

S/126/63/015/003/009/025
E193/E383

AUTHOR: Krupnikova-Perlina, Ye.I.

TITLE: A study of the oxidation of copper at elevated temperatures

PERIODICAL: Fizika metallov i metallovedeniye, v. 15, no. 3, 1963, 391 - 396

TEXT: Conflicting views hold by various workers on the mechanism of high-temperature oxidation of copper prompted the present author to study this problem which is of considerable theoretical and practical importance. The experiments were conducted on 99.994% pure copper specimens, cold-rolled to 96% reduction and etched in HNO_3 . The oxidation tests were carried out in air at $1020 \pm 10^\circ\text{C}$. The mechanism of oxidation was studied by electron-diffraction analysis of the texture of the surface oxide layer. Conclusions - 1) At the very beginning of the oxidation process (i.e. in the first 5 to 10 sec), at 1020°C , oxygen diffuses in copper and Cu_2O is formed. 2) In the next stage of the process (10 to 30-40 sec), counter-current diffusion of copper and oxygen takes place, after which the predominant

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S/126/63/015/005/009/025
E195/E383

A study of

Mechanism of oxidation is diffusion of copper through the Cu_2O layer. 3) On prolonged (longer than 10 min) oxidation, the formation of pores and cracks in the Cu_2O layer begins. In this stage oxidation takes place as a result of both copper diffusing outward through the oxide layer and oxygen migrating towards copper through cracks and pores in the oxide layer. There are 4 figures and 6 tables.

ASSOCIATION: Giprotsvetmetobrabotka

SUBMITTED: April 29, 1962

Card 2/2

LAYNER, D.I.; KRUPNIKOVA-FERLINA, Ye.I.

Investigating the effect of the texture of copper on the
texture of cuprous oxide during high-temperature oxidation.
Trudy Oiprotsevtsetobrabotka no.24:66-74 '65.

(MIRA 18:11)

BAY, A.S.; SLESAREVA, Ye.N.; KRUPNIKOVA-PERLINA, Ye.I.;
CHETVERYAKOV, N.I.; ADUSHKINA, N.A.

Studying the structure of amorphous alloys in the system
arsenic - sulfur - germanium - selenium. Trudy Giprotsvetmeto-
brabotka no.24:61-65 '65. (MIRA 18:11)

IAYNER, D.I.; SOLOV'YEV, V.Ya.; KUZNETSOVA, M.I.; KRUPNIKOVA-PERLINA,
Ye.I.; SLESAREVA, Ye.N.

Studying the oxidation of niobium. Trudy Giprotevetmetobrabotka
no.24:75-85 '65. (MIRA 18:11)

L 18851-66 EWT(m)/EWP(t) JD SOURCE CODE: UR/2680/65/000/024/0061/0065
ACC NR: AT6006473 58+1

AUTHOR: Bay, A. S.; Slesareva, Ye. N.; Krupnikova-Perlina, Ye. I.; Chetveryakov,
N. I.; Adushkina, N. A.

ORG: State Scientific-Research Planning Institute of Alloys and the Processing of
Nonferrous Metals (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut
splavov i obrabotki tsvetnykh metallov)

TITLE: A study of amorphous structures in the As-S-Ge-Se alloy system
21 21 21 21

SOURCE: Moscow. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut
splavov i obrabotki tsvetnykh metallov. Trudy, no. 24, 1965. Metallovedeniye i obra-
botka tsvetnykh metallov i splavov (Metal science and the treatment of nonferrous
metals and alloys), 61-65

TOPIC TAGS: crystal polymorphism, arsenic, sulfur, germanium, selenium, electron
microscopy, thin film, crystal structure

ABSTRACT: Vacuum-spray coated layers of As-S-Ge-Se and As-S-Se were studied by
electron microscopy. Carbon replication was used to maintain the thermally sensi-
tive structures under the electron beam. Satisfactory replicas were made by using

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ACC NR: AT6006473

the following procedure: (1) carbon deposition, (2) dissolution of the alloy layer in a fresh 10% KOH solution, and (3) mounting the replica onto a fine grid. Electron micrographs (X30,000) of the above two systems were compared with replicas obtained from bulk ingots. Three different types of structural inhomogeneities were noted in the evaporated films: the first was due to uneven crystallization, the second due to the restraining influence of the various components and the third due to bulk formation. The matrix or base structure of the layers was granular with the granules assuming different dimensions. Both macro (X2) and microstructures (X440) were obtained for the alloy ingots by using an etching containing KOH, H₂O, glycerin and H₂O₂. Similar inhomogeneities were found and these were related to the thin film structures. These data did not contradict the view of Kolomiyets who stated that immiscible glass-like phases were formed in the As-Se-Ge system. It was concluded that the inhomogeneities formed in thin films and in ingots of the above alloy systems were the same. Orig. art. has: 4 figures.

SUB CODE: 20, 11/

SUBM DATE: 00/

ORIG REF: 001/

OTH REF: 000

Card 2/2

vmb

L 18852-66 EWT(m)/EPF(n)-2/EWP(t) IJP(c) JD/JG/WB 7/6
ACC NR: AT6006474 SOURCE CODE: UR/02680/65/000/024/0075/0085

AUTHOR: Layner, D. I.; Solov'yev, V. Ya.; Kuznetsova, M. I.; Krupnikova-Perlina, Ye. I.; Slesareva, Ye. N. B+1

ORG: State Scientific-Research Planning Institute of Alloys and the Processing of Nonferrous Metals (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov)

TITLE: Study of the oxidation of niobium
44,55 44,55 21

SOURCE: Moscow. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov. Trudy. no. 24, 1965. Metallovedeniye i obrabotka tsvetnykh metallov i splavov (Metal science and the treatment of nonferrous metals and alloys), 75-85

TOPIC TAGS: niobium, niobium oxide, oxidation, oxide formation, polymorphism, crystal structure analysis, lattice parameter, temperature dependence

ABSTRACT: The niobium (melted in an electron-beam furnace) had the following composition: 0.1-0.8% (by wt) C, 0.01-0.05% O₂ and 0.01-0.05% H₂. The ingots were forged, machined and vacuum annealed at 1250°C. Kinetic oxidation curves were ob- A, 44,55

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L 18852-66

ACC NR: AT6006474

tained at temperatures ranging in 100° intervals from 600 to 1200°C and the relation $\Delta m^k = s\tau$ (where Δm is the weight gain in g/cm², τ is time in min) was obeyed; k varied as a function of oxidation time and temperature from 0.5 to 2.0. Up to 800°C, a brittle scale formed while at higher temperatures the scale was sintered and became denser and stronger. At constant oxidation times, the sintering caused k to decrease with increase in temperature. The oxide structures were analyzed by x-ray diffraction. At 500 to 800°C, two layers of α -Nb₂O₅ were formed and the lower scale of α -Nb₂O₅ had a texture due to contact with the metal. This texture endured oxidation for 3.5 hr at 800°C. Above 800°C, α -Nb₂O₅ changed to β -Nb₂O₅, especially in the outer layer since α -Nb₂O₅ was preserved in the inner scale even after prolonged oxidation. Lattice parameters and intensities were tabulated for oxidation at 1000°C and 4.5 hr for both the external and inner sides of the scale; the oxides β -Nb₂O₅ and NbO were present, the NbO forming as early as 45 sec at 1000°C. The texture of the scales was further studied by means of electron diffraction and data showed that for oxidation at 1020°C for 20 sec the β -Nb₂O₅ and NbC had no texture but after 30 sec a texture was observed. For NbO, a (111) texture was determined. The fact that the texture persisted even during the α -Nb₂O₅ + β -Nb₂O₅ transformation confirmed the hypothesis that the oxide formation mechanism was independent of phase composition. Orig. art. has: 5 figures, 3 tables, 1 formula.

SUB CODE: 11, 20, 13/SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 006

Card 2/2 *LW*

KRUFNIKOV, P.

Struggle of the Latvian Communist Party for the organization of
the legal revolutionary press in the period of partial stabilization
of capitalism, 1924-1929 Vestis Latv ak no.11:15-27 '61.

KRUPNIN, L.

Multi-rope hoist; fundamentals. Sbor. nauch. trud. Kaz GMI no.19:
172-181 '60. (MIRA 1513)

(Mine hoisting)

KRUMITS'KIY, BORYS D. YTHOVYCH

LN/E
139.22
.K9

Ukrayins'ka istorychna nauka pid sovyetamy (1920-1950) (Ukrainian
Historical science under the Soviets) Myunkhen, 1957.
120 p. port. (Institut po Izucheniyu Istorii i Kul'tury SSR. Doslidy i
Materiyaly, ser. 2 (Tsyklostylevi Vyd.) nr. 58)
Summaries in English and German.
Includes bibliographies.

AVS

KRUPNOV, A.

Organisers of healthful work; picture report. Zdorov's 2 no.10:
16-17 0 '56. (MLBA 9:11)
(MOSCOW--MACHINERY INDUSTRY--HYGIENIC ASPECTS)

9.4000

69960

AUTHOR: Krupnov, A.F.

SOV/141-2-4-15/19

TITLE: A Ring Sorting-system for a Molecular Oscillator

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 4, pp 658 - 659 (USSR)

ABSTRACT: A number of rings are arranged axially along the path of the beam. Successive rings are at opposite potentials. This gives a minimum field on the axis and a maximum field at the periphery. For optimum sorting by levels the optimum ratio of ring radius to ring spacing is 1. In contrast to the case of a quadrupole condenser, the field, on the average, is parallel to the resonator field. The arrangement of Figure 1 has been tried with: source diameter 1 mm; length 10 mm; resonator length 100 mm; resonator quality (E_{010}), 7 000; operating pressure $2-3 \cdot 10^{-5}$ mm Hg; length of sorting system 10 mm, diameter 6 mm; ring thickness (nickel) 1 mm. Various radius/spacing ratios were tried and 1.15 gave the best results. A variant of the ring system is that using a double spiral. This would enable the construction of a molecular

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69960

A Ring Sorting-system for a Molecular Oscillator SOV/141-2-4-15/19

oscillator using a disc resonator as suggested by Prokhorov (Ref 1) for sub-millimetre waves. Another possibility is a more powerful oscillator using an annular sorting system round a circular-cylindrical beam and a resonator in the E_{020} mode (Figure 3).

There are 3 figures and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radiophysics Scientific-research Institute of Gor'kiy University)

SUBMITTED: May 17, 1959

Card 2/2

21184

9.2574 (also 1163)

S/141/60/003/006/023/025
E032/E114

AUTHORS: Skvortsov, V.A., Krupnov, A.F., and Naumov, A.I.

TITLE: A New Maser Without a Freeze-out System

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,
1960, Vol.3, No.6, pp. 1128-1129

TEXT: A new maser incorporating a molecular beam apparatus producing a beam of ammonia molecules without a liquid nitrogen trap to remove the ammonia vapour, has been developed by the present authors. The apparatus is evacuated by a single diffusion pump type H-5 (N-5) incorporating an oil vapour trap. The molecular beam gun and the resonator were placed immediately above the pump. In the absence of the beam the vacuum was 2×10^{-6} mm Hg, while under working conditions (optimum beam on) the vacuum was 3.3×10^{-5} mm Hg. The consumption of ammonia was 2.8×10^{17} mol/sec and the corresponding pumping speed was 250 litre/sec. In the usual molecular generators incorporating a freeze-out system, the stability is affected by the freeze-out conditions. The present generator is said to be free from

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21184
S/141/60/003/006/023/025
EO32/E114

A New Maser Without a Freeze-out System

these disadvantages. Acknowledgements are expressed to
A.A. Mel'nikov for assistance in the experiments and to
A. T. Naumov for assistance in the preparation of the beam gun.
There is 1 Soviet reference. X

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut
pri Gor'kovskom universitete
(Scientific Research Radiophysics Institute,
Gor'kiy University)

SUBMITTED: July 14, 1960

Card 2/2

9.2574

25958

S/141/61/004/001/018/022
E032/E314

AUTHORS: Krupnov, A.F., Naumov, A.I. and Skvortsov, V.A.

TITLE: A Sealed-off Maser with an Ion-getter Pump and Cooling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol. 4, No. 1, pp.178-179

TEXT: An ammonia maser oscillator has been developed by the present authors. It incorporates an ion-getter pump and liquid-nitrogen cooling. The maser is designed so that the pumping speed for the ammonia is 1 000 litres/sec and the pumping speeds for all the other gases is about 1 litre/sec. In order to achieve this, the ammonia is frozen out by a liquid-nitrogen trap and the remaining gases are removed by an ion-getter pump. The apparatus is shown schematically in Fig. 1. In this figure, 1 is a liquid-nitrogen-cooled dewar; 2 is the connection to a backing pump; 3 is the ion-getter pump; 4 is a getter pump; 5 is the vacuum chamber; 6 is a multichannel beam source giving a molecular beam having a divergence of 12° ; 7 is a separator consisting

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A Sealed-off Maser ...25958

S/141/61/004/001/018/022
E032/E314

of 100-mm long rods and 8 is an invar resonator, 100 mm long. The apparatus is first evacuated with a backing pump to a pressure of 10^{-2} mm Hg. Further reduction of the pressure (down to about 5×10^{-6} mm Hg) is achieved by means of cooling, a getter pump (A.G. Mishkin, Elektronika, 12, 62, 1958 - Ref. 1) and an ion-getter pump. During the operation of the device the vacuum is maintained by cooling and the ion-getter pump. The power consumed by the getter and the ion-getter pumps is 100 and 140 W, respectively. During tests the oscillator was found to operate continuously for six days. The pressure remained constant and the only external manipulation required was the addition of liquid nitrogen. It was found that the device could be restarted by introducing liquid nitrogen, switching on the getter pump and then the ion-getter pump.

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A Sealed-off Maser ...25958

S/141/61/004/001/018/022
EO32/E314

There are 1 figure and 3 references: 2 Soviet and
1 non-Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy
institut pri Gor'kovskom universitete
(Scientific Research Radiophysics Institute
of Gor'kiy University.

SUBMITTED: July 14, 1960

Card 3/4

KRUPNOV, A.F.

Device for measuring minor gas flow. Prib.i tekhn. eksp. 6 no.5:187
S40 '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut
Gor'kovskogo gosudarstvennogo universiteta.
(Gas meters)

KRUPNOV, A.F.; SKORTSOV, V.A.

Observation of the radiation line of the formaldehyde molecule at a frequency of 72.8 Mc. Izv. vys. ucheb. žav; radiofiz. 5 no.3:611-612 '62.
(MIRA 15:7)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.
(Formaldehyde—Spectra)

KRUPNOV, A.F.; SKVORTSOV, V.A.

Formaldehyde beam maser with a 4mm. band. Izv. vys. ucheb. zav.;
radiofiz. 5 no.4:820 '62. (MIRA 16:7)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri
Gor'kovskom universitete.

(Masers)

L 14988-63 EWT(1)/EWT(m)/BDS/EEC(b)-2/ES(t)-2 AFFTC/ASD/RADC F1-4/
Pk-4/Po-4/Pq-4 RM/WQ/JHB/EH/K/IJP(C)
ACCESSION NR: AFJCO4837 8/0141/63/006/003/0513/0517

AUTHOR: Krupnov, A. F.; Skvortsov, V. A. 81

TITLE: On a 4-mm-wave molecular generator using a formaldehyde molecular beam 7

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 513-517

TOPIC TAGS: formaldehyde molecular-beam maser, molecular-beam maser, beam maser, millimeter-wave-range maser, maser, Stark effect

ABSTRACT: The dipole moment, rotation constant, and other parameters of the $C^{12}H_2O^{16}$ molecule have been investigated, and the $l_{01}-l_{00}$ rotation transition at 72,838 Mc has been used for the construction of a formaldehyde beam maser in the 4-mm-wave range. The frequency stability of the maser is favorably affected by lack of a hyperfine structure. The instrument was built along the lines of a scaled-down ammonia maser with a Ti_{010} cavity and a crystal-stabilized klystron serving as the radiation source. The measured output power of the generator was of the order of 10^{-11} w. Orig. art. has: 2 formulas and 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskoy universitete (Scientific Research Institute of Radio Physics at Gorkly State University)

Card 1/2

L 14987-63

EWT(1)/EWT(m)/BDS/EEC(b)-2/ES(t)-2 AF*TC/ASD

RM/JHB/WG/K/EH

ACCESSION NR: AP3005291

8/0056/63/045/002/0101/0102

AUTHOR: Krupnov, A. F.; Skvortsov, V. A.

63
62

TITLE: . A molecular beam ¹⁵maser in the 4-mm range, operating on the $1_{01}-0_{00}$ transition in the CH_2O molecule

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 101-102, and illus. following p. 102

TOPIC TAGS: maser, beam maser, molecular generator, formaldehyde maser

ABSTRACT: Maser generation at 72,838 Mc, produced by the $1_{01}-0_{00}$ transitions in the CH_2O molecule, has been achieved. Frequency stability is enhanced by the absence of fine structure and the presence of an upper-level Stark energy maximum in the $1_{01}-0_{00}$ line. The power of the molecular generator is 3×10^{-11} w. An emission line produced by the $5_{14}-5_{15}$ transition was observed at 72,409 Mc. The Stark effect and fine structure of this line are the same as those predicted theoretically. An absorption line in the beam was observed in the $1_{01}-0_{00}$ transition. Orig. art. has: 2 figures.

ASSOCIATION: Institute of Radio Physics, Gor'kiy State University

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ACCESSION NR: AP4009141

S/0056/63/045/006/2080/2081

AUTHOR: Krupnov, A. F., Skvortsov, V. A.

TITLE: Four millimeter maser with Fabry-Perot resonator

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 2080-2081

TOPIC TAGS: Fabry Perot maser, Fabry perot maser resonator, maser, C H sub 2 O maser, maser separator

ABSTRACT: A Fabry-Perot maser operating at 72838 Mc and using the $1_{01} \rightarrow 0_{00}$ transition of the CH_2O molecule was developed and operated. The resonator consists of two flat discs 6.5 cm in diameter, polished to within 1 micron. The separation between discs is $\lambda/2$ (about 2 mm), and the Q is 2000. Coupling is by two waveguides of like polarization. The resonator is fed with one flat beam of active molecules directed in the gap between the plates. The separator is a variant of a ring system suggested by Krupnov (Izv. vuzov Radiofizika, v. 2,

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ACCESSION NR: AP4009141

658, 1959) and operated at 15 kV. The spectral line in the resonator was observed to be a singlet about 15 kos wide. Generation was at one frequency, with a signal to noise ratio not less than 20. The authors thank N. F. Shcherbakov and A. M. Kislitsyn for making the resonator and V. A. Flyagin and V. D. Kalent'yev for their assistance in building the separator.' Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 26Sep63

DATE ACQ: 02Feb64

ENCL: 01

SUB CODE: PH

NO REF SOV: 004

OTHER: 002

Card 2/32

1. Radiofizika, v. 7, no. 5, 1964, 991-992

2. Laser-maser molecule beam. Fiz. Tverd. Tela, 1964, 6, no. 1, 10-11
3. Spectral line shape

ABSTRACT: The authors derive the spectral line shape produced when a beam of molecules interacts with a field of arbitrary configuration of intensity low enough to neglect saturation. This problem is of importance to masers which are used in the design of maser oscillators operating at higher frequencies. The authors assume an essentially inhomogeneous field. From the expression derived for the line shape it is deduced that the line can split if the resonator subtends more than one

Card 1/2

AP 5002330

... of the field. Such a splitting was observed in the
1.2-0.0 radiation of the formaldehyde molecule in a maser with
centimeter resonator. Orig. art. has: 1 formula.

... New York-issued water...
... in...
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1.1000-45 EWG(1)/EWA(k)/PRD/EWT(1)/EEC(k)-2/EEC(t)/ESSE(1)-2/T/EWP(k)/EWA(m)-2/EWA(h)
10/15/1964

AUTHOR: Krupnov, A. F.; Skvortsov, V. A.

TITLE: A 4-mm maser with a Fabry-Perot type resonator

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 2, 1964, 1605-1611

TOPIC TAGS: maser, formaldehyde, formaldehyde maser, Fabry Perot resonator, oscillation mode, generation mode, maser action, Stark effect

ABSTRACT: The shape of the spectral line observed in various oscillation modes in a beam of active HCHO molecules is explained qualitatively on the basis of a study of the structure of the field in a resonator of the Fabry-Perot type. It was established that the maximum value of the parameter is obtained when the distance between the mirrors of the resonator is that giving a single maximum of the electric field. In this case, generation is observed in the $1_{01}-0_{01}$ transition in the HCHO molecule. The Stark effect associated with this transition was studied. A peculiarity of the effect of this transition is that application of an electric field shifts the spectral-

Card 1/2

1. 15089-65

ACCESSION NR: AP5000304

line frequency without splitting or changing the intensity. This effect makes it possible to design a maser which can be tuned to within 10^7 cps by the Stark effect. Orig. art. has: 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy inatitut pri Gorkiy gosudarstvennyy institut (Scientific Research Institute of Radiophysics, Gorky State University)

SUBMITTED: 28Nov63

ENCL: 00

SUB CODE: NP

NO REF SOV: 009

OTHER: 006

ATL PRESS: 31.0

Card 2/2

invention for a method of...
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1. Naukovedeniye...
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APPROVED FOR RELEASE: 06/14/2000

REF ID: A5007042

AUTHOR Krupnov, A. F.; Skvortsov, V. A.

57
E

TITLE Some experimental studies of formaldehyde maser

SOURCE Priboiy i tekhnika eksperimenta, no. 1, 1975, 28-32

TOPIC TAGS: maser, formaldehyde maser

ABSTRACT: Some results are reported of an investigation of a stable-frequency 4-mm maser operating on $1_{01}-0_{00}$ transition of formaldehyde. The resonator of a quartz-phase-AFC-stabilized system was used as the signal, pickup permitted a continuous monitoring of the gain of the excited maser. Hence, a numerical evaluation of the number of active molecules under various conditions was possible. Polyform (a pure polymer of polyhydroxymethylene) was used as a source of formaldehyde. It was found that the maser operation is possible at a still lower temperature. The maser frequency was very stable. A schematic diagram of the maser is shown.

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ACCESSION NR: AP5007042

the authors produced a wide flat beam of active molecules for a Fabry-Perot resonator. the system yielded three times as many active molecules as the conventional quadrupole system would have produced. The Fabry-Perot resonator comprised two 6.5-mm-diameter plane parallel brass mirrors polished within 1 μ. The frequency of the above transition proved to be 12838. Mc. For the $\nu_{14}-\nu_{16}$ line of formaldehyde with a frequency of 1247. Mc was tested.

Figures and 1 table.

[03]

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri CGU
 (Scientific Research Radio Physics Institute at CGU)

APPROVED 19 Dec 63

ENCL.

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OTHER

Card 2/2 *LG*

EWB(k)/FBD/ENG(F)/EWT(1)/EEC(k)-2/EEC(1)/EVC(b)-2/EWP(F)/EWA(k)/

AUTHOR: Krupnov, A. F.; Skvortsov, V. A.

TITLE: On the excitation parameter of a beam maser

SOURCE: IVUZ. Radiofizika, v. 8, no. 1, 1965, 200-203

TOPIC TAGS: beam maser, formaldehyde maser, excitation parameter

ABSTRACT: The authors estimate quantitatively the influence of collisions in a beam on the value of the maximum attainable excitation parameter. The results are compared with experimental data for a formaldehyde maser, data which were presented by the authors earlier (Izv. vyssh. uch. zav. - Radiofizika v. 7, 1963; ZhETF v. 45, 101, 1963). The dependence of the excitation parameter on the molecule flux and on the length of the sorting system is also obtained with collisions taken into account. Plots are presented of the variation of the excitation parameter with the sorting voltage, the source temperature, the length of the sorting system, and the beam intensity. The agreement between the theoretical calculations and the experiments is satisfactory, but it is expected that the absolute value of the excitation parameter estimated in the paper would

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... because no account was taken of the technical and structural factors which affect the excitation parameter. Orig. art. has a formula

... Nauchno-issledovatel'skiy radiofizicheskii institut, Serpukhov
... Physics Scientific Institute, Serpukhov

OTHER:

2/2

AP5005360

11/12/65

AUTHOR: Krupnov, A. F.; Skvortsov, V. A.

TITLE: On the problem of sorting molecules in a beam maser ²⁴ ₂₅ B

SOURCE: Radiotekhnika i elektronika, v. 10, no. 2, 1965, 378-379

TOPIC TAGS: maser, beam maser, molecular sorting, sorting system, quadrupole sorting system, ring sorting system

ABSTRACT: A ring and a quadrupole sorting system were investigated to determine which was more expedient for utilization in beam masers. A beam maser without diaphragms which had a cavity for F_{010} oscillations was used in the experiment. Both sorting systems were 2 mm in diameter and 17 mm in length, and the field intensities produced were approximately equal. The effectiveness of the systems was determined by the parameter of maximal maser excitation η . Measurements were made at various distances d between the end of the sorting system and the cavity. Parameter η was 0.55 at $d = 2.5$ mm and 0.6 at $d = 17$ mm for the quadrupole system and 0.5 and 0.7 at the same values of d for the ring system. At a length of 45 mm, maser generation was approximately the

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ACCESSION NR: AP5005360

same in both systems, which demonstrates the practically identical effectiveness of the two systems. Further analysis led to the conclusion that the effectiveness of sorting does not depend on the direction of the field in the sorting system but on the direction of the sorted molecular beam in relation to the cavity field vector. Orig. app. based on formula.

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(pw)

11/11/64 No. none

11/11/64 01 Mar 64

11/11/64

11/11/64 202

L 4101E 66 EWT(1)/EEC(k)-2/EWP(k)/T/FED IJP(c) WG
ACC NR: AP6026940 SOURCE CODES: UR/0141/66/009/004/0824/0827

AUTHOR: Krupnov, A. F.; Skvortsov, V. A.

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete) 47B

TITLE: Increasing the beam length in a maser with spaced resonators

SOURCE: ¹⁵IVUZ. Radiofizika, v. 9, no. 4, 1966, 824-827

TOPIC TAGS: maser, gaseous state maser ,

ABSTRACT: Practical methods of increasing the maser beam length, i.e., of enhancing the line Q-factor, were investigated. Various schemes of formation of a long-beam of active molecules were tested. The maximum distance between the sorting system and the single resonator at which the self-excitation was still possible served as an efficiency criterion. A maser with $J = 3$, $K = 3$, $N^{14}H_3$ was used in the experiments. A 0.15-mm diameter channel whose length was equal to its diameter was used as a beam source. The sorting system 100-mm long, 6-mm diameter consisted of rings with 3-mm spacings between them. For E_{010} -mode, the 100-mm long resonator had a Q-factor of about 9000. Generation was obtained with a distance of 70 cm between the sorting system and the single resonator. The optimal distance between the source and the sorting system proved to be 19 mm. A 0.5-mm deviation of the source from the sorting-system axis halved the excitation parameter, which testified to

Card 1/2

UDC:621.378.33

1016-66

ACC NR: AP6026940

the fact that larger beam diameters should not have been used. These results corroborate G. Becker's results (Zs. angew. Phys., 1963, 15, 281) about the advantages of the point sources and ring sorting systems whose field is independent of the azimuth and which ensures the absence of "azimuth aberrations" in forming the active-molecule beam. F. Holuj's et al. conclusions about a partial structure resolution with an interresonator distance of 30-cm based on a certain asymmetry in the amplitude-frequency maser characteristics is held premature; this asymmetry could be due to some technical factors. A radiation line was observed by the authors with a 2-mm distance between the resonators; this line was completely resolved into two components separated by 1586 ± 80 cps. Orig. art. has: 3 figures and 1 table. (03)

SUB CODE: 20 / SUBM DATE: 24Jan66 / ORIG REF: 009 / OTH REF: 005 / ATD PRESS: 5159

Card 2/2 hs

L 11017-56 EWT(1)/EWT(m)/BEC(k)-Z/BHP(1)/EWP(k)/T/FPD IJP(c) RH/WG/DS
ACC NR: AP6026941 SOURCE CODE: UR/0141/66/009/004/0827/0828

AUTHOR: Krupnov, A. F.; Skvortsov, V. A. 53

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gorkovskom universitete)

TITLE: Reorientation of molecules in a formaldehyde beam maser 27

SOURCE: IVUZ. Radiofizika, v. 9, no. 4, 1966, 827-828

TOPIC TAGS: maser, liquid state maser, gaseous state maser

ABSTRACT: Reorientation processes in a formaldehyde $1_{01}-0_{00}$ -transition maser were experimentally investigated. Only the molecules having $M = 0$ interact with an E_{010} field when they enter the resonator. When a reorienting field is superposed, the transitions $M = 0 \rightarrow M = \pm 1$ and $M = \pm 1 \rightarrow M = 0$ will take place with equal probabilities, and the excitation parameter will decrease. The excitation parameter was found to decrease to one third at 100% reorientation. A small ring encompassing the molecular beam was placed between the ring-type sorting system and the E_{010} -mode resonator and served as a weak-field-creating electrode; the maser was operated as an amplifier; the excitation parameter and the ring voltage were measured. With the same sorting system, source, and reorienting ring, experiments were conducted with $^{14}\text{H}_2$ maser, $J = 3$, $K = 3$. In this case, the effect of ring voltage on the excitation

Card 1/2

UDC: 621.378.33

L 41017-66

ACC NR. AP6026941

parameter was very weak (about 1%). Thereupon, additional experiments were staged with an outfit described by N. G. Basov et al. (ZhETF, 1963, 45, 1768); the maximum variation of the excitation parameter was found to be about 20%, which is substantially lower than that in the formaldehyde maser. Orig. art. has: 2 figures. [03]

SUB CODE: 20 / SUBM DATE: 24Jan66 / ORIG REF: 002 / ATD PRESS: 5059

Card 2/2 s

ACC NR: AP7008267

SOURCE CODE: UR/ 141/67/010/001/0140/0142

AUTHOR: Krupnov, A. F.; Skvortsov, V. A.; Sinegubko, L. A.

ORG: Scientific Research Radiophysics Institute of the Gor'ky University (Nauchno-issledovatel'skiy institut pri Gor'kovskom universitete)

TITLE: The optimal variant of a two-resonator maser with opposing beams

SOURCE: IVUZ. Radiofizika, v. 10, no. 1, 1967, 140-142

TOPIC TAGS: maser, gaseous state maser, ammonia, *Q factor, resonator Q factor, spectral line, maser beam*

ABSTRACT: The authors studied the optimal configuration and the limiting gain advantage in the effective Q-factor of the narrowed spectral lines in Ramsey maser circuits with distributed resonators and opposing beams. The gain advantage was determined as the ratio of the effective Q-factor of the spectral line in a two-resonator circuit to the Q-factor of the spectral line in a generator with a single resonator. An experiment was performed to determine the dependence of $X(l)$ (beam attenuation coefficient as a function of the length of the resonator) with a maser operating on the 3-3 transition of ammonia $N^{14}H_3$. Above, $X(l) = N(l)/N(0)$, where $N(0)$ is the number of active molecules arriving from the sorting system of the first resonator, and $N(l)$ the number of molecules that reach the second resonator. The relationship of the number of active molecules $N(l)$ reaching the single resonator from a sorting system placed at a distance l from the resonator, to the number of molecules $N(0)$ reaching the resonator placed next to the sorting system ($l = 0$) was

UDC: 621.378.3

Card 1/2

ACC NR: AP7008267

also measured. When both these measurements were made the power gain $K(l)$, $K(0)$ of the non-excited maser was measured for a constant beam intensity and sorting voltage. Fig. 1 (a plot of X vs. l) shows some of the results obtained. By using the experimentally obtained dependence of $X(l)$, for example, the maximum possible gain advantage of the effective line Q-factor of a two-resonator over a single (10 cm long)

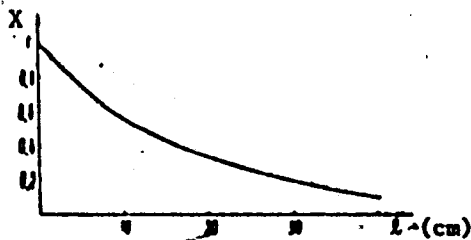


Fig. 1. Dependence of the beam attenuation coefficient on the length of the resonator

resonator maser was calculated. This gain advantage, which equalled 3.5, corresponded to $l = 27$ cm. The authors thank B. V. Goromov and Yu. I. Nikolayeva for their help in the experiment. Orig. art. has: 2 figures. [IV]

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

Card 2/2

KRUPNOV, A.K.; IMANAYEV, N.G.

Excluding bottom waters through hydraulic fracturing of strata in
the fields of the Tuymazy Petroleum Trust. Neft. khoz. 35 no.11:
55-58 N '57. (MIRA 10:11)
(Tuymazy region--Oil well cementing)

KRUPNOV, A.K., inzh.

Increase working safety in hydraulic fracturing of strata.
Bezop. truda v prom. 2 no.8:16-17 Ag '58. (MIRA 12:7)
(Oil wells--Hydraulic fracturing)

IMANAYEV, N.G.; KRUPHOV, A.K.

Interval multiple fracturing using balls as temporary sealing agents; fracturing practices in the Tuymazy Petroleum Trust.
Neft. khoz. 38 no.10:8-14 0 '60. (MIRA 13:9)
(Tuymazy region--Oil wells--Hydraulic fracturing)

KORETSKIY, G.Ya.; KRUPNOV, A.V.

Use of various types of refractories in rotary kilns. TSement
27 no.6:11-12 N-D '61. (MIRA 15:3)
(Kilns, Rotary) (Refractory materials)

VOSKRESENSKIY, S.I.; "Prinimali uchastkiye: TSESSARSKIY, V.N., KUPCHENOV, G.A.

Purification in wet electrostatic filters of gases containing
sublimates of zinc, lead, and other nonferrous metals. Sbor.
nauch. trud. Gintsvetmeta no.20:68-81 '63. (MIRA 17:12)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut tsvetnykh
metallov (for TSeSSarskiy). 2. Zavod "Elektr. tsink" (for
Krupnov).

31195

S/079/61/031/012/009/011
D204/D301

5 3630

AUTHORS: Pudovik, A. N., and Krupnov, G. P.

TITLE: A new method of synthesizing phosphinic and thiophosphinic esters. XXXVI. Synthesis of phosphinic acid derivatives containing cyclic radicals in the ester group

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 12, 1961, 4053-4055

TEXT: Compounds of the general formulae $(RO)_2 \cdot \overset{O}{\parallel} PCH_2CH(R')X$ (I), where $R = C_6H_{11}^-$, $C_6H_5CH_2^-$, $R' = -H, -CH_3$, $X = -CN, -COOCH_3, -COOC_4H_9$ and $(RO)_2 \overset{O}{\parallel} POH(C_6H_5)NHC_6H_4X$ (II), where $R = C_6H_{11}^-$, $C_6H_5^-$, $C_6H_5CH_2^-$, $X = p-CH_3, -H, p-NO_2$ were prepared in a search for new plasticizers for cellulose esters and other polymers. The ge-
Card 1/3

31195

S/079/61/031/012/009/011
D204/D301

A new method of synthesizing ...

neral method of preparation consisted of adding esters of dicyclohexyl, dibenzyl and diphenyl phosphorous acids to unsaturated, electrophilic compounds, in the presence of a catalyst. Na alcoholate in absolute alcohol was added dropwise to an equimolecular mixture of the appropriate phosphorous ester and either an ester or nitrile of an unsaturated carboxylic acid or a Schiff's base, with constant stirring, keeping the temperature below 50-90°C. The reaction mixture was then heated for 1 - 2 hours on a steam bath. The products were purified either by distillation (ordinary or high-vacuum), or by repeated washing with water to remove the catalyst, and drying. The yields were 13.6 - 68% in the case of (I) and 61 - 88% in the case of (II). Distillation of the reaction products was difficult owing to a tendency towards charring and decomposition, but comparable purity could be achieved by the washing method. Esters (I) were colorless, involatile liquids insoluble in water but soluble in a number of organic solvents; aminophosphinic esters (II) were crystalline substances, insoluble in water but soluble in alcohol. Physical constants of both types of products are tabulated. There are 2 tables and 3 references: 2 Soviet-bloc

Card 2/3

31195

A new method of synthesizing ...

S/079/61/031/012/009/011
D204/D301

and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Atherton, Koward and A. Todd, J. Chem. Soc. (1948), 1182.

ASSOCIATION: Kazanskiy filial vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta (Kazan Branch of the All-Union Scientific Research Institute of Motion Picture Photography)

SUBMITTED: December 26, 1960

X

Card 3/3

L 10102-00 EWI(M)/EWP(J) HT

ACC NR: AP5028480

SOURCE CODE: UR/0286/65/000/020/0064/0064

AUTHORS: ⁴⁴¹⁵⁵Moshkina, T. M.; ⁴⁴¹⁵⁵Pudovik, A. N.; ⁴⁴¹⁵⁵Krupnov, G. P.; ⁴⁴¹⁵⁵Bukin, A. I.; ⁴⁴¹⁵⁵Semenova,
L. A. ⁴⁴¹⁵⁵

ORG: none

53
B

TITLE: Method for obtaining plasticized ester-cellulose films, for instance, triacetate cellulose films. Class 39, No. 175646¹⁵ [announced by All-Union Scientific Research Motion Picture Institute (Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut)] ⁴⁴¹⁵⁵

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 64

TOPIC TAGS: polymer, plasticizer, plastic compound, plastic material, plastic, film

ABSTRACT: This Author Certificate presents a method for obtaining ester-cellulose films, for instance, triacetate cellulose films, by introducing esters of polybasic acids into a solution of cellulose triacetate. To increase the variety of plasticizers, esters of phosphonoacetic acid are used as the plasticizing agent.

SUB CODE: 11/ SUBM DATE: 13Jun64

Card 1/1

UDC: 678.544.43 678.049.13.002.2

PUDOVIK, A.N.; KRUPNOV, G.P.

Reactions of nucleophilic addition of phosphoric acid dialkyl
esters amides. Zhur. ob. khim. 33 no.5:1654-1658 My '63.
(MIRA 16:6)

1. Kazanskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
kinofotoinstituta.

(Phosphoric acid)
(Addition reactions)

L 04095-67 EWP(j)/EWT(l)/EWT(m)/T IJP(c) RM

ACC NR: AR6023276

SOURCE CODE: UR/0058/66/000/003/D124/D124

AUTHOR: Pudovik, A. N.; Moshkina, T. M.; Krupnov, G. P.; Bukin, A. I.; Semenova, L. A.

TITLE: Plastification of triacetate celluloid films by mixed phosphoric-acid ethers

SOURCE: Ref zh. Fizika, Abs. 3D1028 4 3°

REF SOURCE: Tr. Vses. n.-i. kinofotoin-ta, vyp. 52, 1965, 5-16 46
e

TOPIC TAGS: photographic film, plasticizer

ABSTRACT: The authors investigated the plastification of triacetate films by mixing phosphoric-acid ethers. It is shown that at least some diphosphates of diethylene glycol result in better mechanical film properties than the previously used mixture of triphenyl phosphate and dibutyl phthalate. However, in the presence in them of aliphatic radicals, their compatibility with the film deteriorates with increasing length of the radical. To improve the compatibility, one can introduce cyclic radicals, Cl atoms, and alcoxyl groups into the ether groups. The most effective for the compatibility are the latter, and they also improve noticeably the physical and mechanical properties of the films. A. Karuzhanskiy. [Translation of abstract]

SUB CODE: 14

kh

Card 1/1

PUDOVIK, A.N.; MOSHKINA, T.M.; KRUPNOV, G.P.; BUKIN, A.I.; SEMENOVA, L.A.;
Prinimali uchastiye: KOSTYUKOVA, L.A., laborant; PETROVA, M.G.,
laborant; TEMIRBAYEV, A.M., inzh.; FAYZULLIN, A.Yu., inzh.; POLOZOVA,
L.P., laborant; NAZAROVSKAYA, G.V., laborant

Synthesis and study of organophosphorus plasticizers for the tri-
acetate film bases. Trudy NIKFI no.46:17-25 '62.

(MIRA 18:8)

L 2922-00 GWF(1)/EWI(m) RM

ACC NR: AP6019329

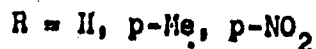
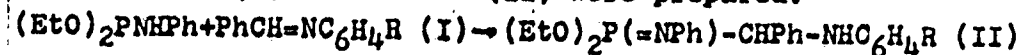
SOURCE CODE: UR/0079/65/035/008/1502/1503

AUTHOR: Pudovik, A. N.; Krupnov, G. P.ORG: Kazan' State University (Kazanskiy gosudarstvennyy universitet)TITLE: Addition of diethylphosphorous acid anilide to Schiff bases

SOURCE: Zhurnal obshchey khimii, v. 35, no. 8, 1965, 1502-1503

TOPIC TAGS: Schiff base, organic phosphorus compound, amide, chemical reaction

ABSTRACT: By the addition of diethylphosphorous acid anilide to Schiff bases (I) substances (II) were prepared:



The structure of (II) was confirmed by the fact that sulfur did not add to them on heating to 140° and by the formation of aniline hydrochloride from (II) (R = H) on hydrolysis in acidified water. Furthermore, trialkyl phosphites do not add to Schiff bases in a spontaneous reaction of the type by which compounds (II) formed - i.e., the amide group of diethylphosphorous acid anilide must have participated in the reaction. Compounds (II) were crystalline.

Card 1/2

UDC: 547.55.3/.4+547.26:118

L 29292-66

ACC NR: AP6019329

solids with m. p. 172-3°, 165-6°, and 187-9° for (II) (R = H),
(II) (R = p-Me), and (II) (R = p-NO₂), resp. Orig. art. has: 3 formulas. 0

[JPRS]

SUB CODE: 07 / SUBM DATE: 19Mar65 / ORIG REF: 001

Card 2/2 *no*

RUMYANTSEV, V.I.; KRUPNOV, L.N.

Improvements in the production of aluminum caps for flasks with antibiotics. Med.prom.17.no.4:43-46 Ap '63. (MIRA 16:7)

1. Saranskiy zavod meditsinskikh preparatov.
(ANTIBIOTICS—CONTAINERS)

KRUPNOV, N. K.

AID P - 818

Subject : USSR/Engineering

Card 1/1 Pub. 78 - 3/26

Author : Krupnov, N. K.

Title : Hydraulic load on the turbo-drill shaft

Periodical : Neft. khoz., v. 32, #9, 9-12, S 1954

Abstract : The author presents an analytical formulation of the effect of hydraulic loads on the shaft under idling conditions and working operation of the turbo-drill. Two Russian references (1952-1953).

Institution: None

Submitted : No date

KRUPNOV, N.K.; BAYKOV, U.M.; KAGAN, Ya.M.

Injecting unfiltered water to maintain reservoir pressure.
Neft. khoz. 41 no.4:31-35 Ap '63.

(MIRA 17:10)

ACC NR: AN7001731

SOURCE CODE: UR/9008/67/000/010/0003/0003

AUTHOR: Krupnov, R. (Engineer; Captain 2d rank; Candidate of technical sciences)

ORG: none

TITLE: Detection of combat vessels

SOURCE: Krasnaya zvezda, no. 10, 12 Jan 67, p. 3, cols. 1-3

TOPIC TAGS: naval equipment, detection

ABSTRACT: Based on foreign sources, the author describes the various means used for the detection of surface vessels and submarines, as well as how to prevent it. [NC]

SUB CODE: 15/ SUBM DATE: none/ ATD PRESS: 5110

Card 1/1

KRUPNOV, R., inzh.-elektromekhanik

Repairs of electrical equipment on ships by V.P. Ashcheulov. Reviewed
by R. Krupnov. Mer flot 20 no.9:45 S '60. (MIRA 13:9)
(Electricity on ships)
(Ashcheulov, V.P.)

KRUPNOV, R.S., inzhener-kapitan 2 ranga

Increasing the military and technical knowledge of naval officers. Mor.
sbor. 44, no.3:47-51 Mr '61. (MIRA 14:4)
(Naval education) (Russia—Navy—Officers)

L 26156-66 EWA(h)/EWT(1)/EWT(m)/FSS-2 JI/JKT

ACC NR: AN6014176

(N)

SOURCE CODE: UR/9008/66/000/005/0002/0003

AUTHOR: Krupnov, S. (Colonel, Candidate of philosophical sciences)

34.
B

ORG: none

TITLE: According to the laws of dialectics. The development of means and forms of armed warfare 4

SOURCE: Krasnaya zvezda, 07 Jan 66, p. 2, col. 1-7, p. 3, col. 1-5

TOPIC TAGS: nuclear warfare, nuclear weapons

ABSTRACT: The author discusses the political, economic, social, and geographic aspects of war and the impact of new weapons (atomic bombs, missiles, etc.) on the conduct of warfare today. The author notes the emergence of a number of 'contradictions' with the advent of new weapons, e. g., the need for an overall, highly centralized command and the need for low echelon commanders to act on their own initiative. Another 'contradiction' cited is the need to search for new modes of warfare without discarding old but useful devices. From the viewpoint of materialist dialectics, new forms and means of warfare acquire importance only when they attain significant magnitude.

SUB CODE: 15/

SUBM DATE: 00/

ORIG REF: 000/

OTH REF: 000

Card 1/1 CC

SHIBER, R.A.; KRUGLYY, G.T.; BAZHOV, I.S., inzh., retsenzent;
SAMOKHVALOV, S.F., inzh., retsenzent; FEDOROV, V.A., inzh.,
retsenzent; KRUPNOV, S.A., inzh., retsenzent; YESHCHIN,
S.B., inzh., retsenzent; SARANTSEV, Yu.S., inzh., red.;
KHITROVA, N.A., tekhn. red.

[Design, maintenance and repair of railroad cars] Ustroistvo
i remont vagonov. Moskva, Transzheldorizdat, 1963. 395 p.
(MIRA 16:6)

(Railroads--Cars)

SHIBER, Ruvim Abramovich; KRUGLYY, Georgiy Tikhonovich; BAZHOV, I.S.,
inzh., retsenzent; SAMOKHVALOV, S.F., inzh., retsenzent;
FEDOROV, V.A., inzh., retsenzent; KRUPNOV, S.A., inzh.,
retsenzent; YESHCHIN, S.B., inzh., retsenzent; SARANTSEV,
Yu.S., inzh., red.; KHITROVA, N.A., tekhn. red.

[Arrangement, maintenance and repair of cars] Ustroistvo i
remont vagonov. Moskva, Transzheldorizdat, 1963. 395 p.
(MIRA 17:2)

KRUPNOV, Sergey Ivanovich, polkovnik, kand. fil. nauk; KOZLOVA,
S.N., general-mayor, red.; ROMANOV, I.M., polkovnik, red.;
ZUDINA, M.P., tekhn. red.

[Dialectics and military science] Dialektika i voennaia
nauka. Moskva, Voenizdat, 1963. 201 p. (MIRA 17:1)

L 27513-66 EWT(1)/PSS-2

ACC NR: AP5022957 (A) SOURCE CODE: UR/0317/65/000/002/0058/0060

AUTHOR: Zavalishin, V. (Lieutenant Colonel); Krupnov, V. (Lieutenant Colonel)

ORG: None

TITLE: Charging cannon shells³ for firing

SOURCE: Tekhnika i vooruzheniye, no. 2, 1965, 58-60

TOPIC TAGS: artillery weapon , weapon fuse

ABSTRACT: The authors describe the equipment used for final preparation of cannon and mortar shells for firing operations. The equipment can be used under field conditions. It consisted of a folding table (1800 mm long, 850 mm wide, 900 mm high) carrying various tools and devices for removing blank plugs, fixing and punching igniters. The table was made of wood. A 200-mm shelf can be attached to the table for shells longer than 850 mm. The devices used for charge pressing were of PZMK-1, PZMK-2 or PZMK-3 types. A well trained team of 11 men can handle over 100 shells per hour. Orig. art. has: 2 figures showing the table and auxiliary equipment.

SUB CODE: 19 / SUEM DATE: None / ORIG REF: 000 / OTH REF: 000

Card 1/1 BIG

19
B

2

SUKHOVILOV, N., podpolkovnik; KRUPNOY, V., mayor; ZHIZHN, A., podpolkovnik;
DADONOV, A., mayor; FEYEROV, A., gvardii mayor; IVANOV, P., gvardii
polkovnik

Important problem.. Voen.vest. 39 no.4:52-55 Ap '60. (MIRA 14:2)
(Russia--Army--Noncommissioned officers)

Krupnov, V. A.

KRUPNOV, Y. A.

"Certain Questions of the Agrotechnics of Winter Wheat in the Volga Region." Cand Agr Sci, Saratov Agricultural Inst, Min Higher Education USSR, Saratov, 1955. (KL, No 10, Mar 55)

SO: Sum No. 670, 29 Sep 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

BRAGIN, V.A.; KRUPNOV, V.K.

History of the petroleum industry of the Kuban. Nefteprom.
delo no.10:9-11 '64. (MIRA 17:12)

1. Ob'yedineniye "Krasnodarneftegaz".

BUNYATOV, T.A., kandidat istoricheskikh nauk; KRUPNOV, Ye., redaktor;
SULTANOVA, N.A., redaktor izdatel'stva; AGAYEVA, Sh.K.,
tekhnicheskiy redaktor.

[Agriculture and cattle breeding in Azerbaijan during the Bronze
Age] Zemledelis i skotovedstvo v Azerbaidzhane v epokhy bronsy.
Baku, Izd-vo Akad.nauk Azerbaidzhanskoi SSR, 1957. 136 p.
(MLBA 10:6)

(Azerbaijan--Agriculture, Primitive)

KRUPNOV, E. I.

PA - 2482

AUTHOR
TITLE

by E.I. Krupnov
Archeological Studies on Caucasia
(Arkheologicheskoye izucheniye Khavkaza, Russian)

PERIODICAL

Vestnik Akademii Nauk SSSR 1957, Vol. 27, No. 1, pp. 114-115,
(USSR)

ABSTRACT

Received: 2 May 1957
Reviewed: 4 June 1957
From 22 to 28 October 1956 a conference took place in Erivan on the archeology, ancient and middle history of the peoples of Caucasia. It was the task of the conference to compile the scientific research work in the above field, in order to solve the general problem of the archeology of Caucasia and in order to establish a program for future research. The conference was attended by over 200 delegates from the Academies of Science of the USSR, the Ukrainian SSR, the Georgian SSR, the Azerbaidzhan SSR, from the Universities of Leningrad, Baku, and Erivan, and from other scientific and cultural institutions. Fifty-six lectures and reports were given at the plenary meetings. I.A. Orbeli, Member of the Academy and chairman of the organizational committee of the conference, reported in his introductory lecture on the scientific research for the exploration of the Caucasus since the Fifth Conference of Russian Archeologists that had taken place in Erivan 75 years ago. The lecture by B.B. Piotrovskij,

CARD 1/3

Archeological Studies on Caucasia
(Arkheologicheskoye izuchenie Khavkaza, Russian)

PA - 2482

Member of the Armenian Academy of Sciences, on "Caucasian Hinterland and the Old West" aroused particularly great interest and was followed by a humorous discussion. F.N. Tavadze, doctor of technical sciences, lectured on "Copper and Bronze Metallurgy in Ancient Georgia" and reported about recent methods of metallographic and chemical investigation of the old copper and bronze objects. I.M. Dzhafar-Zade, candidate for the doctor's degree in history, spoke about the study of old inscriptions and drawings which have been cut into stone and can be found in great numbers south of Baku. K.V. Trever, Corresponding Member of the Academy of Sciences of the USSR, reported on "Caucasia from the Fourth to the Seventh Century". Other lectures dealt with the origin of the cities in Caucasia as well as with the investigation of different monuments of antiquity, old manuscripts, collections, etc. The participants of the conference agreed that in spite of the great progress made in this field there still existed serious shortcomings. For instance, the co-ordination of the archeological work of the scientists in Georgia, Armenia, Azerbaidzhan and Northern Caucasia is completely lacking. The research work is carried on very unevenly. The history of Caucasian Albania as well as its culture have been completely "forgotten". Conservation

CARD 2/3

Archeological Studies on Caucasia
(Arkheologicheskoye isuchenie Khavkaza, Russian)

PA - 2482

of objects of antiquity is badly organized. After the conference, the participants visited some areas of Caucasia which, from a historical point of view, command the greatest interest.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: library of Congress.

CARD 3/3

Krupnov, Ye. I.

25-2-24/43

AUTHOR: Krupnov, Ye.I., Head of the North Caucasian Archaeological Expedition, Candidate of Historical Sciences

TITLE: What the Caves Tell Us (O chëm rasskazyvayut peshchery)

PERIODICAL: Nauka i Zhizn', 1958, # 2, pp 67 - 70 (USSR)

ABSTRACT: Many centuries ago people of Sarmatian origin - called Alans - lived in Caucasian districts which are today known as North Osetiya and Chechen-Ingush ASSR. In the summer of 1957, an archaeological expedition made some very interesting excavations, which threw some light upon the ethnic history and culture of the peoples of these regions.
There are 8 sketches.

AVAILABLE: Library of Congress

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AUTHOR: Krupnov, Ye. I., Candidate of Historical Sciences 30-58-3-20/45

AUTHOR: Travel to Lebanon (Poyezdka v Livan)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958, Nr 3, pp. 88-91
(USSR)

ABSTRACT: The republic Lebanon is one of the countries the relation of which with the ancient population of the South of the USSR can be retraced according to archeological data. This journey ought to help to find new proofs for these relations. The object of this journey was to establish personal contacts with the archaeologists of the Lebanon as well as to clear the possibilities of organizing common excavations. Furthermore, the author describes his meetings with a series of competent personalities of the Lebanon. It was agreed with the Minister of Foreign Affairs, Sharl' Malik, to organize a Soviet-Lebanese archaeological expedition in 1959 which will be entitled to select objects for excavations at their convenience all over the country. The author further describes his visits to the

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museums of the country with their rich antique exhibits and he was particularly impressed by the Syrian National Museum in Damascus. Already taking a glance of the museums showed the importance of the antique relations of the Southern peoples of the USSR, especially from the Caucasus with the peoples from the Near East. The public lecture delivered by the author in Beirut was equally devoted to this topic. The existence and the character of these relations - starting from 3000 years before Christ until to the Middle Ages - was proved by means of a series of archaeological and historical facts. It is confirmed by archaeological data that already in time immemorial, copper, volcanic glass and other raw materials were brought from the Caucasus to the Near East, whereas the countries of the Near East supplied the Caucasus with hand-worked products and ornaments. The author further describes in full details the close cultural relations between the Caucasus and the peoples of the Near East. The author visited the villages of Lebanon where excavations are carried out for years. He also visited buildings of antique civilization. Concluding, the author states that the establishment of

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scientific relations with the Lebanon would also be beneficial
for a cultural approach of the two countries.
There are 2 figures

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T. Iuzvic

*A-U Sci Res
Inst. Hydrolysis
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