of negative Lichtenberg figures in nanosecond intervals

SOURCE: Zhurnal tekhnicheskoy fiziki, v.33, no.8, 1963, 943-944

TOPIC TAGS: Lichtenberg figure , point-plane discharge

ABSTRACT: Negative point to plane Lichtenberg figures were produced by 5 to 15 kV pulses lasting from 10 to 100 nanoseconds. The experiments were undertaken in the hope of obtaining information about electron velocities² in strong non-uniform fields. The pulses were produced by a generator similar to that described by R.C.Fletcher (Phys.Rev., 76, 1501, 1949) and had rise and fall times not exceeding 4 nanosec. The figures were produced by a point electrode on a plane electrode covered with a photographic film. For pulse durations greater than about 20 nanosec the size of the Lichtenberg figures depended only on the potential and not on the pulse duration. For shorter pulses the size of the figure increased with the pulse length. Growth rates of the order of 10^8 cm/sec were observed. From these large growth rates and the absence of bright spark filaments, the authors conclude that the ionization me-²

Card 1/2

L 18860-63

ACCESSION NR: AP3005504

chanism cannot be simple electron avalanche formation. To investigate any delay in the onset of the creep discharge, figures were produced by 100 nanosec pulses with 0.2 nanosec risetimes and the surges in the electrode circuit were observed. With the point electrode touching the film no delays greater than 0.5 nanosec were found. With the point separated from the film by distances up to 0.2 mm, delays, increasing with the separation, up to about 20 nanosec occurred. When the space between the electrode and the film was illuminated by a mercury arc lamp, the delays were shorter and more uniform. Orig.art.has: 4 figures. 0

ASSOCIATION: none

SUBMITTED: 30Jul62

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: PH

NO REF SOV: 001

OTHER: 004

Card 2/2

101-300-07 INT(1) INT(C) AT
ACC NA: A10023417

SOURCE CODE: UR/0139/66/000/003/0083/0009

57

AUTHOR: Keylikhov, Ye. Z.

ORG: Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskiy institut)

TITLE: Measurement of the photoconductivity of semiconductors at microwave frequencies

SOURCE: IVUZ. Fizika, no. 3, 1966, 83-89

TOPIC TAGS: photoconductivity, electron paramagnetic resonance, microwave spectroscopy, cavity resonator, light absorption, light excitation

ABSTRACT: After pointing out that the microwave method of measuring photoconductivity has many features in common with the method of investigating electron paramagnetic resonance the author derives relations connecting the parameters of the resonator with the parameters of the photoconducting sample placed in the resonator and illuminated with light. The conditions corresponding to optimal sensitivity of this method of photoconductivity measurement are derived. Formulas that permit the quantitative calculation of the photoconductivity by the resonator method are derived. Cases are considered of different placements of the sample in a cylindrical resonator operating in the H_{011} and E_{010} modes, and a rectangular resonator operating in the H_{10p} mode. The relations derived are valid for an arbitrary character of light absorption, but with the diffusion of the photoexcited carriers neglected. Working formulas are derived for a measuring circuit using transmission through a resonator. All the de-

Card 1/2

L 09300-07

ACC NR: AR6023417

0

rivations are valid in the small-perturbation approximation. Orig. art. has: 3 figures and 20 formulas.

SUB CODE: 20/ SUBM DATE: 11Aug64/ ORIG REF: 008/ OTH REF: 004

L 23151-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6006843

SOURCE CODE: UR/0181/66/008/002/0541/0545

AUTHOR: Mezlikhov, Ye. Z.

ORG: Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskii institut) ^{B57}

TITLE: Photodielectric effect and negative photoconductivity in germanium at a frequency of 100 Gc _{27.7}

SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 541-545

TOPIC TAGS: photoconductivity, germanium, single crystal, permittivity, illumination optics, resonator

ABSTRACT: The resonator method was used for studying the photodielectric effect and photoconductivity of small single crystals of germanium in the 300-90°K range at a frequency of 100 Gc. The specimens were exposed to the light of a 400 w studio lamp passed through a condenser, calibrated iris, special lens system and plexi-glass light guide into the resonator. The temperature of the specimen, which was located on the end wall of the resonator, was measured by a copper-constantan thermocouple. Changes in the shf power passing through the resonator and the displacement of its resonance frequency were recorded during illumination of the specimens.

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L 23151-66

ACC NR: AP6006843

An increase in the permittivity of the crystal during illumination was observed throughout the entire range of temperatures studied. There is a transition from positive to negative photoconductivity at low temperatures and high light intensities. The generally accepted mechanisms proposed to explain the photodielectric effect and negative photoconductivity of germanium are not sufficient to explain the experimental results. The observed phenomena are apparently due to macrostructural polarization of the specimen with regard to space charge and carrier inertia. The conclusions drawn from the proposed model agree satisfactorily with experimental data. Orig. art. has: 3 figures, 4 formulas.

SUB CODE: 20/ SUBM DATE: 24Mar65/ ORIG REF: 005/ OTH REF: 006

Card 2/2 *U6B*

MEYLIKHOV, Z. Ye.

For more orderly planning of construction, repair and maintenance
of local roads. Avt.dor.17 no.1:4-5 Jl-Ag'54. (MLRA 8:10)
(Roads--Maintenance and repair)

MEYLIKHOV, Z. Ye., inzhener; ROZOV, N. A., inzhener

A network of improved roads is being built in the regions
reclaiming virgin and new lands. Avt. dor. 18 no. 3:4-5
My-Je '55. (MLRA 8:9)

(Roads)

✓
KIRYUKHIN, I. I., inzhener; MEYLIKHOV, S. Ye.

More attention to road maintenance during the crop transport period
Avt.dor.18 no.4:22 J1-Ag'55. (MIRA 8:11)
(Roads--Maintenance and repair)

DOBROLYUBOV, Ye.M., inzhener; MEYLIKHOV, Z.Ye., inzhener.

Mechanical enrichment of limestone rubble. Avt. dor. 19
no. 7:9-10 J1 '56. (ULRA 9:10)

(Road materials)

MEYLIKHOV, Ye.Z.

Determining the parameters of trapping and recombination levels in
CdS. Fiz. tver. tela 7 no.5:1529-1534 My '65. (MIRA 18:5)

1. Moskovskiy fiziko-tekhnicheskij institut.

KOMEL'KOV, V.S.; MEYLIKHOV, Ye.Z.; PIMOSHIN, A.A.

Pulsed breakdown of needle gaps in strong magnetic fields. Zhur.
tekh. fiz. 33 no.3:373-374 Mr '63. (MIRA 16:5)
(Breakdown, Electric) (Magnetic fields)

MEYKHANZON, A. S.

MEYKHANZON, A. S.

Meykhzon, A. S. On a question about Galois complexes.

Doklady Akad. Nauk SSSR 1981, 5, 58-59, 084 (1981)

Russian

Let ζ satisfy an algebraic equation of the form

$$\zeta^n + P_1 \zeta^{n-1} + \dots + P_n = 0;$$

let ζ be a generalized complex variable,

$$\zeta = x_0 + jx_1 + \dots + j^{n-1}x_{n-1},$$

where the x_k are independent real variables, and let $F(\zeta)$ be a generalized complex function of ζ ,

$$F(\zeta) = u_0(\zeta) + ju_1(\zeta) + \dots + j^{n-1}u_{n-1}(\zeta),$$

where the $u_k(\zeta)$ are real functions of the n real variables x_0, \dots, x_{n-1} . The author obtains linear partial differential equations, analogous to the Cauchy-Riemann equations, which necessarily are satisfied if $dF/d\zeta$ exists. Analogues of the Cauchy integral theorem and the theorem of Morera are established for the case $n = 3$. *Beckenbuch.*

5
R227

Source: Mathematical Reviews,

Vol. 7 No.

REF ID: A-5

Melikhon, A. S. On the assignment of monogeneity to quaternions. Doklady Akad. Nauk SSSR (N.S.) 59, 431-434 (1948). (Russian)
N. M. Kryloff [C. R. (Doklady) Acad. Sci. URSS (N.S.) 55, 787-788 (1947); these Rev. 9, 233] presented a definition of monogeneity for functions of a quaternion variable. The author shows that [as was pointed out in the review of Kryloff's paper] Kryloff's monogenic functions are all linear.
R. P. Kané Jr. (Providence, R. I.)

Source: Mathematical Reviews,

Vol 10 No. 3

of

MEYLIKHON, I.

Conference on the problem of creating a new kind of mine surface.
Ugol' 39 no.1:74 Ja '64. (MIRA 17:3)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut
ugol'noy, rudnoy, neftyanoy i gazovoy promyshlennosti Ukrainskoy
SSR.

BERLOVICH, E.Ye.; MEYLING, V.; TARASOV, V.K.

Applicability of the Ikegami - Udagava method in allowing for pair correlations when calculating the probability of electromagnetic transitions in deformed nuclei. Izv. AN SSSR.Ser. fiz. 29 no.5:846-848 My '65.
(MIRA 18:5)

1. Fiziko-tehnicheskiy institut im. A.F.Ioffe AN SSSR.
2. Tsentral'nyy institut yadernykh issledovaniy, Rossendorf, Germanskaya Demokraticeskaya Respublika (for Meyling).

PETROVA, S.V.; MEYLITSEVA, T.I.

Reorganize the edition of literature for workers. Mashinostroitel'
no.7:47 JI '62. (MIRA 15:7)

(Technology--Information services)

PHASE I BOOK EXPLOITATION

SOV/4556

Ayzenberg, B.I., Engineer, B. M. Kleymentov, Engineer, S.K. Mamontov, Engineer,
B.M. Meyl'man, Engineer, Ya. S. Mindlin, Engineer, A.M. Palant, Engineer, and
Ye. S. Yampol'skiy, Engineer

Proyektirovaniye mashinostroitel'nykh zavodov; spravochnoye posobiye po organizatsii
i metodike proyektirovaniya (Planning of Machine-Building Plants; Reference Book
on the Organization and Methods of Planning) Moscow, Mashgiz, 1960. 379 p.
Errata slip inserted. 13,000 copies printed.

Ed.: B.I. Ayzenberg, Engineer; Reviewer: I.S. Zotov, Engineer; Ed. of Publishing
House: V.I. Yakovleva; Managing Ed. for Information Literature; I.M.
Monastyrskiy, Engineer; Tech. Ed.: Z.I. Chernova.

PURPOSE: This book is intended for engineers and technicians engaged in planning
machine-building plants.

COVERAGE: The authors discuss problems in the organization of planning machine-
building plants. Included is information on the makeup of planning organiza-
tions, development of documentation, selection of construction site, investi-
gations of plants to be reconstructed, preparation of planning, examination and

Card 1/9

Planning of Machine-Building (Cont.)

SOV/4556

approval of documentation, and mechanization of calculations and drafting. Definition of principal concepts are given and the contents of the planning documentation are discussed. No personalities are mentioned. References accompany two chapters.

TABLE OF CONTENTS:

Ch. I. Organization of Planning (By A.M. Palant, Engineer)

Planning organizations	5
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Planning the design and investigative work, and the operations of planning organizations	6
Apportionment of resources for planning and investigating, and financing planning organizations	9
Relations between customers ordering plans and the chief planning organizations	11
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Card 2/9

24.7/00

S/070/62/007/002/004/022
E132/E160

AUTHORS: Tsukerman, B.I., Meyl'man, M.L., and Sorokina, L.P.

TITLE: Radiospectroscopic orientation of crystals

PERIODICAL: Kristallografiya, v.7, no.2, 1962, 224-226

TEXT: The method described can be used for the orientation of crystals with paramagnetic impurities with an accuracy of about 1'. A simple two circle goniometer is used to turn the crystal specimen in the resonator chamber. The loci of particular resonances are followed and the courses are plotted out on a specially constructed sphere. From the shape of the loci the symmetry of the crystal can be identified. Some qualitative analysis of the nature of the paramagnetic impurities can be made.

There are 5 figures.

SUBMITTED: April 18, 1961

Card 1/1

L 1136-66 EWT(m)/EPT(c)/T/EWP(t)/EWP(b)/EWA(c) LJP(c)---JD/-3
 UR/0192/65/006/004/0643/0645
 ACCESSION NR: AP5021679 538.113

AUTHOR: Litovkina, L. P.; Meyl'man, M. L.; Andrianov, V. G.; Sergeeva, N. I.

TITLE: Electron paramagnetic resonance of Cr³⁺ ions in single crystals of MgMoO₄ 669
 66

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 4, 1965, 643-645

TOPIC TAGS: electron paramagnetic resonance, metal crystal, crystal structure, chromium, magnesium, molybdenum, magnetic susceptibility, crystallography

ABSTRACT: A study was made of the spectrum of the electron paramagnetic resonance of Cr³⁺ ions in MgMoO₄ crystals, synthesized at atmospheric pressure, at a frequency of 9.4 megacycles at room temperature. The concentration of chromium in the melt was approximately 0.06%. The presence of five physically non-equivalent systems of ions was established. Two of these (the so-called basic ionic systems) had a sufficient intensity of resonance transitions and were studied in detail. Experimental results indicate that MgMoO₄ crystals belong to the monoclinic system and that their symmetry belong to one of the three point groups: 2(C₂), m(C_{2h}), or 2/m (C_{2h}). The results obtained were verified by X-ray
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L 1136-66

ACCESSION NR: AP5021679

3

methods. Independently of the results of the electron paramagnetic resonance investigation, it was demonstrated that $MgMoO_4$ crystals can have one of the following spatial groups: $C_{2m}(C_{2h}^3)$, $C_2(C_2^3)$, or $Cm(C_2^3)$. A table shows the angles which determine the position of the axes of magnetic susceptibility of the basic ionic systems with respect to the crystallographic axes. "The authors are indebted to V. N. Rodkina for aid in carrying out the measurements and to V. Ya. Ershov and G. F. Belova for their help in computer calculations." Orig. art. has: 1 figure and 3 tables

ASSOCIATION: None

SUBMITTED: 15 Jan 65

ENCL: 00

SUB CODE: SS, SP

NR REF SOV: 001

OTHER: 005

mlb
Card 2/3

L 10574-66 EWI(I)/EWI(M)/EEC(K)-2/T/EWP(E)/EWP(K)/EWP(B)/EWA(M)-2/EWA(C) IJF(C)

ACC NR: AP5025392 WG/JD/WW/GG SOURCE CODE: UR/0101/65/007/010/3099/3101

AUTHOR: ^{44,55} Atsarkin, V. A.; ^{44,55} Litovkina, L. P.; ^{44,55} Meyl'man, M. L.

67
B

ORG: none

TITLE: Electron paramagnetic resonance and ^{21,44,55} spin-lattice relaxation of nonequivalent chromium ion systems in zinc tungstate single crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3099-3101

TOPIC TAGS: zinc compound, tungstate, chromium, EPR spectrum, spin lattice relaxation, single crystal, paramagnetic ion

ABSTRACT: ^{21,44,55} The authors study the electron paramagnetic resonance spectrum and temperature dependence of spin-lattice relaxation in admixed systems of Cr³⁺ ions in ZnWO₄ single crystals grown from a melt by the Czochralski method. The number of paramagnetic systems of ions and the position of the paramagnetic axes of these systems with respect to the crystallographic axes were determined by the "spherical plotting" method (B. I. Tsukerman, M. L. Meyl'man, L. P. Sorokina, *Kristallografiya*, 7, 224, 1962). At room temperature at a frequency of ~9.4 Gc in specimens with various Cr³⁺ concentrations (Cr/Zn ~ 0.1-0.5% in the initial charge) the pattern observed (in a field H ~ 3300 oersteds) was symmetric with respect to plane (010) of the crystal, corresponding to a monoclinic system. It was found that there is one main system and four secondary (pairwise-equivalent) systems of ions. The axial orientations

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ACC NR: AP5025392

of these systems are tabulated below.

Axial orientation of paramagnetic complexes
with respect to the crystal axes in ZnWO₄

	α_1	β_1	α_2	β_2	α_3	β_3	α_4	β_4	α_5
a	90°	93°30'	3°30'	104°00'	100°30'	24°50'	76°00'	100°30'	24°50'
b	0	90	90	24 00	99 30	68 40	24 00	80 30	111 10
c	90	3°30'	86°30'	85 20	14 00	76 00	94 40	14 10	76 00
	α_6	β_6	α_7	β_7	α_8	β_8			
a	76°00'	96°40'	16°00'	103°50'	96°40'	16°00'			
b	16 00	80 00	102 30	16 00	99 50	77 20			
c	97 50	12 00	80 00	82 00	12 00	80 00			

The ratio of line intensities for systems I, II and IV (with a 0.4% concentration of Cr in the charge) is ~50:15:1. A qualitative study of the effect of compensating

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ACC NR: AP5025392

dopants (Li, Na) on the line intensity ratio of the fundamental and secondary ion systems showed that an increase in the concentration of Li^{1+} ions causes a reduction in the intensities of electron paramagnetic resonance lines in secondary systems II and III; at a concentration of Li 46% (in the charge) the spectrum for these systems completely vanishes. The addition of sodium as a compensating impurity also attenuates the lines in systems II and III; however, these spectra were never completely eliminated in this case. An increase in Li concentration results in somewhat of an increase in the relative intensity of the electron paramagnetic resonance lines for systems I (fundamental), IV and V. The line intensities for systems IV and V were too small in all specimens for analysis of the electron paramagnetic resonance spectra. The resonance absorption spectra of systems II and III are analyzed in detail. A theoretical model is proposed for explanation of the experimental data. Orig. art. has: 3 figures, 1 table.

SUB CODE: 20/

SUBM DATE: 01Apr65/

ORIG REF: 004/

OTH REF: 001

HW

Card 3/3

L 10569-66 ENT(1)/ENT(m)/EWP(t)/EWP(b) LJP(c) JD/WJ/GG

ACC NR: AP5025396

SOURCE CODE: UR/0181/65/007/010/3108/3109

AUTHOR: Meyl'man, N. L.; Solov'yev, N. N.

80

44,55

44,55

74

ORG: none

B

TITLE: Paramagnetic resonance of gadolinium in artificial powellite

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3108-3109

TOPIC TAGS: calcium compound, molybdate, EPR spectrum, gadolinium, magnetic field intensity, crystal

ABSTRACT: Basic data are given from a study of the electron paramagnetic resonance spectrum of trivalent gadolinium ions in calcium molybdate crystals. The specimens were grown from a melt by the Czochralski method. The melt contained 0.02-1% Gd. The measurements were made at a frequency of ~9.4 Gc at room temperature. Curves are given for the energy levels of Gd³⁺ ions in powellite as a function of constant magnetic field strength for various orientations of the crystal in the field. A detailed analysis of the experimental data will be published in a later paper. The authors are grateful to P. I. Mikhina for assistance with the measurements, and to

21, 44, 55

44,55

Card 1/2

2

L 10569-66

ACC NR: AP5025396

^{44,55} Ye. N. Pinskaya and ^{44,55} G. F. Belova for calculations made on the digital computer. 6
Orig. art. has: 1 figure.

SUB CODE: 07,20/ SUBM DATE: 03Apr65/ ORIG REF: 002/ OTH REF: 006

bel
C-112

L 42301-66 EWI(m)/T/EWP(t)/ETI IJP(c) JD, G

ACC NR: AP6026679

SOURCE CODE: UR/0181/68/008/008/2336/2339

AUTHOR: Meyl'man, M. L.; Samoylovich, M. I.; Potkin, L. I.; Sergeyeva, N. I.

ORG: none

TITLE: Electron paramagnetic resonance of gadolinium in single crystals of barium molybdate

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2336-2339

TOPIC TAGS: electron paramagnetic resonance, crystal impurity, gadolinium, barium, molybdate, ionic crystal, single crystal property

ABSTRACT: This article briefly describes methods of synthesizing single crystals of $BaMoO_4$ and presents the results of investigating the electron paramagnetic resonance spectrum of impurity ions Gd^{3+} in these crystals at room temperature at a frequency of about 9.3 Gc. The parameters of the spin Hamiltonian describing the energy levels of the ions Gd^{3+} and the observed resonance spectrum are found. The data obtained are compared with results of investigating the EPR spectra of gadolinium in a series of geometrically similar molybdate crystals. An investigation of the isomorphism of ions Gd^{3+} in tetragonal molybdates revealed that the observed g-factors are low-anisotropic and identical (within limits of accuracy of the experiment) in all crystals of this group. The injection of ions Gd^{3+} occurs in the same manner, un-

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L 42301-66

ACC NR: AP6026679

2
like other ions of rare earths (Nd, Yd, etc.). The absence of a noticeable effect of compensating impurities on the parameters of the EPR spectrum indicates nonlocal compensation of the excess charge of the impurity ions. The authors thank V. Ya. Yershov for help in the calculations on the electron digital computer and L. I. Tsinober for his attention to this work. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 27Dec65/ ORIG REF: 005/ OTH REF: 004

Card

2/2

hh

ACC NR: AP7005367

SOURCE CODE: UR/0161/06/001/022/3653/3653

AUTHOR: Meyl'man, M. L.

CRG: none

TITLE: Paramagnetic resonance of gadolinium in synthetic stolzite

SOURCE: Fizika tverdogo tela, v. 3, no. 12, 1966, 3656-3658

TOPIC TAGS: gadolinium, electron paramagnetic resonance, spin resonance, tungstate, molybdate

ABSTRACT: The author compares values of the spin Hamiltonian parameters and the initial splittings of the levels of the ground state of the Gd^{3+} ions in the crystal-line field of stolzite, by extrapolating the published data for $CaWO_4$ and $CaMoO_4$. The values obtained in this manner were checked experimentally by measuring the EPR spectrum in synthetic stolzite single crystals prepared by the Czochralski method. The spectrum was obtained at 9.4 GHz and room temperature, and interpolated with the aid of a digital computer. Some of the extrapolation curves were taken from an earlier paper (FYZ v. 8, 2336, 1966). Certain of the values deviated greatly from the interpolated ones, indicating a somewhat less intense interaction between gadolinium ion and the surrounding atoms in tungstates as compared with molybdates. The results also lead to the conclusion that the assumed linear connection between the parameters of the structure unit cell and the parameters of the interaction is too crude an approximation. A detailed analysis of the results will be published later. The author

Card 1/2

ACC NR: AP7005267

thanks N. S. Vronskaya for help with the measurements and V. Ya. Yershov for the computer calculations. Orig. art. has: 3 formulas.

SUB CODE: 20/ SUBM DATE: 20Jun66/ ORIG REF: 005/ OTH REF: 003

Card 2/2

AUTHOR:

Meyl'man, M.L.

47-58-1-26/35

TITLE:

Graphic Problems on Geometrical Optics (Graficheskiye zadachi po geometricheskoy optike)

PERIODICAL:

Fizika v Shkole, 1958, pp 68-70 (USSR)

ABSTRACT:

The author suggests problems for pupils to "activate" their thinking and fix in their memory the newly acquired knowledge in the field of geometrical optics.

There are 9 figures.

ASSOCIATION:

612-ya srednyaya shkola, g. Moskva (The 612th Secondary School, Moscow)

AVAILABLE:

Library of Congress

Card 1/1

MEYL'MAN, M.L.

CHEBYKIN, G.N. (g.Polevskoy Sverdlovskoy oblasti); BELESKOV, R.I. (stantsiya Konotop); GOTSMAN, R.B.; MEYL'MAN, M.L.

Problems on artificial earth satellites. Fiz. v shkole 18 no.3:80-84
My-Je '58. (MIRA 11:4)

1. Severo-Kazakhskiy pedagogicheskiy institut, Petropavlovsk (for Gotsman). 2. 612-ya srednyaya shkola, Moskva (for Meyl'man).
(Artificial satellites--Problems, exercises, etc.)

22(1)

00V/47-59-2-28/31

AUTHOR: Meyl'man, M.S.

TITLE: Problems and questions on Optics (Zadani i voprosy po optike)

PERIODICAL: Fizika v shkole, 1959, Nr 2, pp 87-88 (USSR)

ABSTRACT: The article contains 19 different basic questions on optics.
There is 1 diagram.

ASSOCIATION: 612-ya shkola, Moskva (School Nr 612, Moscow)

Card 1/1

124-57-2-1953

Translation from Referativnyy zhurnal, Mekhanika, 1957, Nr 2, p 67 (USSR)

AUTHORS Voytkinskiy, Ya. I., Meylunas, V. F.

TITLE Investigation of the Hydrodynamic Characteristics of Ships Making Headway and Engaged in a Yawing Motion About a Vertical Axis (Issledovaniye gidrodinamicheskikh kharakteristik sudov pri dvizhenii lagom i vrashchenii vokrug vertikal'noy osi)

PERIODICAL Tr Leningr korablestroit. in-ta, 1954, Vol 14, pp 74-82

ABSTRACT Results obtained from experiments with three models of tug-boats are described. During a stationary headway motion of the models, characterized by Froude numbers relative to the width of up to 0.30 - 0.34, the magnitudes of the hydrodynamic resistance were determined, as well as the heeling moments for a number of constant values of the angle of heel. It is shown that during such a movement the point of intersection of the direction of the force exerted by the water on the model with its diametral plane is located between the waterline and the initial metacenter; the location of the point and the magnitude of the resistance coefficient depend only very slightly on the speed. In addition, the article contains data on the entrained mass and the entrained moment of

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124-57-2-1953

investigation of the Hydrodynamic Characteristics of Ships (cont.)

inertia of the water during nonstationary headway motion of the models without heeling or yawing about the vertical axis through the center of gravity. The magnitudes of the moments of the hydrodynamic forces are given for a constant-speed rotation. All these data may be utilized to evaluate the stability during the impingement of jerks from the towing cable, or under the action of a wind, as well as in the calculation of the warping and alongside docking of ships having shapes similar to those of the models investigated.

I P Lyubomirov

1. Ships--Motion. 2. Ship--Yaw. 3. Ships--Hydrodynamic Characteristics.

Card 2/2

MEYLUNAS, V.F.

Effect of nicotinic acid on the secretory and motor functions of the stomach. Trudy LSGMI 20:203-212 '54. (MLRA 10:8)

1. Kafedra propedevtiki vnutrennikh bolezney Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta, zav. kafedroy - prof. S.M.Ryss.

(NICOTINIC ACID, effects,
on gastric secretion & stomach motor funct.)
(STOMACH, effect of drugs on,
nicotinic acid, on motor & secretory funct.)
(GASTRIC JUICE,
secretion, eff. of nicotinic acid)

MEYLUNAS, V.F.

Effect of vitamin B1 on the secretory-motor function of the stomach
in peptic ulcer. Trudy LSGMI 20:213-224 '54. (MLRA 10:8)

1. Kafedra prpedevtiki vnutrennikh bolezney Leningradskogo sanitarno-
gigiyenicheskogo meditsinskogo instituta, sav. kafedroy - prof. S.M.
Ryss.

(PEPTIC ULCER, physiology,

eff. of vitamin B1 on stomach motor & secretory funct.)

(STOMACH, effects of drugs on,

vitamin B1, on motor & secretory funct. in peptic ulcer)

(VITAMIN B1, effects,

on stomach motor & secretory funct. in peptic ulcer)

(GASTRIC JUICE,

secretion, eff. of vitamin B1 in peptic ulcer)

fish in water
DORIN, Viktor Sergeyevich; MEYLUNAS, V.F. otvetstveny redaktor;
MISHKEVICH, G.I., redaktor; KAMOLOVA, V.M., tekhnicheskiy redaktor

[How and why a ship floats] Kak i pochemu plavaet sudno.
Leningrad, Gos. soiuзное izd-vo sudostroit. promyshl., 1957
113 p. (MLRA 10:5)
(Ships)

MEYLUNAS, V.F.

Calculating diagrams of the static stability of a disabled ship
using cross-curves of stability. Trudy LKI no.26:119-122 '59.
(MIRA 14:9)

1. Kafedra teoreticheskoy mekhaniki Leningradskogo korablestro-
itel'nogo instituta.

(Stability of ships)

LUCHANSKIY, Iosif Aleksandrovich; YANOVSKIY, Aleksandr Aleksandrovich;
MEYLUMAS, V.F., nauchnyy red.; STOLYARSKIY, L.L., red.;
FRUMKIN, P.S., tekhn.red.

[Ships with wings] Suda na kryl'iax. Leningrad, Gos.soiuznoe
izd-vo sudostroit.promyshl., 1960. 109 p. (MIRA 13:11)
(Planing hulls)

Mathematics

On some problems in the theory of differential equations. *Dokl. Akad. Nauk SSSR*, 40 (1963), 55-58.
On the theory of differential equations. *Dokl. Akad. Nauk SSSR*, 40 (1963), 55-58.
Sur les problèmes de R-problème. *Ann. Inst. Fourier*, (3), (1953), 5-20.
On problems of the theory of differential equations. *Dokl. Akad. Nauk SSSR*, 40 (1963), 55-58.
Grave (1940), 117-16.
K probleme matematika - Surveys liya tselykh transtsendentnykh funktsiy. *Dokl. Akad. Nauk SSSR*, 40 (1963), 55-58.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.I.,
Rashevskiy, P.K.
Moscow-Leningrad, 1948

MEYMAN, N. N.

Meyman, N. An estimation of the distance between two zeros of a class of integral functions. (C. R. Akad. Sci. URSS (N.S.) 53, 11-14 (1946))

The integral functions $u(z)$, $v(z)$ form a real pair if a, b are real for real z and if for all real a, b the function $u(z) + bv(z)$ has no complex zeros. (It is also supposed for simplicity that a, b have no zeros in common.) Such pairs have been examined by N. Tschepkharow [same C. R. (N.S.) 35, 193-197 (1942); these Rev. 4, 214], N. Meyman [ibid. 40, 46-49 (1943); these Rev. 6, 59] and B. Levin [ibid. 41, 47-50 (1943); these Rev. 6, 59]. It is known that the zeros of $u(z) + v(z)$ (which of course lie on the real axis) are real, and that the condition $|u(z) + v(z)|/|u(z) + v(\bar{z})| = 1$ for all $y > 0$ ($z = x + iy$) is necessary and sufficient that u, v form a real pair. The present work deals with the zeros of u, v . The principal results are as follows: (I) Let u, v be a real pair, and define μ by

$$\limsup_{y \rightarrow \infty} y^{-1} \log |u(\xi y) + v(\eta y)| = -2\mu.$$

Then μ is finite and nonnegative and every interval on the real axis of length $\frac{1}{\mu}$ or of length $\frac{1}{\mu}$ contains at least one zero of $u(z)$ or $v(z)$ or contains at least one zero of $u(z)$ and one zero of $v(z)$, respectively. (II) Let u, v be a real pair and denote the zeros of $F(x) = u(x) + v(x)$ by $\alpha_1, \alpha_2, \dots$ (it is known that $\beta_1 > 0$). Let $d_1(a, b)$, $d_2(a, b)$ be the greatest lower and least upper bounds of the function $\sum_{\alpha_j \in (a, b)} (\alpha_j - a)^{-1} + \beta_1$ in $a < x < b$. Then the distance between each consecutive pair of zeros of $u(z)$ in $a \leq x \leq b$ (likewise for $v(z)$) is included between $\pi/(\mu + d_1(a, b))$ and $\pi/(\mu + d_2(a, b))$. Theorem (II) implies theorem (I). L. M. Sheffer (State College, Pa.)

Source: Mathematical Reviews,

Vol 8 No. 6

MEYMAN, N.N.

76
 Meiman, N. N. On a class of entire functions. Doklady
 Akad. Nauk SSSR (N.S.) 62, 293-296 (1948). (Russian)
 In the formula $F(z) = g(z) + ih(z)$, g and h are integral func-
 tions assuming real values on the real axis and without com-
 mon zeros (the last assumption avoids nonessential complica-
 tions). Say that $F(z) \in B$, if $f(z) = (g(z) + ih(z))/(g(z) - ih(z))$

is bounded in $y > 0$, $z = x + iy$. Theorem 1. $F(z) \in B$ if and only if the following conditions are satisfied.

$$\begin{aligned} g(z) &= R(z)e^{u(z)} \prod [(1 - z/a_n)e^{z/a_n}] = R(z)g_1(z), \\ h(z) &= T(z)e^{v(z)} \prod [(1 - z/b_n)e^{z/b_n}] = T(z)h_1(z). \end{aligned}$$

Here R and T are polynomials whose degrees are of the same parity and whose highest terms have the same sign, u and v are integral functions, the products are canonical products with real simple zeros. The zeros of one product are separated by those of the other. The Taylor coefficients of R, T, u, v are real. Also $u(z) - v(z) + \sum [P_n(z/a_n) - P_n(z/b_n)] = \text{constant}$ and $h_1'(x)g_1(x) - h_1(x)g_1'(x) > 0$ at all points of the real axis with at most one exception. Theorem 2. If $F(z)$ has at most a finite number of zeros in $y < 0$, then $F(z) \in B$ if and only if $-f$ is not an asymptotic value of $h(z)/g(z)$. Theorem 3. If $F(z) \in B$ and if $\alpha, \beta, \gamma, \delta$ are real numbers with $\alpha\delta - \beta\gamma > 0$, then $TF(z) = (\alpha g(z) + \beta h(z)) + i(\gamma g(z) + \delta h(z)) \in B$; F and TF have the same number of zeros in $y < 0$. Theorem 4. If, for three essentially different systems $\alpha, \beta, \gamma, \delta$, TF has only a finite number of zeros in $y < 0$, then $F \in B$. Proofs are outlined; theorem 1 is based on previous results of the author [C. R. (Doklady) Acad. Sci. USSR, 62, 293-296, 1948] (1943); these Rev. 6, 1948.

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