

ACCESSION NR: AT4005956

by weight, respectively), to levels considerably below those attainable by three-fold refining using the older techniques; comparably low levels of N₂ and C (0.002 and 0.004%, resp.) were also obtained. The Zr bars obtained showed high plasticity (Brinell hardness of 40-45 kg/mm²), per grain boundaries and extremely high corrosion resistance. The authors conclude that these results confirm the mechanism of impurity transfer suggested by Sciefe and Wylie. Orig. art. has: 2 tables and 1 figure.

ASSOCIATION: Inzhenerno-fizicheskiy institut, Moscow (Institute of Physics and Engineering)

SUBMITTED: 00

ENCL: 00

SUB CODE: M4

NO REF SOV: 003

OTHER: 004

2/2
Card

ACCESSION NR: AT4005957

8/2755/63/000/004/0018/0033

AUTHOR: Yemel'yanov, V. S.; Borkov, N. V.

TITLE: Effect of hydrogen and nitrogen on corrosion resistance of zirconium in water and steam

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chisty*kh metallqv, no. 4, 1963, 18-33

TOPIC TAGS: zirconium corrosion, hydrogen effect

ABSTRACT: The effect of H₂ and N₂ on corrosion resistance of high purity Zr sheets (1 mm thick) was investigated. Absorption of H₂ was studied in a laboratory device, using specific amounts of H₂ at various temperatures under a high vacuum. The amount of H₂ required for absorption was calculated by means of the Mendeleev-Klapeyron equation, and the amount of H₂ absorbed was determined by a gravimetric method. At a temperature of 700C, a uniform distribution of H₂ in a cross section of the specimen was reached in 30-40 minutes. Corrosion tests of specimens exposed to H₂ were carried out in two series in a stainless steel autoclave at 350C and 170 atm. In the first series of experiments, specimens containing 0.001, 0.01, and

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0.015% H_2 were exposed to distilled water for up to 950 hours; the hydrogen absorption was tested after 100, 200, 440, 670 and 950 hours. In the second series of experiments, specimens containing 0.005, 0.01, 0.02 and 0.025% were exposed to distilled water in sealed ampules of stainless steel and tested at 250°C. The kinetics of the corrosion process were determined from the increasing weight of the specimens. It was found that an increase in the H_2 content in a Zr specimen decreased its corrosion resistance in steam. The effect of N_2 on Zr-corrosion resistance was tested on 30 x 10 x 1 mm specimens. Absorption of N_2 was studied by the N.V. Borkov method, in the range of 0.006-0.055% of absorbed N_2 . Corrosion tests were carried out in stainless steel autoclaves at 300 C, 88 atm. pressure; 350 C, 170 atm. pressure; and 400 C, 280 atm. pressure. The kinetics of the corrosion process were studied by weighing the specimens after stated time intervals. After the specimens were removed from the autoclave, a loose layer of oxide was found on the surface. It was concluded that the corrosion resistance of Zr in water and steam is more markedly decreased by N_2 than by H_2 . Orig. art. has: 1 formula, 9 figures and 9 tables.

ASSOCIATION: Inzhenerno-fizicheskiy institut, Moscow (Engineering Physics Institute)

Card 2/3

ACCESSION NR: AT4005957

SUBMITTED: 00

DATE ACQ: 17Jan64

ENCL: 00

SUB CODE: MM,IC

NO REF SOV: 004

OTHER: 003

Card 3/3

ACCESSION NR: AT4005959

S/2755/63/000/004/0058/0063

AUTHOR: Yemel'yanov, V. S.; Yavstyukhin, A. I.; Leont'yev, G. A.; Semenikhin, A. N.

TITLE: Growing of molybdenum single crystals and their properties

SOURCE: Msocow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chistykh metallov, no. 4, 1963, 58-63

TOPIC TAGS: molybdenum single crystal, molybdenum single crystal property, molybdenum single crystal growing, molybdenum single crystal microhardness, molybdenum elasticity modulus, molybdenum internal friction, molybdenum property, single crystal growing, single crystal property

ABSTRACT: For the majority of low-melting point metals the methods of growing single crystals are well established and described in the literature. On the other hand, growing of single crystals of high-melting point metals, such as Mo, W, Cb, and Ta, presents some experimental difficulties. In this connection, the authors tried to grow molybdenum single crystals from the gaseous phase of an appropriate compound by the method of thermal dissociation. As bases for deposition, single-crystal filaments 0.1 mm in diameter were prepared from polycrystalline molybdenum wire by recrystallization, applying heat at 1550-1650C for

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4-5 hours.. Such monocrystalline filaments could be obtained in 10 to 90 mm lengths. The method and test equipment used are described in the paper of V. S. Yemel'yanov et al. (Yemel'yanov, V. S., Leont'yev, G. A., Yevstyukhin, A. I.: "Metallurgiya i metallovedeniye chisty*kh metallov," vy* p. III. M., Gosatomizdat, 1961, str. 137). The subsequent growing of crystals was performed from the gaseous state of MoCl_5 at temperatures of 1500-1600C in the beginning of the process, and then at 1280-1300C. A higher rate of deposition occurred at the higher temperatures. Molybdenum single crystals were grown up to 3 mm thick and 90 mm long. The single crystals obtained showed high ductility at room temperature, could be easily bent to a large angle and cold-rolled. In contrast to this, polycrystalline deposits obtained from the same gaseous phase were brittle in bending. In addition, tests were made to determine hardness, modulus of elasticity, and internal friction values of molybdenum single crystals. The hardness of molybdenum single crystals was considerably lower than that of the commercial metal. The microhardness of monocrystals was 180-200 kg/mm^2 (under 200 gr load), while that of the common commercial metal in an annealed state was 230-260 kg/mm^2 . The modulus of elasticity was determined from resonance frequencies of flexural vibrations of freely suspended cylindrical specimens. Single crystals showed somewhat higher E values than samples of commercial metal. The internal friction was determined from the damping of flexural vibrations. Quenched single crystals

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ACCESSION NR: eAT4005959

showed low values of internal friction. After a slight plastic bending deformation, a considerable increase of internal friction was observed. In plastic bending the number of dislocations increased, causing an increase of internal friction. When a crystal contained an abundant number of points of disorder subject to fixing by quenching, the latter might migrate to the dislocations and fix them, decreasing thus the level of internal friction. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Inzhenerno-fizicheskiy institut, Moscow (Engineering-Physics Institute)

SUBMITTED: 00

DATE ACQ: 17Jan64

ENCL: 00

SUB CODE: ML

NO REF SOV: 002

OTHER: 004

Card 3/3

YEMEL'YANOV, V.S.

Fifth state of matter. Nauka i shizn' 30 no.1:33-34 Ja '63.
(MIRA 16:4)

1. Chlen-korrespondent AN SSSR.
(Particles(Nuclear physics))

S/025/63/000/001/001/003
D205/D307

AUTHOR: Yemel'yanov, V.S., Corresponding Member of the AS
USSR

TITLE: 2. From the history of atomic research in our
country

PERIODICAL: Nauka i zhizn', no. 1, 1963, 34-35

TEXT: A brief summary of the early atomic research in
Russia, beginning with the work of A.P. Sokolov, V.I. Bernadskiy,
I.A. Antipov, and P.P. Orlov and ending with the mention of the first
Soviet reactor. A description is given of the formation of Radiyevy
institut (Radium Institute), Institut geokhimi i analiticheskoy
khimii Akademii nauk SSSR (Institute of Geochemistry and Analytical
Chemistry of the Academy of Sciences USSR) and Gosudarstvennyy insti-
tut redkikh metallov (State Institute of Rare Metals). The work of
these organizations and of accompanying developments in the chemical
industry are outlined.

Card 1/1

YEMEL'YANOV, V. S.; YEVSTYUKHIN, A. I.

"Rust-resisting property of zirconium and its alloys in water and steam at high temperatures."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

YEMEL'YANOV, V.S.

On the forthcoming International Conference on Peaceful Uses
of Atomic Energy. Vest. AN SSSR 3/4, no.6:79-82 Jo '64

(MIRA 17:8)

1. Chlen-korrespondent AN SSSR.

YEMEL'YANOV, V.S.

Conference on the peaceful uses of atomic energy. Vest. AN
SSSR 34 no.12:41-45 D '64 (MIRA 18:1)

1. Chlen-korrespondent AN SSSR.

L 2913-66 EWP(e)/EPA(s)-2/ENT(m)/EPF(c)/EWP(1)/EPF(n)-2/T/EWP(t)/ENP(b)/EWA(h)
 IJP(c) JD/NW/JG

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BOOK EXPLOITATION

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669.822:621.039.543.4+669.298+669.824:621.039.543.6

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71
251

YEmel'yanov, Vasilii Semenovich; YEvsyukhin, Aleksandr Ivanovich

Metallurgy of nuclear fuels; properties and principles of the technology of uranium, thorium and plutonium (Metallurgiya yadernogo goryuchego; svoystva i osnovy tekhnologii urana, toriya i plutoniya) Moscow, Atomizdat, 1964. 450 p. illus., biblio. Errata slip inserted. 1,950 copies printed.

TOPIC TAGS: metal purification, uranium alloy, metal compound, thorium, thorium alloy, plutonium, plutonium alloy, metal physical property, metal melting, solid mechanical property, nuclear fuel, metal heat treatment, radiation effect, refractory compound

PURPOSE AND COVERAGE: In principle the book is a course of lectures presented by the authors at the Moscow Engineering Physics Institute. It examines the physical and chemical properties of uranium, thorium and plutonium and their important compounds and alloys. The characteristics of nuclear raw materials and the theory and technology of their processing, separation, and refining are discussed. Basic requirements of nuclear fuels, methods for their physico-chemical and heat treatment used in the production of maximum burn-up

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and radiation stability are examined. The book is a textbook for students, candidates and university students taking courses in order to increase their qualifications. It can also be used by engineering and technical workers and by scientific personnel of institutes and enterprises who are engaged in the metallurgy and metallography of nuclear materials.

TABLE OF CONTENTS (abridged):

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Ch. I. Introduction -- 5

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Ch. III. Mechanical properties of uranium -- 30

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- Ch. IX. Refractory uranium compounds with carbon, nitrogen, silicon, beryllium,
boron and sulphur -- 124
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Ch. VII. Methods of thorium processing and manufacture of products -- 348

PART 3. PLUTONIUM

Ch. I. Metallic plutonium -- 353

Ch. II. Plutonium alloys and compounds -- 377

Ch. III. Methods of plutonium extraction and purification -- 396

Ch. IV. Production methods of metallic plutonium from salts and regeneration of slag by-products -- 422

Bibliography -- 437

SUB CODE: MM, NP

SUBMITTED: 09 Nov 64

NO REF SOV: 103

OTHER: 304

PC
Card 4/4

YEMEL'YANOV, V.S.

Science and life. Nauka i zhizn' 30 no.4:32-34 Ap '63.
(MIRA 16:7)

1. Chlen-korrespondent AN SSSR.
(Moscow--Universities and colleges)

LAKHIN, Aleksandr Fedorovich, polkovnik; BYZOV, Boris Yefimovich,
podpolkovnik; PRISHECHKA, Ivan Mitrofanovich, podpolkovnik;
KUDRYAVTSEV, M.K., general-leytenant tekhn. voysk, red.;
YEMEL'YANOV, V.T., polkovnik, red.; KOKINA, N.N., tekhn.red.

[Military topography; a textbook for students of training
units and sergeants] Voennsia topografiia; uchebnik dlia
kursantov uchebnykh podrazdelenii i serzhantov. Moskva,
Voenizdat, 1963. 269 p. (MIRA 17:1)

(Military topography)

SEMENOV, N.R., polkovnik; GRIGOR'YEV, G.M., polkovnik; VESELOV,
S.P., inzh.-polkovnik; ANDREYEV, N.R., polkovnik;
ROMANOV, D.K., kapitan 1 rang; ~~YAKEL'YANOV, V.T.,~~
polkovnik, red.

[Organization and armament of armies and navies of capi-
talist countries] Organizatsiia i vooruzhenie armii i flotov
kapitalisticheskikh gosudarstv. Moskva, Voenizdat, 1965.
545 p. (MIRA 19:1)

MUSTAFAYEV, I.D.; YEMEL'YANOVA, V.V.

Duration of the stage of tillering and stalk formation in hard
wheat samples of various geographical origins in Azerbaijan. Izv.
AN Azerb. SSR. Ser. biol. i med. nauk no.1:25-31. '63.

(NIR 17:5)

BARANOV, V.I.; PAVLOTSKAYA, F.I.; FEDOSEYEV, G.A.; TYURYUKANOVA, E.B.;
RODIONOVA, L.M.; BABICHEVA, Ye.V.; ZATSEPINA, L.N.; VOSTOKOVA, T.A.;
Prinimali uchastiye: YEMEL'YANOV, V.V.; BELYAYEVA, L.I.; LEVKINA, N.I.;
MOLCHANOVA, I.V.

Distribution of Sr^{90} on the surface horizon of soils of the Soviet
Union during 1959-1960. Atom. energ. 18 no.3:246-250 Mr '65.
(MIRA 18:3)

ACC NR: AP7005555

SOURCE CODE: UR/0108/67/022/001/0068/0074

AUTHOR: Filonenko, V. A. ^(Active member); Yemel'yanov, V. Ye. ^(Active member); Stel'mashenko ^(Active member)

ORG: Scientific Technical Society of Radio Engineering and Electronics (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektroniki)

TITLE: Errors in determining the bearing by means of instantaneous amplitude comparison of signals in systems with elliptically polarized antennas

SOURCE: Radiotekhnika, v. 22, no. 1, 1967, 68-74

TOPIC TAGS: direction finding, direction instrument, helical antenna, *pulse signal,*
pulse amplitude

ABSTRACT: The authors consider an error which may occur in determining the bearing of a source with unknown radiation polarization when the method of instantaneous amplitude comparison of signals is employed. A formula is derived for computing the bearing characteristics of antennas with elliptical polarization. Some computation results for the case of regular helical antennas are given. It was concluded that the bearing characteristics of a system which is used to develop split bearing indication of regular helical antennas with helixes wound in the same direction vary when the ellipticity factor changes and during variations of the ellipse of the incident field. When the bearing of an object is determined using the method of the instantaneous amplitude comparison of signals in respect to the bearing characteristic of the orientation of the incident field is unknown, the result may be incorrect. If the helixes are wound in opposite directions it is impossible to determine

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UDC: 621.396.982

ACC NR: AP7005555

the bearing of the object.

[CS]

SUB CODE: 09/ SUBM DATE: 20th 64/ OTH REF: 001/

Card 2/2

YEMEL'YANOV, Ya.

Wood pulp hydrolysis. Tekh.mol.23 no.7:40 J1'55. (MIRA 8:10)
(Wood--Chemistry)

YEMEL'YANOV, Ya.

Chemical energy from wood waste. Tekh.mol.24 no.4:24 Ap '56.
(Wood--Chemistry) (MIRA 9:7)

YEMEL'YANOV, Ya.

With crown and roots. Nauka i zhizn' 27 no.3:67 Mr '60.

(MIRA 13:6)

(Lumbering)

AUTHOR: Yemel'yanov, Ya. 30V-25-58-P-35/61

TITLE: Artificial Vanillin (Iskustvennyy vanilin)

PERIODICAL: Nauka i zhizn', 1958, Nr 8, p 67 (USSR)

ABSTRACT: Vanilla, a dark brown pod exhaling the pleasant vanilla scent, is being used for many purposes in confectionery, perfumery and lately for preparing drugs. Only 3% vanillin is found in a vanilla pod, and this accounts for the high cost. For this reason scientists are endeavoring to find methods for producing vanilla artificially. The waste products of cellulose paper factories (sulfite-alcohol residual liquid) have proved to be a useful raw material for making artificial vanillin. The Syas'skiy tsellyulozno-bumazhnyy kombinat (The Syas' Cellulose-Paper Combine), Leningrad Oblast', was the first in the USSR to start the production of vanillin obtained from residual liquids of processed sulfite-alcohol. The method of making vanillin is described in the article. The technological process has been developed by the Vse-soyuznyy nauchno-issledovatel'skiy institut sul'fitno-

Card 1/2

Artificial Vanillin

SOV-25-58-8-35/61

spirtovoy i gidroliznoy promyshlennosti (All-Union Scientific
Research Institute of the Sulfite-Alcohol and Hydrolysis In-
dustry).

1. Vanillin--Synthesis

Card 2/2

AUTHOR: Yemel'yanov, Ya.

SOV/25-59-1-34/51

TITLE: A House of Shavings (Dom iz struzhek)

PERIODICAL: Nauka i zhizn', 1959, ²⁶ANr 1, p 67 (USSR)

ABSTRACT: The Engineers Prokhorov and Romanov, Co-Workers of the Tsentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki drevesiny (Central Scientific Research Institute of Mechanical Processing of Wood Pulp), developed a project for building a new type of house - out of shavings and turnings and other waste material of the wood pulp industry. Applying high pressure, the waste material is pressed into plates. The model samples of houses built of these plates proved to be resistant against rain, heat and cold. There is one caricature.

Card 1/1

L 04909-67 EWT(d)/EWP(1) IJP(e) GG/BB/GD

ACC NR: AT6022681

SOURCE CODE: UR/0000/68/000/000/0127/0130

AUTHOR: Yemel'yanov-Yaroslavskiy, L. B.

46
B

ORG: none

TITLE: Fundamental concepts of the work of a visual analyzer ^{16C} in an informal automaton

SOURCE: Moscow, Institut avtomatiki i telemekhaniki. Samoobuchayushchiesya avtomaticheskkiye sistemy (Self-instructing automatic systems). Moscow, Izd-vo Nauka, 1966, 127-130

TOPIC TAGS: pattern recognition, finite automaton, circuit design

ABSTRACT: The author examines the general mechanism of the work of a visual analyzer. The conditions required for an automatic device to purposefully function with visual information is studied, with special attention directed at the considerations underlying the design and operation of the information conversion unit (or "eye" of the machine). The static and dynamic effect of visual information on the automaton are considered, and a general exposition of the operation of a possible visual analyzer or sensor is given. The role of the solid angle of vision, the informational center of gravity, static and iterative perception, and neuron circuit structure are analyzed. Reading rate factors are discussed and the principle of the dynamic perception

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L 01909-67

ACC NR: AT6022681

of visual information is explained. Recognition problems in the case of objects of both simple and complex configuration are considered, and it is shown that no self-contained, independent recognition problem exists for the automaton, but that the functioning of the visual and all the other analyzers is subordinate to a common problem: the minimization of the field of activity. Recognition is seen as an associative process which is developed on the basis of non-comprehension by the machine.

SUB CODE: 00,00/ SUBM DATE: 02Mar60

na
Card 2/2

EMEL'YANOV, YA. G.

23187 Iz opyta eksploatatsii transformatornogo masla. (S primech. red.) Elektr. Stantsii, 1949, No. 7, c. 57.

SO: LETOPIS' NO. 31, 1949

YEMEL'YANOV, Ya. G.

Electric Transformers

Change of acid transformer oil in 110 and 220 KV
lead-ins, Energ, biul, no. 2, 1952.

MLRA, Library of Congress, May 1952, Unclassified.

YEMEL'YANOV, YA. G., SMIRNOVA, I. V.

Centrifuges

Experience in operating a centrifuge. Rab. energ. 2 No. 4:24-25 Ap '52.

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

1. YEMEL'YANOV, Ya. G.
2. USSR (600)
4. Electric Transformers
7. Device for protection of inlet oil against oxidation.
Energ. biul. No. 8, 1952.

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

1. YEMEL'YANOV, Ya. S.
2. USSR (600)
4. Centrifuges
7. Accessory to a stationary centrifuge operating under field conditions. *Enrg. biul.*
No. 10, 1952.

9. Monthly List of Russian Accessions. Library of Congress. March, 1963. Unclassified

YEMEL' YANOV, Ya.G.

Device for testing transformer oil during equipment inspection. *Energ. biul.*
no.9:31-32 S '53. (MLRA 6:8)

(Electric transformers)

YEMEL'YANOV, YA. G.

AID P - 678

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 13/24

Authors : Plokhin, A. M., Foreman, Smirnova, I. V., Eng. and
Yemel'yanov, Ya. G., Eng.

Title : New construction of the electric heater in a centrifugal
machine

Periodical : Energetik, 7, 22, J1 1954

Abstract : The new electric heater for the NSM-3 type of centrifugal
machine is briefly described and illustrated by a drawing.

Institution : None

Submitted : No date

Yemel'yanov, Ya. G.

Subject : USSR/Electricity AID P - 883
Card 1/1 Pub. 29 - 16/23
Author : Yemel'yanov, Ya. G., Eng.
Title : ~~Device for pumping transformer oil from the collecting tank of the centrifugal separator~~
Periodical : Energetik, 10, 24, 0 1954
Abstract : The author briefly describes the device. One drawing.
Institution : Not given
Submitted : No date

YE NEEL VANDY Va G.

ACC NR: AT6022680

SOURCE CODE: UR/0000/66/000/000/0113/0126

AUTHOR: Yemel'yanov-Yaroslavskiy, L. B.

43
B11

ORG: none

TITLE: Principles of an informal self-organizing automaton 4

SOURCE: Moscow, Institut avtomatiki i telemekhaniki, Samoobuchayushchiyesya avtomaticheskiye sistemy (Self-instructing automatic systems). Moscow, Izd-vo Nauka, 1966, 113-126

TOPIC TAGS: self organizing system, automaton, neuron, bionics, circuit design

ABSTRACT: The author considers an automatic device based on certain hypotheses regarding the properties of natural automatons. The primary purpose of the paper is in verifying and refining these postulates. An expository approach, limited to fundamental automaton notions derived from biological data and research engineering experiments is presented. The automaton is designed on the basis of neurons, with the selection of the neuron characteristics seen as the paramount problem, since the relation of machine properties to neuron properties is an intimate one. Currently accepted physiological views are incorporated in the determination of the hypothetical machine neuron. Not all the properties of natural neurons are taken

Card 1/2

L 04897-67

ACC NR: AT6022680

into account in this approach. The arrangement of the hypothetical neuron is largely based on information concerning the natural neuron. However, various speculative considerations were of equal weight in the treatment of the problem. The fundamental principles of the automaton are reviewed, and the plane neuron chain is described as the essential machine element. A system of neuron postulates is outlined, and it is shown that in a system consisting of elements with the properties described, self-organization will be present and such a system will have the ability to "work." The concepts of self-organization and work as they apply to an automatic machine are defined in the form of (intuitive) conditions and criteria. The formation of the primary network and "embryogenesis" as the first step in the existence of the automaton are analyzed, and the structure and fundamental mechanisms of the neuron chain are discussed. The work of the automaton is studied in the light of these mechanisms, together with an analysis of "rhythm memorization." Four working mechanisms or principles are seen as fundamental to the system: information locking, compensation, generalization, and excitation centers; these mechanisms must be provided, among other things, by the neuron. Two modalities of neuron interaction, vital to system operation, are distinguished and explained: contact interaction and field interaction. Orig. art. has: 12 figures.

SUB CODE: 06,09/ SUBM DATE: 02Mar66

ms
Card 2/2

YEMEL'YANOV, Ye.; BOCHAROV, M.; VOZNYUK, V.; TIMOSHIN, D.

Towards new achievements. Radio no.8:3 Ag '62. (MIRA 15:2)

1. Nachal'nik Novosibirskogo radiokluba (for Bocharov).
2. Predsedatel' soveta Novosibirskogo radiokluba (for Voznyuk).
3. Nachal'nik Sumskogo radiokluba (for Timoshin).
(Radio operators)

L 15712-66 EWT(1)/EWT(m)/EWP(m)/EWA(d)/T/FCS(k)/EWA(1) WW/JW/NE

ACC NR: AT6003104

SOURCE CODE: UR/3181/63/000/015/0325/0330

AUTHOR: Dorofeyev, V.M.; Levin, V.Ya.; Yemel'yanov, Ye.I.

ORG: None

TITLE: Method of testing powder type gas generators

SOURCE: Kuybyshev. Aviatsionnyy institut. Trudy, no. 15, pt. 2, 1963. Doklady kustovoy nauchno-tekhnicheskoy konferentsii po voprosam mekhaniki zhidkosti i gaza (Reports of the Joint scientific-technical conference on problems of the mechanics of liquid and gas), 325-330

TOPIC TAGS: gas engineering, combustion engineering, test method

ABSTRACT: The experimental unit permitted oscillograph recording of the change in weight of the fuel charge during the combustion process. A scheme of the apparatus is given in the article. The experiments were aimed at answering a series of practical questions in the design of more efficient powder type gas generators: determination of the gas flow rate through the nozzle, temperature of the gas before the nozzle, velocity of the gas through the nozzle opening, and the magnitude of the linear rate of fuel combustion in the chamber, as well as measurement of the change in weight of the fuel. Formulas are developed in the article for calculation of the temperature of the gas before and

Card 1/2

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B+1

2/4, 5

L 15712-66

ACC NR: AT6003104

after the nozzle. No actual experimental data are given. Orig. art. has: 14 formulas and 5 figures.

SUB CODE: 10 SUBM DATE: 00/ ORIG REF: 001/ SOV REF: 000/ OTH REF: 000
21

TS
Card 2/2

YEMEL'YANOV, Ye.M.

Recent data on sediments of the Mediterranean Sea. Dokl.AN SSSR.
137 no.6:1437-1440 Ap '61. (MIRA 14:4)

1. Chernomorskaya nauchno-eksperimental'nayaa stantsiya, institut
okeanologii AN SSSR. Predstavleno akademikom N.M.Strakhovym.
(Mediterranean Sea--Sediments (Geology))

YEMEL'YANOV, Ye.M.

Some data on the suspended material in the Black and Mediterranean Seas. Okeanologiya 2 no.4:664-672 '62. (MIRA 15:7)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya stantsiya Instituta okeanologii AN SSSR.

(Black Sea—Sedimentation and deposition)

(Mediterranean Sea—Sedimentation and deposition)

YEMEL'YANOV, Ye.M.; CHUMAKOV, V.D.

Some data on the study of interstitial waters in the Marmara and
Mediterranean Seas. Dokl. AN SSSR 143 no.3:701-704 Mr '62.
(MIRA 15:3)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya
stantsiya Instituta okeanologii AN SSSR. Predstavleno akademikom
N.M.Strakhovym.

(Marmara Sea--Water--Composition)(Mediterranean Sea--
Water--Composition)(Sedimenta(Geology))

YEMEL'YANOV, Ye.M.; SHIMKUS, K.M.

Recent data on deep-sea Neo-Euxinic deposits of the Black Sea.
Okeanologiya 3 no.3:482-494 '63. (MIRA 16:8)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya
stantsiya Instituta okeanologii AN SSSR.
(Black Sea--Deep-sea deposits)

YEMEL'YANOV, Ye.M.; SHIMKUS, K.M.

Study of the variability of deep-sea sediments in the Black Sea. Okeanologiya 2 no.6:1040-1049 '62. (MIRA 17:2)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya stantsiya Instituta okeanologii AN SSSR.

KOCHENOV, A.V.; BATURIN, G.N.; KOVALEVA, S.A.; YEMEL'YANOV, Ye.M.;
SHIMKUS, K.M.

Uranium and organic matter in the sediments of the Black and
Mediterranean Seas. Geokhimiia no.3:302-313 Mr '65. (MIRA 18:7)

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001962630003-1

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CIA-RDP86-00513R001962630003-1"

BRYUSHKOV, V.I.; FIS'MAN, B.A.; YEMEL'YANOVA, Ye.V., red.

[High-efficiency attachments for grinding cutting tools]
Vysokoproizvoditel'nye prispособlenia dlia zatociki re-
zhushchego instrumenta. Leningrad, Lenizdat, 1964. 53 p.
(MIRA 12:1)

YEMEL'YANOV, Yu., inzh.

"Outboard motors" by I.N. Tikhomirov. Reviewed by IU. Emel'ianov.
Za rul. 17 no. 4:31 Ap '59. (MIRA 12:6)
(Outboard motorboats)
(Tikhomirov, I.N.)

YEMEL'YANOV, Yu. (Kiyev)

Mechanisms are our helpers. Grazhd.av. 20 no.7:26 JI '63.
(MIRA 16:9)

1. Nachal'nik otдела perevozok Borispol'skogo aeroporta.
(Loading and unloading—Equipment and supplies)

YEMEL'YANOV, Yu.

Success on the Vistula. Za rul. 21 no.8:27 Ag '63.

(MIRA 16:11)

1. Predsedatel' Federatsii vodno-motornogo sporta SSSR.

YEMEL'YANOV, Yu., inzh.

"Motorboat" by L.L.Romanenko, L.S.Shcherbakov. Reviewed by
IU.Emel'ianov. Za rul. 18 no.6:31 Je '60. (MIRA 13:8)
(Motorboats)
(Romanenko, L.L.)
(Shcherbakov, L.S.)

~~YEMEL'YANOV, Yu.~~

Meeting on the Vistula River. Za rul. 20 no.8:22 Ag '62.
(MIRA 16:6)

1. Predsedatel' Prezidiuma Federatsii vodno-motornogo sporta SSSR.
(Poland--Motorboat racing)

YEMEL'YANOV, Yu., inzh.

Bookshelf. Za rul. 21 no.7:32 J1 '63.

(MIRA 16:3)

1. Predsedatel' Federatsii vodno-motornogo sporta SSSR.
(Motorboats)

YEMEL'YANOV, Yu.

Broaden the scope of motorboat racing! Voen.znan. 38 no.8:33
Ag '62. (MIRA 15:8)

1. Predsedatel' Federatsii vodno-motornogo sporta SSSR.
(Motorboats)

L 27897-66 EWT(m)/FCC/T IJP(c)
ACC NR: AP5024642

SOURCE CODE: UR/0048/65/029/009/1719/1721

AUTHOR: Babayev, M.K.; Denikayev, R.Z.; Yemol'yanov, Yu. A.; Zhukov, Ye. I.; Lukin, Yu. T.; Murzin, V.S.; Khomenko, G.S.

14
B

ORG: none

TITLE: Fluctuation in the number of particles in an electromagnetic shower at 110 BeV /Report, All-Union Conference on Cosmic Ray Physics held at Apatity 24-31 August 1964/

19

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 9, 1965, 1719-1721

TOPIC TAGS: secondary cosmic ray, cosmic ray shower, electron, photon, iron

ABSTRACT: Electron-photon showers were investigated in an ionization calorimeter consisting of the following components in order from the top: 13 cm C, 3 cm Fe, 8 trays of ionization chambers each followed by 5 cm Fe, 2 trays of chambers with no absorber between, 1 cm Fe, 160 g/cm² C, 3 cm Pb, and two trays of chambers separated and followed by 2 cm Pb. Showers initiated by cosmic ray particles were regarded as electron-photon showers if they produced ionization in at least one of the two uppermost trays and no ionization in the two trays beneath the large carbon absorber. Of 334 electron-photon showers thus identified, 152 had energies between 100 and 200 BeV. The ionization versus depth curves for these showers were normalized to a primary energy of 110

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ACC NR: AP5024642

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BeV and averaged, and the average curve was compared with theoretical curves calculated for different assumed values of the radiation length in iron. Good agreement was obtained with the curve based on a radiation length of 12.6 g/cm². This value of the radiation length in iron was confirmed by comparing the observed depth of maximum shower development with calculated values. The fluctuation (ratio of the mean square to the square of the mean) in the number of particles in the showers as a function of depth was compared with the calculated curve of N.M.Gerasimova (Zh. eksperim. i teor. fiz., 43, 500 (1962); 44, 240 (1963)). Good agreement was found at depths less than 23 radiation units, but at greater depths the observed fluctuations were much less than the calculated ones. In conclusion, the authors express their gratitude to Zh.S. Takibayev for valuable discussions. Orig. art. has: 1 formula, 3 figures, and 1 table.

SUB CODE: NP/ SUBM DATE: 00/

ORIG REF: 004/ OTH REF: 000

Card 2/2 *CV*

BABAYEV, M.K.; DENIKAYEV, R.Z.; YEMEL'YANOV, Yu.A.; ZHUKOV, Ye.I.; LUKIN,
Yu.T.; MURZIN, V.S.; KHOMENKO, G.S.

Fluctuations in the number of particles in an electromagnetic
shower at an energy of $1.1 \cdot 10^{11}$ ev. Izv. AN SSSR. Ser. fiz.
29 no.9:1719-1721 S '65. (MIRA 18:9)

ACC NR: AP7007077

SOURCE CODE: UR/0048/66/030/010/1602/1603

AUTHOR: Denikayev, R. Z.; Yemel'yanov, Yu. A.; Lukin, Yu. T.; Takibayev, Zh. S.; Khomenko, G. S.

ORG: none

TITLE: Probability of the recording of "Stars" by an ionization calorimeter /Paper presented at the All-Union Conference on Cosmic Radiation Physics, Moscow, 15-20 Nov 1965/

SOURCE: AN SSSR. Izvestiya. Seriyz fizicheskaya, v. 30, no. 10, 1966, 1602-1603

TOPIC TAGS: calorimeter, astrophysics, star, neutron, proton, alpha particle, deuteron

SUB CODE: 08

ABSTRACT: Upon interaction of nucleus-reactive particles with matter, there is not only formation of new particles but also fission of nuclei of the target, which is accompanied by the emission of low-energy neutrons, protons, deuterons, and α -particles: i. e., formation of so-called "starts." The ionization produced by strongly ionizing particles of the stars is added to that due to electrons of the shower and measured, together with the latter, in an ionization calorimeter. On the basis of experimental data obtained on an instrument of the ionization calorimeter type, in which iron was used as an absorber, the contribution of stars to ionization was estimated at $\sim 10\%$ of the ionization due to the nuclear shower. Orig. art. has: 2 figures and 3 formulas. JPRS: 39,658

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YEMEL'YANOV, Yu. D.

Yemel'yanov, Yu. D.

"Geophysical Methods of Determining the Elements of Stratification of Deposits Based on Observations in Small-Diameter Oil Wells." Min Petroleum Industry USSR. Glavneftegeofizika (Main Petroleum Geophysical Office). Sci Res Inst of Geophysical Methods of Prospecting (NIIGR). Moscow, 1955. (Dissertations for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya Letopis', No 27, 2 July 1955

YEMEL'YANOV, Yu.D.

Issledovatel'skiy Range. Vokrug sveta no.9:15-16 S'55. (MIRA 8:12)
(Ural Mountains)

YEMEL'YANOV, Yu.D.

New types of high-capacity oil field geophysical apparatus.
Neftianik 5 no.1:21-23 Ja '60. (MIRA 13:11)

1. Rukovoditel' laboratorii promyshlovoy geofiziki Volgo-Ural'skogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta geofiziki.

(Geophysical instruments)

S/026/62/000/002/004/004
D036/D113

AUTHORS: Nekrasov, V.I., Candidate of Biological Sciences (Moscow), and
Yemel'yanov, Yu.M., Candidate of Chemical Sciences (Moscow)

TITLE: Did the Tunguska catastrophe affect forest growth ?

PERIODICAL: Priroda, ⁵¹no. 2, 1962, 102-105

TEXT: The authors discuss changes in forest growth in the area where the Tunguska meteorite fell. In 1958, an expedition of the Komitet po meteoritam AN SSSR (Committee on Meteorites of the AS USSR) under K.P. Florenskiy found that in the impact area the mean annual growth of the trees in diameter increased from 0.4-2.0 mm before the fall of the meteorite to 6-10 mm afterwards, a rate of growth which is still being maintained. This increase was observed both in young trees which sprung up after 1908, and in the surviving trees. To establish whether this accelerated growth was due to improved vegetation conditions caused by the fall of the meteorite or to the

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D036/D113

Did the Tunguska ...

fertilizing action of the meteoric substance itself, an expedition of the Sibirskoye otdeleniye AN SSSR (Siberian Branch of the AS USSR) under G.F. Plekhanov and V. Koshelev, set up in 1960, planted test trees at various distances from the point of impact. After the fall of the meteorite, the coniferous trees were replaced by their own kind. There are no deforested areas now, except for those due to soil destruction. The new plantations are irregularly dispersed, they contain no more than 700-1200 trunks per 1 ha, the trunks are very regularly distributed and there are no signs of dying-off. Forty- to fifty-year-old trees of large and medium thickness were found to have grown to heights of 17-22 m as compared with the 7-8 m normal under analogous conditions. The central part of the area of forest destroyed by the meteorite is now occupied by trees with class 1I and even class I bonitet, and the peripheral areas by trees of class III bonitet; normally, the forests of this zone have class IV and V bonitets, rarely class III. The mean annual growth in diameter of trees suffering damage to the base of the trunk by burning was 5.0 mm, 2-4 years after the fall of the meteorite as compared with 1.2 mm before. Further investigation is required to establish the causes of the described phenomena. There are 3 figures and 2 Soviet references.

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S/534/60/000/19/003/005
D226/D302

3,9000 (1041,1109,1327)

AUTHORS: Florenskiy, K.P., Vronskiy, B.I., Yemel'yanov, Yu.M.,
Zotkin, I.T., and Kirova, O.A.

TITLE: Preliminary results of the work of the 1958 Tungusk
Meteorite Expedition

PERIODICAL: Akademiya nauk SSSR. Komitet po meteoritam.
Meteoritika, no. 19, 1960, 103-134

TEXT: The object of the expedition, organized by the KMET (Com-
mittee on Meteorites) AS USSR was to carry out fieldwork in the
area of impact of the meteorite which fell in 1908. Previous in-
vestigations were conducted inaccurately and inferences concern-
ing the dimensions of the destruction area, its topography and
other characteristics were based on insufficient data. The orga-
nizer of the expedition was K.P. Florenskiy, member of the Insti-
tute of Geochemistry and Analytical Chemistry im. Vernadskiy.

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Other members of the expedition were: O.A. Kirova -- Minerologist, B.I. Vronskiy -- Geologist, Yu.M. Yemel'yanov -- Chemist, I.T. Zotkin -- Astronomer, S.A. Kuchay -- Physicist, P.N. Paley -- Chemist, 2 KMET laboratory assistants, Ye.I. Malinkin, T.M. Gorbunova, and a "collector" K.D. Yankovskiy, who took part in the expedition of 1929-1930, and who, therefore, was able to evaluate changes in the area during the last 28 years. The expedition was joined by camera operator M.A. Zaplatin from the Moscow Studio of Documentary Films and had two local senior guides: A.I. Dzhenkoul' and A.I. Doonov. The expedition left Moscow on June 3 and returned on August 10 having spent 34 days in the studied area. The tasks of the expedition were as follows: 1) To undertake trans-section routes through the whole area of the forest fall of 1908, to determine its general character, its extension and boundaries; 2) to collect soil samples and analyze them on the spot for their iron and nickel content and determine

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the ratio Ni : Fe., on the assumption that the meteorite was an iron one. The most interesting samples were to be taken twice and retained for more detailed study in Moscow. It was planned to collect samples throughout the whole area from squares with a side length of 5 km. This plan was abandoned later; 3) to work out a fieldwork plan for the next expedition, based on actual observations and collected data. The expedition established camp in the hamlet Kulik in the north-western part of the area. Preliminary results of the fieldwork: The destruction of the forest, caused by the 1908 meteorite is still the most important evidence of its impact and was, accordingly, most thoroughly investigated. Leafy trees which fell in 1908 were, of course, completely rotten but conifers were well preserved, although general observations were hindered by the growth of young trees. The whole area of forest destruction amounts to 1500 km². This can be clearly observed by the scale of forest-fall and the radial character of its distribution. The whole region was divided by

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the expedition into three zones. 1) A zone, where the trees fell without any clear orientation, called "unoriented zone". It is situated in the depression around the "Yuzhnoye Boloto" (Southern Marsh) and forms the central region, from whose boundaries the radially oriented forest fall begins; 2) The second area was called the zone of "mass forest fall", although isolated groups of living old trees were to be found in this area. Visual estimation of fallen trees amounted to 80-90 %; 3) The zone of partial forest destruction; its area could be estimated only approximately, the percentage of fallen trees near its boundaries amounting probably to 15 - 20 %. These boundaries estimated by the expedition agreed fairly well with those given by local hunters and with the aerovisual estimation made by K.P. Florenskiy in 1953. The expedition studied also the remainder of the forest conflagration which took place during the catastrophe. Its conclusions differ from those expressed by previous investigators: Ye.L. Krinov (Ref. 1: Tungusskiy Meteorit /Tungussk Me-

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teorite⁷ Izd-vo AN SSSR, 1949) and L.A. Kulik (Ref. 14: Dannyae po Tungusskomu meteoritu k 1939 g ⁷Data on the Tungusk Meteorite for 1939⁷ Dokl. AN SSSR, 22, no. 8, 520-524, 1939) both thought that during the catastrophe, spontaneous partial burning of broken trees took place without provoking a general forest fire. The conclusions of the expedition may be summarized as follows: 1) Near the center of the devastation area, many broken trees show burn⁷traces at their breaking spots. This clearly proves the sequence of events: Burning occurred after the action of the shock-wave; 2) Traces of burning do not show any definite orientation toward the center of devastation area. They occur in most cases on the eastern side of trunks, as a result of wind direction during the fire; 3) Many trunks clearly indicate prolonged conflagration. B.I. Vronskiy found on the "Yuzhnoye Boloto" two well developed living twin-larches. One of them was found to be 104 years old. Both trees were devoid of any traces of fire; they survived because they grew in the middle of the marsh,

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where the fire could not penetrate; 4) In all probability the fire was a result of the catastrophe; in type it differs from typical taiga fires by the clearly surface character of the burn, and its area comprised most of the area of the zone of "mass forest fall", where fallen trees had accumulated in great quantity. Some observations, however, suggest several starting points for the forest conflagration, from which the fire spread in a normal way. Abstractor's note: These not given. It may be assumed, the authors state, that the timber fall and the forest fire were effects of the same cause. As regards the growth of new trees, the expedition concluded that young trees grow very fast in burned areas. Some of these trees, found to be 35-40 years old, were much thicker than the dead ones (100 or even 300 years old). Old surviving trees, which were dwarfed before the fire, showed an intensified growth subsequently. Further biological investigations are needed, the authors state, but at present one cannot speak of a dwarfing influence of the catastrophe on vegetation.

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growth. The expedition carried out an extensive search for any earth disturbances which could be the results of an explosion with a possible energy equaling 10^{20} - 10^{23} ergs., according to F. Whipple (Ref. 7: "The Great Siberian Meteor and the Waves, Seismic and Aerial which it produced". Journ. of the Roy. Meteorological Soc., 56, no. 236, 1930). None were found. Certain depressions or holes which were examined resulted, in fact, from the dissolution of gypsum in the subsoil, and on one occasion from a temporary lake, formed by a dam of fallen trees (since burst). The "Yuzhnoye Boloto" which is one of the proposed places of the meteorite's impact was transpased four times by K.P. Florenskiy, Yu.M. Yemel'yanov and B.I. Vronskiy. No traces of destruction which could possibly be associated with a powerful explosion were observed, no rock eruptions, no peat disruptions. All members of the expedition unanimously agreed, the "Yuzhnoye Boloto" could not be the center of a surface explosion which produced the general forest fall; the formation of a crater,

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many hundreds of meters in diameter, which was subsequently overgrown, is regarded by the members as a quite improbable assumption, but this opinion does not exclude the possibility that certain parts of the meteorite could have fallen to the bottom of the bog without having any critical explosive consequences. In order to ascertain the presence of iron and nickel, soil samples were taken from about 80 places, most of these in the "unoriented zone". Undisturbed turf and soil layers (5 dm² in area and 5 cm thick) were dug out. Their thickness was sufficient, because the increase in soil-thickness in this district is much less than 5 cm per 50 years and therefore, the soil layer corresponding to 1908, was always included in the samples. The samples were then disintegrated over a basin fitted with 3 magnets, (roots removed manually), and the soil was thoroughly washed in the basin. The residual magnetic slush was rinsed many times through a magnetic trap. The particles in the magnetic

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slush were mostly over 0.1 mm, although certain of them were up to ten times smaller. The residue was then dried and samples weighing 0.1 - 1.0 g were dissolved in HCl and tested calorimetrically for Fe and Ni. When no traces of Ni were found in this way, separate iron particles were picked out from the residue and examined by O.A. Kirova. Again only negligible traces of Ni were found, which proves the non-cosmic origin of those particles. Apart from iron particles certain minute silicomagnetic globules were observed. They were not analyzed on the spot, but brought back to Moscow. Even if they did come from outer space, there is no evidence to connect them with the meteorite. Upon returning to Moscow, the expedition forwarded soil and peat from the area of "Yuzhnoye Boloto" to the Institute of Geochemistry and Analytical Chemistry AS USSR to determine their radioactivity. Tests, conducted under the supervision of Professor V.I. Baranov showed that there were no differences in the radioactive content of the given samples and that of similar soils from other regions. The

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authors conclude that 1) The general aspect of the forest devastation suggests that the basic direction of the shock was from above; this means that the wave center was situated high above the earth's surface; 2) The fact that no parts of the meteorite were found does not prove that they did not fall into the area, for only a few routes -- made on foot -- were investigated; 3) There could have been several starting points for the fire as the result of the shock wave from above; 4) The contours of the zone of mass forest destruction and the excentricity of the "un-oriented zone" suggest the action of a shock-wave having neither the correct spherical shape, nor central symmetry. Nevertheless, this assumption seems to be contradicted by the radial distribution of the fallen trees; 5) During the fieldwork, no particles of an iron meteorite were found. These negative results may have been due to: The great dispersion state of meteorite particles which were too small to be separated by the normal methods applied in fieldwork; the possibility of complete oxidation of minute

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iron particles over 50 years; the notable deviation of dispersion ellipse from the center of the forest fall. The assumption that the meteorite was of the iron-type has no factual foundation, but, on the basis of currently available data, it is also impossible to place it in any other category; 6) The authors point out the discrepancy between the general atmospheric disturbance in 1908 and the testimony of eye witnesses; None of them spoke of powerful smoke trails of the meteorite. It is possible that such a smoke-tail detached itself from the meteorite in the upper part of the atmosphere. Eye witness testimony was reexamined, but found rather obscure and confusing. All these considerations suggest that at present, it is too early to consider the Tunguska meteorite as belonging to the crater forming category. Apparently the meteorite caused great devastation on the earth's surface without a crater being formed. General information on the destructive action of shock-waves may be found in the work of K.P. Stanyukovich, G.S. Golitsyn (Ref. 6: Udarnyye volny [Shock Waves],

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Priroda, no. 12, 1958) Academician A.P. Vinogradov asked M.A. Tsikulin and V.N. Rodionov (Ref. 15: Priblizhennaya otsenka parametrov Tungusskogo meteorita 1908 g po karte razrusheniya lesnogo massiva /Approximate Evaluation of the Parameters of the Tungusk Meteorite of 1908, according to the Map indicating Forest Zone Destruction⁷, Narodnokhozyaystvennoye ispol'zovaniye vzryva, no. 6, Sibirskoye otd. AN SSSR, 1959) to interpret the findings of the expedition. Their evaluation showed that the observed phenomena could be best explained as the results of a shock wave, submitted to an acute braking action, caused by the disintegration of the meteorite. The authors suggest a plan for further investigations, which includes: 1) Preparing a very detailed map of the forest zone destruction, using all new available topographic data of the whole area; 2) Searching further for meteorite parts on the earth's surface and in the deposits of lake beds; 3) Researching on the dispersion ellipse outside the devastation area; 4) Studies by marsh specialists on possible changes in

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peat formation in the "Yuzhnoye Boloto" and in the state of sub-soil permanent freezing; 5) Studying the general ecology of the area; 6) Studying in detail all the material collected. The authors feel, therefore, that it is necessary to organize a new expedition, comprising specialists of many kinds, and that it is important to do it as soon as possible for the traces of the meteorite impact are already fading. There are 27 figures, 1 table and 15 references: 13 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: F. Whipple. "The Great Siberian Meteor and the Waves, Seismic and Aerial which it Produced." Journ. of the Roy. Meteorological Soc., 56, no. 236, 1930. X

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YEMEL'YANOV, Yu.M.; NEKRASOV, V.I.

Abnormal growth of arboraceous vegetation in the region of the fall
of the Tunguska meteorite. Dokl. AN SSSR 135 no.5:1266-1269 D '60.
(MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova i
Glavnyy botanicheskiy sad AN SSSR. Predstavleno akademikom V.N.
Sukachevym.

(Podkamennaya Tunguska Valley—Meteorites)
(Growth (Plants)) (Trees)

Yemel'yanov, Yu.M.

USSR/Physical Chemistry - Electrochemistry.

B-12

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3982

Author : Yu.V. Filippov, Yu.M. Yemel'yanov.

Inst :

Title : Electrical Theory of Ozonizers. I. Static Volt-Ampere Characteristics of Ozonizers.

Orig Pub: Zh. fiz. khimii, 1957, 31, No 4, 896-903.

Abstract: The study of static volt-ampere characteristics (SVC) of ozonizers (O) with spark gaps of 1.0, 2.1, 2.9 and 4.2 mm was carried out. It was found that the SVC may be represented in the first approximation as two straight segments, the slant of which is determined correspondingly to the total electric capacity and the capacity of the dielectric barriers. Basing on the examination of the SVC, it was concluded that the voltage on the spark gap of the O remains constant during the discharge burning and does not depend on the intensity of the

Card : 1/2

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USSR/Physical Chemistry - Electrochemistry.

B-12

Aba Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3982.

current passing through the O. Equation for the computation of the intensity of the current passing through the O at a given voltage on the O are derived. An installation is described, which permits to maintain a constant pressure and a set speed of the gas flow automatically.

I. Mastovskiy gas. UNIV. in Leningrad,

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YEMEL'YANOV Yu.M.

YEMEL'YANOV, Yu.M.; FILIPPOV, Yu.V.

The electrical theory of ozonizers. Part 2: The theory of dynamic characteristics of ozonizers (with summary in English). Zhur.fiz.khim.31 no.7:1628-1635 J1 '57. (MIRA 10:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. (Ozone) (Chemical apparatus) (Equations)

5(4)

AUTHORS:

Filippov, Yu. V., Yemel'yanov, Yu. M.

SOV/76-32-12-25/32

TITLE:

The Electrical Theory of Ozonators (Elektricheskaya teoriya ozonatorov) III. Electric Current in Ozonators (III. Elektricheskiy tok v ozonatorakh)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 12, pp 2817-2823 (USSR)

ABSTRACT:

Based on a previously outlined theory (Refs 1 and 2), the expressions for the dependence of the actual and average values of the current passing through the ozonator on the terminal voltage of the ozonator and its constructive parameters are calculated. The static actual volt-ampere characteristic of an ozonator below the critical voltage is represented by a straight line passing through the origin of coordinates (as is the case with all condensers); the inclination of this straight line is determined by the aggregate electric capacity of the ozonator. If the voltage exceeds the critical value, the characteristic takes the form of an asymptote, again approaching the straight line passing through the origin of coordinates. The inclination of the straight line is now only determined by the dielectric barriers of the ozonator. Accordingly, the entire volt-ampere

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The Electrical Theory of Ozonators. III. Electric
Current in Ozonators

SOV/76-32-12-25/32

characteristic is S-shaped. The static volt-ampere characteristic for the average values of the current consists of two straight lines intersecting at the point of critical voltage. There are 2 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: June 15, 1957

Card 2/2

VENNILLO, V.P.; YEMEL'YANOV, Yu.M.; FILIPPOV, Yu.V.

Laboratory apparatus for producing ozone. Zav.lab. no.11:1401-1402
'59. (MIRA 13:4)

1.Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Ozone)

SOV/32-25-4-52/71

28(4)

AUTHORS:

Yemel'yanov, Yu. M., Filippov, Yu. V.

TITLE:

Automatic Pressure and Gas Consumption Regulating System
(Sistema avtomaticheskogo regulirovaniya davleniya i ras-
khoda gaza)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4,
pp 490 - 491 (USSR)

ABSTRACT:

A setup has been designed which can be used to maintain auto-
matically a constant gas pressure in laboratory plants (Fig).
Basically, it consists of two manostats and a contact mano-
meter. The working principle on which it is based is that of
a mercury manometer closing an electric circuit as soon as
the pressure in the plant increases. The electric contact
actuates a water jet pump produce a vacuum in one of the
manostats, which in turn causes the pressure in the plant
to diminish. As soon as the pressure desired is produced the
mercury in the manometer sinks to such a point as to break
the electric circuit, so that the vacuum pump is de-energized.
If the pressure is to be adjusted to very small pressure differ-
ences a contact manometer with several contacts is required.

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Automatic Pressure and Gas Consumption Regulating
System

SOV/32-25-4-52/71

The apparatus described could be used for stabilizing gas consumption within a range of 2-350 l per hour. The power source consisted of two batteries ZS-L-30 with a capacity of 30 a/hour and 1.5 v. There is a figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University named M. V. Lomonosov)

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5(4)

SOV/76-33-5-13/33

AUTHORS: Yemel'yanov, Yu. M., Filippov, Yu. V. (Moscow)

TITLE: ~~The Electrical Theory~~ of Ozonizers (Elektricheskaya teoriya ozonatorov). 4. On the Active Energy of Ozonizers (4.Ob aktivnoy moshchnosti ozonatorov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 5, pp 1042 - 1046 (USSR)

ABSTRACT: The formula for the energy of the ozonizer is derived from the assumptions of the passage of the current through an ozonizer maintained in a previous paper (Ref 2). It can be physically interpreted in the simple form $U=V_z(I_c - I_p)$ as the difference of the Coulomb current I_c passing through with the ignition voltage V_z in 1 sec and the reactive current I_p . The energy is a linear function of the voltage on the ozonizer. The experimental aftertest was carried out by means of the calorimetric passage method. This method consists in measuring the temperature increase of the cooling liquid of the ozonizer and comparing it to an equivalent energy by which temperature increase is not brought about by discharge but in a way by which measurement is rendered possible. A figure shows the

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The Electrical Theory of Ozonizers. 4. On the
Active Energy of Ozonizers

SOV/76-33-5-13/33

agreement of the measuring values with the values determined, especially in the case of ozonizers with a small spark gap. Longer spark gaps (2.5 - 4.2 mm) show deviations from the linear connection because of complications already mentioned in reference 5. There are 1 figure and 7 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: October 10, 1957

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.5 (4)
AUTHORS:

Filippov, Yu. V., Yemel'yanov, Yu. M. SOV/76-33-8-17/39

TITLE:

Electrical Theory of Ozonizers. V. On the Problem of the Power Coefficient of Ozonizers

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1780 - 1787 (USSR)

ABSTRACT:

Publications contain different data regarding the power coefficient (PC) of ozonizers (O), i.e. the ratio between the active power (AP) of the (O) and the voltampere power (VP), as well as regarding the dependence of (PC) on different parameters. Usually, (VP) is considered the product of the effective current and voltage values; here, however, a complex expression (1) is obtained for the (PC) η of (O) which is very inconvenient in practice. A simpler expression for the determination of the (PC) η' is obtained if (VP) is regarded as the product of the amplitude value of the voltage and the mean current value. Both ways of determination are considered, and from the equations obtained it is found that η does not depend on the current frequency, and increases rapidly to a maximum at voltages above the critical voltage, and approaches asymptotically the zero point (at a voltage tending to ∞). Considerations of the simplified

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Electrical Theory of Ozonizers. V. On the Problem of the Power Coefficient of Ozonizers SOV/76-33-8-17/39

equation (3); i.e. the (PC) η' , resulted in an equation (8) for η'_{max} which contains no expressions other than the capacity of the discharge space (DS) and the dielectric barriers of (O). Thus, the maximum of (PC) does not depend on the electrical properties of the gas in (O) but on the dimensions of (O) only. Experimental determinations regarding the dependence of η' on the voltage were carried out for (O) of different (DS) values (1.0, 2.1, 2.9 and 4.2 mm) at different rates of oxygen flow (3 - 340 l per hour). The unit has already been described (Ref 9); the (AP) was determined calorimetrically (Ref 7). The amplitude values of the voltage were calculated from the effective values determined by means of a static kilovoltmeter FS-15. The mean current value was measured by a milliammeter (with a cuprous oxide rectifier Ts-41). The measurement results of the (PC) (Table 1) show, in accordance with the theoretical considerations made above, that the (PC) passes through a maximum as the voltage increases. The voltages at η'_{max} as well as the value η'_{max} itself, increase at an increase in the (DS). The

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Electrical Theory of Ozonizers. V. On the Problem of the Power Coefficient of Ozonizers SOV/76-33-2-17/39

(PC) depends on the rate of oxygen flow, which will be explained in a future paper, where it is shown as well that this is due to a change in the gas composition in the course of ozone formation. There are 3 figures, 2 tables, and 9 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 27, 1958

Card 3/3

S/076/60/034/05/24/038
B010/B002

5.1330

AUTHORS:

Yemel'yanov, Yu. M., Filippov, Yu. V.

TITLE:

Electrical Theory of Ozonizers. VII. The Effect of the Formation of Ozone on the Current-voltage of Ozonizers

PERIODICAL:

Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 5,
pp. 1083-1087

TEXT: The authors of the present paper carried out special investigations of the effect of the concentration of ozone on the current-voltage characteristics and capacity of the ozonizer. They used a device described in Ref. 1. The concentration of ozone was iodometrically determined, and the capacity of the discharge was measured by means of a calorimeter and an oscilloscope. The static current-voltage characteristics, the discharge capacities at different voltages, the concentration of ozone, and the burning voltages of the discharge at different rates of oxygen passage are given in Tables 1-3. It was found that the burning voltage of the discharge in the ozonizer rises linearly with increasing concentration of ozone. The effective capacity of the barriers of the ozonier (calculated from the dynamic charge-voltage characteristics) depends on the terminal

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