

Begin reel
082

YERMAKOV, B.

Spark arrester with a reflector. Posh.delo 6 no.8:28
Ag '60. (MIRA 13:8)

1. Starshiy inspektor Upravleniya posharnoy okhrany
Uzbekskoy SSR, Tashkent.
(Tractors--Equipment and supplies)

L 15574-43
ACCESSION NR: AF3902170

EMP(q)/ENT(n)/RDS AFPTC/ASE JD

8/1921/1/1/000/009/0036/0104

AUTHORS: Oaiyov, V. P.; Yernakov, B. A.

54
53

TITLE: The study of top pouring electric steel

SOURCE: AN Ukr RSR. Viddil tekhnichnykh nauk. Voprosy proizvodstva stali. no. 9, 1963, 96-104

TOPIC TAGS: electric steel, top pouring, bottom pouring

ABSTRACT: The results obtained by the top- and bottom-pouring methods are described and compared, and the advantages of top pouring over bottom pouring are discussed. The main disadvantages of bottom pouring are its requirement of additional equipment (refractory materials, bottom plates, etc.), more working hours, loss of metal in casting channels, and their easy rupture. Top pouring is free from these shortcomings, produces better microstructure, and is more amenable to automation. However, bottom pouring was preferred until recently. The old method of top casting resulted in an inadequate ingot surface on alloy steels, required an overall cleaning of the ingot, and caused the adhesion of metal to the bottom of the mould because of the strength of jet impact against

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L 15574-63

ACCESSION NR: AT3002170

the mould bottom. The new top-pouring procedure was worked out and tested in 1960. The formation of surface defects was eliminated by covering the moulds with special glass fabric and by using a certain amount of liquid slag in pouring. This protected the exposed metal surface and prevented the bottom sticking. The authors conclude that despite an 8-10% loss of TiO₂ in burning the quality of stainless steel was not affected, that the new procedure of top casting is much simpler, that it produces the same results, and that it is less expensive than the bottom pouring. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10May63

ENCL: 00

SUB CODE: ML

NO REF SOV: 00

OTHER: 002

Card 2/2

YERMAKOV, B.A.; LUKIN, A.V.; MAK, A.A.

Shortening of the lifetime of the metastable level in a
Q-modulated laser. Opt. i spektr. 18 no.2:353-354 F '65.
(MIRA 18 4)

BALASHOV, I.F.; YERMAKOV, B.A.

Frequency characteristics of photoelectric multipliers.
Radiotekh. i elektron. 9 no.5:907-909 My '64.

(MIRA 17:7)

05449
SOV/120-59-3-20/46

AUTHORS: Yernakov, B. A., and Mak, A. A.

TITLE: Use of Storage in Recording Flash Spectra Photoelectrically
(Primeneniye metoda nakopleniya pri fotoelektricheskoy
registratsii vremennykh spektrov svetovykh
vspyshek)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3,
pp 94-97 (USSR)

ABSTRACT: The system is illustrated by Fig 1, in which 1 is the pulsed (repetitive) light source, 2 is the grating monochromator, 3 is the photomultiplier, 4 is the amplifier, 5 is the delay line (with a synchronizing pulse input), 6 is the gating-pulse generator, 7 and 7' are electronic gates, 8 and 8' are stores, 9 is the output stage, and 10 is a recorder. (The object of 7' and 8' is to improve the stability of the zero reading) The second section deals with the errors of measurement and with the choice of scan rate. The third section describes the units briefly; amplifier 4 is a normal video-amplifier with a rise time of 0.05 μ sec and with a gain of 100. The amplifier is linear up to 3 V output. The gating-pulse generator uses a thyatron to discharge

Card 1/2 a delay line. Fig. 3 shows the differential output

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Use of Storage in Recording Flash Spectra Photoelectrically

stage, together with the gates and stores. Fig 4 shows the contour of the 2605 Å line of Xe III at $2 \cdot 10^{-6}$ sec after the start of a discharge from 0.05 µF capacitor charged to 12 kV; the integrating time is 10 sec, with a repetition frequency of 15 c/s. The time resolution is 5×10^{-8} sec; the wavelength resolution is 1.5 Å. There are 4 figures and 8 references, 5 of which are Soviet and 3 western.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optical Institute)

SUBMITTED: March, 24, 1958

Card 2/2

YERMAKOV, B. A.

25378

B/089/61/011/001/007/010
B102/B214

216000

AUTHORS: Rostovtsev, A. A., Il'in, Yu. I., Beregovskiy, A. S.,
Tishin, V. G., Zezyulin, V. Ye., Yermakov, B. A.

TITLE: A two-dimensional 1024 channel pulse-height analyzer of the
type DMA-1024 (DKA-1024)

PERIODICAL: Atomnaya energiya, v. 11, no. 1, 1961, 58 - 59

TEXT: The two-dimensional amplitude analyzers developed in the west suffer from certain shortcomings. For example, the one described in Ref. 1 allows only for a qualitative study of the spectrum; those described in Refs. 2 and 3, though allowing for quantitative study, have two-stage recording and the results can not be observed during the experiment. These have some other disadvantages, too. The authors of this "Letter to the Editor" have developed and constructed a two-dimensional pulse-height analyzer with 1024 channels; it wears the designation DMA-1024. It consists of a recorder block and two equal sorting instruments "X" and "Y" into which the pulses of the detectors are fed; these are recorded and processed only under certain given conditions of coincidence. The analyzer Card 1/5

A two-dimensional 1024 channel ...

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SC89/51/011/001/007/010
B102/B214

X

channels are arranged in the form of a matrix (32-32 = 1024). The channels of the magnetic storage system (with ferrite nuclei) have each a capacity of 16,000 pulses. The informations are made visible on the screens of two cathode-ray tubes of the type 13X037 (13L037). The information is represented on the screen of one of the tubes in a linear system with ~10% accuracy, and on that of the other in a two-decadic system in the form of an optically modulated point screen. The analyzer works with vacuum tubes and semiconductor diodes; in all it contains 350 tubes. The apparatus operates on a.c. mains (220 v, 50 cps) and consumes 2.5 kw. Its size is 2000-900-800 mm. The apparatus is easy to control, and has a reliable uninterrupted working for 8 hours. The temporal distribution of two correlated processes can also be studied with its help. The figure shows

a two-dimensional spectrum of the Co⁶⁰- γ -radiation taken by means of this apparatus. The spectrum shows three groups of possible coincidences. The group of coincidences for complete absorption of the γ -rays with the energies 1.17 and 1.33 Mev in both crystals (photopeak) is represented by two vertices: 1.17; 1.33 Mev, and 1.33; 1.17 Mev. The group coincidences for complete absorption in the one, and partial absorption in the other crystal (Compton scattering) is represented by four "ridges" (photopeaks -
Card 2/5

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8/089/61/011/001/007/010
8102/8214

A two-dimensional 1024 channel ...

Compton). The group of coincidences for partial absorption in each of the two crystals, is represented by the surface part designated "Compton - Compton". Scintillation counters with photomultipliers of the type 43Y1C (FEU1S) and NaI (TI) crystal of 30 mm length and 20 mm height were employed for taking the spectrum. The resolving time of the coincidence circuit was ~1 nsec. The authors thank Yu. S. Zamyatnin on whose initiative the work was carried out; V. M. Gorbachev for discussion and interest, and L. P. Bilibin for help. There are 1 figure and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The three references to English-language publications read as follows: Ref.1: L. Grodzins. Proceedings of the Second United Nations Inter. Conference on the Peaceful Uses of Atomic Energy. Vol. 14, Geneva, 1958, p. 351. Ref.2: M. Birk, T. Braid, R. Detenbeck. Rev. Scient. Instrum., 29, 203 (1958). Ref.3: P. Cavanagh, Boyce. Rev. Scient. Instrum., 27, 1028 (1956).

SUBMITTED: April 6, 1961

Card 3/5

ACC NR: AP5025019

AUTHOR: Yermakov, B. A.⁴⁴

SCITE/LIP(c)

SOURCE CODE: UR/0385/65/002/008/0380/0383

Lukin, A. V.⁴⁴

NO/JD/JH

Mat, A. A.⁴⁴

Prilezhayev, D. B.⁴⁴

ORG: none

TITLE: Monopulse generation with $\text{CaF}_2:\text{U}^{3+}$ crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pla'na v redaktsiyu (Prilozheniye), v. 2, no. 8, 1965, 380-383

93
B

TOPIC TAGS: solid state laser, laser pulsations, laser

ABSTRACT: This is a continuation of earlier work (Optika i spektroskopiya v. 18, 353, 1965) in which attainment of monopulse generation in the 2.35 μ infrared region with $\text{CaF}_2:\text{Dy}^{3+}$ was reported. In the present paper the authors report attainment of monopulse generation with $\text{CaF}_2:\text{U}^{3+}$ crystals at wavelengths 2.22 and 2.41 μ , using an experimental setup in which the crystals are cooled to 80-100K by a jet of nitrogen gas evaporated from the liquid phase (Fig. 1). A semitransparent coating with reflection coefficient $R = 0.95 \pm 0.6$ was deposited on one end of the crystal. The cavity switching was by means of a rotating total internal-reflection prism. The pump-lamp ignition was synchronized with a photoelectric system coupled to the prism rotating at $1-2 \times 10^4$ rpm. The crystals used were 3-55 mm in diameter and 20-30 mm long. The radiation receiver was a Ge:As photoresistance, and the generated energy was measured with a bolometer. The monopulse lasing at $\lambda_0 = 2.22 \mu$ was of the three-level type (Fig. 2a), with emission energy 0.1×10^{-3} J, corresponding to a pulse power of

Card 1/3

L 7691-66

ACC NR: AP5028019

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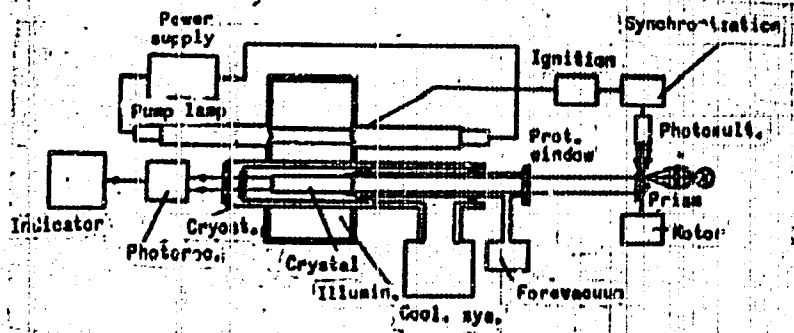


Fig. 1. Experimental setup

4×10^3 W. In several crystals monopulse λ_4 -level generation ($\lambda_4 = 2.51 \mu$) was obtained, apparently, because of the high concentration of the activator in these crystals. The shape of the pulse was the same as in Fig. 2a. The maximum laser energy in the monopulse was 10^{-3} J in this case (pulse power 5×10^4 W). At smaller prism

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ACC NR: AP5028019

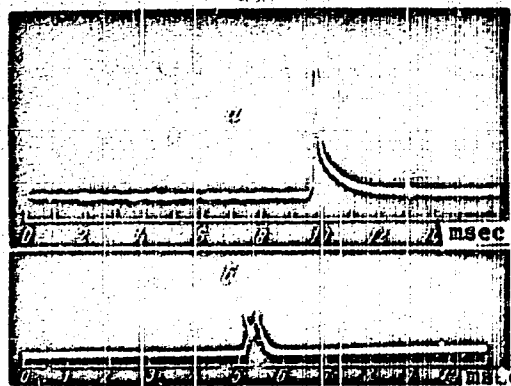


Fig. 1. Monopulse oscillograms

speeds, several laser pulses were obtained rather than one (Fig. 2b). Orig. art. has: 2 figures. [02]

SUB CODE: EC/ SUBM DATE: 31Aug65/ ORIG REF: 002/ ATD PRESS: 4141

Carl 3/3

24(7)

AUTHORS:

SOV/54-59-3-5/21
Vanyukov, M. P., Yermakov, B. A., Mak, A. A., Muratov, V. R.

TITLE:

Recording of the Variation With Time of the Contours of Spectral Lines in the Radiation of a Spark Discharge

PERIODICAL:

Vestnik Leningradskogo universiteta, Seriya fiziki i khimii, 1959, Nr 3, pp 25-32 (USSR)

ABSTRACT:

In the present paper a three-channel photoelectric apparatus for the recording of the variations with time pulses of the discharge spectra is developed for a wide intensity interval. The scheme of the apparatus is represented in figure 1. The spectral decomposition of the periodic discharges was made by means of a monochromator according to Eberth and Fast with a plane diffraction grating for interferences of first order. The grating was constructed by F. M. Gerasimov in the GOI Laboratory. During the recording the grating slowly rotated. It was connected with an electron selfrecording potentiometer of the type EPP-0.9 over a synchronous transmitter. The angular velocity of the grating could be adjusted gradually from 60 to 12, 2.5, 0.5, and 0.1 $\text{\AA}/\text{min}$. The radio apparatus consisted of three uniform channels permitting a simultaneous recording of the spectrum at three different instants, i.e. the amplitude of

Card. 1/3

Recording of the Variation With Time of the Contours of SOV/54-59-3-5/21
Spectral Lines in the Radiation of a Spark Discharge

the pulse obtained at the outlet of the electron trigger is proportional to the value average with respect to time Δt of the signal to be investigated for a given period of delay t_3 . The pulses obtained are thus modulated according to the spectral radiation distribution of the pulse source for time t_3 . These pulses arrive at a collecting scheme, subsequently at a direct-current amplifier, and finally at the selfrecording potentiometer. The three channels record in the time intervals 0.05 - 0.45 μ sec, 0.4 - 20 μ sec, and 0.5 - 50 μ sec. For the determination of the best working conditions the time of adjustment of the collecting element was varied. By means of this device line contours and also the shift of the maxima toward 0.1 \AA may be observed. The limit of the time resolving power with time is $5 \cdot 10^{-8}$ sec. In the figures 2-7 the contours of the spectral lines of nitrogen and helium in spark discharge tubes are represented. Herefrom it may be seen that the lines widen mainly in the first stage of discharge (Fig 7) which indicates a Stark line widening. The maximum concentration of the charged particles is observed at the beginning of discharge.

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Recording of the Variation With Time of the Contours of Spectral Lines in the Radiation of a Spark Discharge. SOY/54-59-3-5/21

It was found from the helium line II 4686 Å that it is $\sim 10^{18}$ cm³. Also the arc discharge spectra of helium could be recorded. The observed asymmetry of the lines could be explained by the direction of the line shift. There are 7 figures and 7 references, 3 of which are Soviet.

SUBMITTED: April 14, 1959

Card 3/3

S/120/62/000/005/019/036
E192/E382

AUTHORS: Yermakov, B.A. and Khazov, L.D.

TITLE: A video-amplifier for exponential pulses with a maximum signal/noise ratio

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962.
117 - 120

TEXT: The gain in the signal/noise ratio (voltage ratio) at the output of an optimum filter, as compared with the ratio of a video-amplifier having a frequency characteristic $K(\omega)$, is expressed by (L.A. Vaynshteyn, V.D. Zubakov - Vydeleniye signalov na fone sluchaynykh pomekh (Separation of signals from random noise), 1960, Izd-vo Sov. radio):

$$\frac{P}{P_1} = \left(\frac{E \sqrt{S^*(t)}}{\pi S^*(t_{\text{max}})} \right)^{1/2} \quad (1)$$

$$= \left(\frac{\int_0^{\infty} S^*(t) dt \int_0^{\infty} |K(\omega)|^2 d\omega}{\pi S^*(t_{\text{max}})} \right)^{1/2}$$

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E192/E382

A video-amplifier

where $S(t)$ is the input signal, $\nu(t)$ is the white noise at the input, E is the energy of the signal, $S(t_{\max})$ is the maximum amplitude of the signal at the output of the video-amplifier and ρ/ρ_1 is the ratio of the signal/noise ratios at the output of the optimum filter and the video-amplifier. Eq. (1) is used to determine ρ/ρ_1 for a three-stage video-amplifier with simple RC stages, the input signal being in the form $S(t) = \delta/\alpha - \delta(e^{-\alpha t} - e^{-\beta t})$. The parameters α and β determine the shape, duration and energy of the pulse. The calculated results for various α/β as a function of τ/δ , where $\tau = RC$, are illustrated in Fig. 1. This shows that at a certain value of τ , ρ/ρ_1 has a minimum; this depends on the shape and duration of the pulse to be amplified. The minimum is also observed in the case of a 10-stage coil-compensated amplifier. The theory was verified experimentally by employing exponential pulses with $\alpha = 0.150$ and $1/\beta = 0.6 \mu s$, which was produced by a special generator.

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A video-amplifier

S/120/62/000/005/019/036
E192/E382

The noise was provided by a wideband amplifier, whose input received the noise from the load resistance of a photomultiplier. The experimental results were in good agreement with the theory. It was found, therefore, that in the case of an exponential pulse the maximum signal/noise ratio can be closely approached not necessarily by employing an optimum filter but by choosing a suitable rise time of the amplifier. There are 5 figures and 1 table.

ASSOCIATION: Gosudarstvennyy opticheskiy institut
(State Optics Institute)

SUBMITTED: December 2, 1961

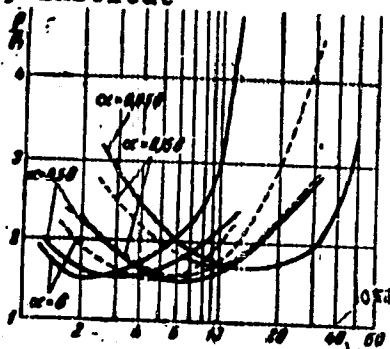


Fig. 1:

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L 2727-66 EWT(m)/EWP(j) RM/WH

ACC NR: AP6015435

SOURCE CODE: UR/0051/66/020/005/0903/0905

AUTHOR: Dovger, L. S.; Yermolov, I. A.; Lukin, A. Y.; Shklovskiy, L. J.

47
45
B

ORG: none

TITLE: Effect of stimulated emission on the transmission coefficient of some organic dye solution

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 903-905

TOPIC TAGS: ruby laser, stimulated emission, optic transmission, dye chemical, organic cyanate compound

ABSTRACT: Experiments are conducted to determine how much emission power density is required in the resonator of a ruby laser for transillumination of various organic solutions. A block diagram and brief description of the experimental equipment are given. Curves are also given showing the transmission coefficient as a function of incident radiation power for solutions of vanadyl phthalocyanine in dimethyl formamide, kryptocyanine in methanol, vanadyl phthalocyanine in nitrobenzene and zirconium phthalocyanine in α -bromonaphthalene. These curves show that transmission of the specimens approaches 100% at a power density of the order of several Mw/cm² which corresponds to energy densities of 10¹⁷ quanta/cm² in a period of 10⁻⁶ sec. This indicates that transillumination of specimens in this class is basically due to transi-

UDC: 621.375.9 : 535.004.14

C. d 1/2

L 21727-66

ACC NR: AP6015435

2

tions from ground energy levels to singlet states with lifetimes of the order of $(2-8) \cdot 10^{-9}$ sec. A reduction in solution concentration (increase in initial transmission) shifts the curve toward lower power densities without changing its shape. In conclusion the authors thank A. N. Terenin and O. D. Dmitriyevskiy for interest in the work. Orig. art. has: 3 figures. [14]

SUB CODE: 20/ SUBM DATE: 25Jun65/ ORIG REF: 001/ OTH REF: 003/
AID PRESS: 5007

Card 2/2 - BLQ

L 27779-66 EEC(k)-2/ENA(h)/EMP(s)/ENP(k)/ENT(1)/ENT(2)/FBD/T/ENP(q) IJP(c)
ACC NR: AP5015592 RM/WH/WG SOURCE CODE: UR/0368/66/004/005/0410/0414

53
49
B

AUTHOR: Yermakov, B. A.; Lutin, A. V.

ORG: none

TITLE: Mechanism responsible for clearing of organic phototropic shutters used in ruby lasers - 25

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 5, 1966, 410-414

TOPIC TAGS: ruby laser, phthalocyanine, phototropism, light absorption

ABSTRACT: The authors consider reversible bleaching absorption under the effect of powerful light pulses through a solution of vanadyl phthalocyanine in nitrobenzene on two wavelengths lying within the absorption band for this solution. A block diagram of the experimental setup is shown in the figure. In the resonator of the ruby laser there is a bleachable absorber (a solution of kryptocyanine in methanol) and a cell filled with benzene. Emission took place on wavelengths 649.3 mμ and 745 mμ (due to stimulated Raman scattering in benzene). The energy of the pulse with λ=745 mμ was about 15% of the energy on the ruby laser output. Monochromatic pulses were directed toward cell S with the solution to be studied through an attenuating filter selected in such a way that the intensity of emission on 745 mμ is insufficient to pass through the solution. The

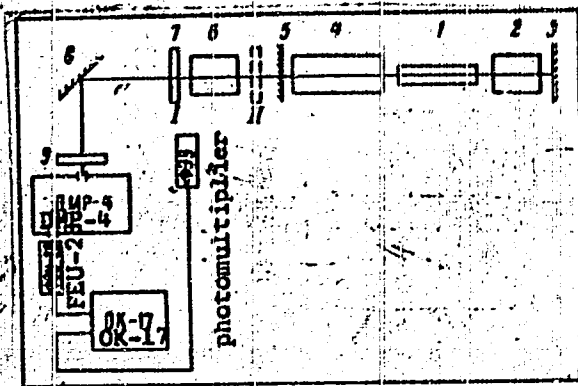
2

UDC: 621.375.9

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ACC NR: AP6015592



1--ruby crystal; 2--phototropic shutter;
 3--opaque mirror; 4--cell with benzene;
 5--output mirrors; 6--cell with solution
 to be studied; 7, 9--set of light filters;
 8--rotating mirror

radiation passing through cell 6 and set of neutral filters 7 was directed to the input slit of monochromator DMR-4 tuned to a wavelength of 745 mμ. An FEU-28 photomultiplier was placed behind the output slit of the monochromator and the signal from the photo tube was recorded by an OK-17M oscil-

lograph. When the set of neutral filters was placed in front of the cell (position II) and the emission intensity on $\lambda=694.3$ mμ was not sufficient to pass through the solution, a pulse was recorded on $\lambda=745$ mμ with an amplitude of 1/2-1/3 that of the pulse produced when the solution was exposed to radiation with $\lambda=694.3$ mμ with the set of filters 7 in position I. The results showed clearing of phthalocyanine solutions throughout the entire absorption band during exposure to intense monochromatic radiation. A theoretical explanation is given for the clearing effect based on changes in population in a three-level model for the solution. This three-level model for

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ACC NR: AP6015592

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phototropic substances may be used to determine the effect which spectroscopic characteristics of materials have on their efficiency as laser shutters which is important for synthesis or selection of materials for this purpose. In conclusion the authors thank I. F. Balashov, A. A. Mak and D. S. Prilezhayev for discussing the work and L. S. Dviger for assistance with the calculations. Orig. art. has: "Figuras. [14]

SUB CODE: 20/

SUBM DATE: 03Jan66/

ORIG REF: 003/

JRN REF: 005/

ATD PRESS: 5103

Cards 3/3

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L 1964 65 EMB(3)/EWA(k)/FBI/INT(1)/ENT(n)/HPR(c)/RQC(k)-2/HFC(t)/MP(t)/
 EIC(6)/EWP(k)/EWP(b)/EWA(m)-2/EWA(h) En-1/Pg-1/Pt-1/Pi-1/Pe-1/Pi-1/ASC(a)/
 SMD/BSL/AFWL/ASD(a)-5/ASD(e)/AFMTR/ALM(a)/AFIC(R)/ASD(rs) 870055781 047 106/2013/2016
 ACCESSION NR: AP500181C

AUTHOR: Belousova, I. M.; Danylov, O. B.; Kuznetsov, B. A.

TITLE: Angular oscillation modes in a neon laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2013-2018

TOPIC TAGS: laser, gas laser, neon helium laser, laser beam spectroscopy, laser mode analysis

ABSTRACT: The authors have set out to generate angular modes with higher indices of radial symmetry in a neon-helium laser with internal plane mirrors and to compare their results with those predicted theoretically by I. A. Vaynshteyn (ZhETF, 44, 1050, 1963). The laser frequencies were observed by means of the photoheterodyne method described in an earlier paper (A. I. Potemkin, I. A. Gudrud, Gen. R. O. Johnson, Phys. Rev., 99, 1697, 1955) which showed the fact that the laser emission receiver is a photoheterodyne operated as a square-law detector. The resonator was 1 m long and the effective diameter of the mirrors was 16 cm. The mirrors were aligned

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L 19678-65

ACCESSION NR: AF5001810

within 0.2 angular seconds, polished within $\lambda = 1/400$, and dielectric-coated with a coefficient of reflection of $98.5 \pm 0.5\%$ for wavelengths of approximately 1.15μ . By suitable choice of laser pumping and gas composition, only one emission line ($\lambda = 1.1523 \mu$) was produced. The spectral analysis of the laser beam was performed by means of infrared filter, the FEU-28 photoelectron multiplier, a 10 Mc video amplifier, and a panoramic spectroanalyzer. The above equipment was capable of recording difference frequencies from 20 Kcs to 10 Mc with an accuracy of ± 5 Kcs. The following experimental facts were observed: the beat intensity decreases with an increase of beat frequency; variation in the angle of the resonator plates causes a change in the distribution of beat frequencies; 300- and 500-Kcs frequencies were regular, and 2- and 4-Mcs beat frequencies appeared only after mirror reflections. The conditions for the generation of axial modes indicate that the difference frequency between two fundamental modes $\Delta \nu = c/2L$, where c is the velocity of light, and $2L$ is the length of the resonator lies within the 150 Mcs region. Thus, the difference frequencies observed by the authors are not really beats between axial modes. The presence of beats in the 2-4 Mcs region can be attributed to the following factors: additional diffraction in the damaged mirror di-

Cont 2/3

L 12678-45
ACCESSION NR: AP5001818

electric zone; formation of new angular modes with smaller diffraction losses; and additional difference frequencies between the H_{11q} and H_{11q} modes. Although the value of the beat frequency obtained experimentally by the authors differs from theoretical estimates by 30-50%, it can be considered satisfactory. The dependence of all the recorded beat frequencies on the angular position of the mirrors agrees qualitatively with theoretical computations. This result also confirms the possibility of identifying recorded beat frequencies due to the difference frequencies between the axial and angular modes with lowest indices. "The authors thank V. V. Lyubimov for evaluation of experimental results and M. P. Vanyukov for his attention given to their work." Orig. art. has: 3 formulas, 4 figures, and 1 table.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optical Institute)

SUBMITTED: 17 Jun 63

ENCL: 00

AVB CODE: 3C

NO REF NOY: 001

OTHER: 009

AVB PRHS: 3160

Card 3/3

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FBI(S)/FIA(k)/FBI(1)/FBI(2)/FBI(3)/FBI(4)/FBI(5)/FBI(6)/FBI(7)/FBI(8)/FBI(9)/FBI(10)/FBI(11)/FBI(12)/FBI(13)/FBI(14)/FBI(15)/FBI(16)/FBI(17)/FBI(18)/FBI(19)/FBI(20)
Fu-4/Pc-4/PC-4/Pch/Pi-4/PI-4 IJP(c) WD

8/0051/05/018/002/0353/0354

ACCESSION NR: AP5005060

AUTHOR: Yermakov, B. A.; Lukin, A. V.; Mat, A. A.

56
92

TITLE: Reducing metastable level lifetime in a modulated-Q laser

25 B

SOURCE: Optika i spektroskopiya, v. 18, no. 2, 1965, 353-354

TOPIC TAGS: laser, metastable level lifetime, metastable level population, Q modulator, Q spoiler

ABSTRACT: Stored excitation energy is limited by the decrease in effective metastable level lifetime when Q modulation tends to enhance spontaneous emission. The problem was examined in a four-level system in which the population N_2 of the metastable level was considerably smaller than the population of the ground state. The dependence of the effective excited state lifetime (τ_{eff}) on the number of stimulated transitions and on the population N_2 of the metastable level was determined. In the first approximation τ_{eff} can be regarded as equal to the time constant of the emission decay after the end of the pumping pulse; it was found to be 2.8 nsec, considerably smaller than the lifetime $\tau = 20$ nsec determined from photofluorescence decay. The results obtained show that the lifetime of the metastable level can decrease considerably when the operation is conducted at a single pulse regime. Orig. art. has: 1 figure and 2 formulas.

[JA]

Card 1/2

1-26613-65

ACCESSION NR: AP5005060

ASSOCIATION: none

SUBMITTED: 19Jun64

ENCE: 00

SUB CODE: EC-1/P

NO REF SOV: 000

OTHER: 001

ATD PRSG: 3188

Card 2/2

YERMAKOV, B. F.

387. DEHYDRATION OF GASOLINE IN STORAGE TANKS. Yerimakov, B.F.
(Makob. zheroi. Prom. (Q) ~~High Field~~ ~~Time~~ ~~Process~~), Sept. 1952; abstr.
in Chem. Abstr., 1954, vol. 48, 988). A diagram is given of a group of
three continuously operating settling tanks connected by siphon tubes. C.S.

10-14-54
JH

~~YERMAKOV, B.L.~~ inshenor; RADOMSKIY, V.P., tehnik.

Adjustment of chain grates for anthracite. Energetik 4 no.6:14-15
Je '56. (MIRA 9:8)

(Boilers)

YEMAKOV, B.N., inzhener; RADOMSKIY, V.P.

Using anthracite dust. Masl.-shir.prom.22 no.6:30 '56. (MIRA 9:10)

1. Vinitkiy Maslobayno-shirovyy kombinat.
(Coal, Pulverized) (Boilers)

YERMAKOV, B.F., Iashener.

~~Clearing~~ filter press cloths. Masl.-shir.prom.23 no.1:38 '57.
(MLRA 10:1)

1. Vinnitskiy Masloboyno-shirevoy kombinat.
(Filter presses)

YERNAKOV, B.P., inzhener.

~~Mechanical feeding of coal into boiler furnaces at the Zaporozh'ye
Oils and Fats Combine. Masl.-shir.prom. 17 no.12:21-22 T '52.
(MLFA 10:9)~~

1. Zaporozhskiy masloshirkombinat.
(Boilers)

YERMAKOV, B.F., insh.; NABOTA, A.P., insh.; VERNER, E.O., insh.

From the work experience of Vinnitsa Oil and Fat Combine. Masl.-
shir.prom. 28 no.12:27-28 D '62. (MIRA 16:1)

1. Vinnitskiy masloshirovoy kombinat.
(Hydrogenation oils and fats) (Vinnitsa)

L 29711-66 EWI(1)/EWI(m)/EWF(e)/EWP(t)/ETI WH/WW/JD

ACC NR. AP6015587

(A)

SOURCE CODE: UR/0146/66/009/002/0123/0125

AUTHOR: Ispiryan, N. A.; Yerwakov, R. F.; Yaryshev, N. A. 77
BORG: Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut
tochnoy mekhaniki i optiki)TITLE: An argon-arc heat source for high temperature research 6 2SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 123-125

TOPIC TAGS: high temperature research, electric arc, argon, heat source

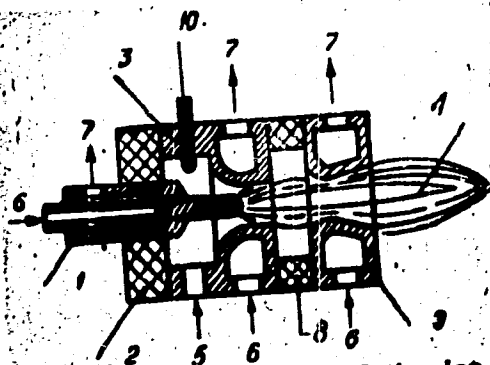
ABSTRACT: Data are given from experimental tests of an argon-arc source with a power of up to 20 kw designed for thermophysical research (see figures). An electric arc is struck between electrode 1 (the cathode) and nozzle 3 (the anode) which heats the argon injected into the nozzle cavity through aperture 5. This results in jet 4 which is the source of heat. Power is increased by using an additional copper or graphite nozzle 9 to which a positive potential is applied after ignition. The arc is struck by introducing graphite or tungsten rod 10 into the cavity of the first nozzle 3 until it makes contact with electrode 1. A graph is given showing the specific thermal flux of the output jet as a function of the electric power of the source. The heat flux 15 mm from the cutoff of the output nozzle is $6.4 \cdot 10^6$ w/m² for an argon flow rate of

UDC: 621.365.2

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L 29711-66

ACC NR: AP6015587



1--electrode (cathode); 2--insulation sleeve; 3--first nozzle (anode); 4--jet; 5--argon input; 6--water input; 7--water outlet; 8--insulating liner; 9--second nozzle, 10--graphite or tungsten rod.

1.77 m³/hr. The temperature of the jet is at least 7000°K. It should be possible to increase the power of the source still further by using additional anodes. Orig. art. has: 2 figures.

SUB CODE: 20/

SUBM DATE: 03Dec64/

ORIG REF: 003

Card 2/2 *CV*

POGODIN, A.S., inzhener; BU'ATOV, N.I.; YERMAKOV, B.M., inzhener;
BURIKOV, V.I., inzhener.

Reproduction of blueprints without copying (tracing) Vest.
mash. 35 no.6:75-80 Ja '55. (MIRA 8:8)
(Blueprinting)

YERMAKOV, B.S.; YERMAKOVA, V.Ye.

Setting of adventitious roots in the green cuttings of grape.
Biol. Glav. bot. sada no.55:99-106 '64. (MIRA 18:11)

1. Moskovskaya sel'skokhoyaystvennaya akademiya imeni K.A.
Timiryazeva.

YERMAKOV, D.
POTASHNIKOV, F.; YERMAKOV, D.

[Factory and local committee control over housing construction]
Kontrol' FZMK nad zhilishchnym stroitel'stvom. Iss. 2-e, ispr. 1
dop. Moskva, Profizdat, 1953. 87 p. (MLBA 7:11D)

~~YERMAKOV, D. BORASHNINOV, F.~~

Utilise all means to speed up housing construction.
5 no.6:11-14 Je '57.

Sov.profsoiuzy
(MIRA 10:7)

(Housing)

YERMAKOV, D. starshiy inspektor

Give every possible help to individual construction projects.
Sov.profsoiuzy 7 no.10:22-24 My '59. (MIRA 12:9)

1. Zhilishchnobytovoy otdel Vsesoyuznogo tsentral'nogo soveta
profsoyuzov. (Labor and laboring classes--Dwellings)

YERMAKOV, D. A.

231147

USNR/Engineering - Heat, Steam Turbines Jan 52

"Reconstruction of the Flow Section of a Steam Turbine," D. A. Yermakov, V. P. Kurpinov, A. F. Dolgov, Engineers, GRES Mosenergo, I. D. Lyubovitch, Cand Tech Sci, G. N. Kurushchev, Engg, Lab of Steam Turbines, VTI

"Trava Replotekh Inst" No 6, pp 24-27

Describes changes in design of turbine to increase its efficiency and reduce consumption of theoretical fuel to 490 g/kwh. Two-cylinder condensing Siemens-Shuckert 50,000-kw turbine was built in

231147

1930-31. Regulation stage with 140 nozzles and 19 reaction stages were redesigned. Tests showed decrease in heat rate by 4.3%. Turbine capacity was increased to 52,000 kw at same max steam rate.

231147

YERMAKOV, D. A., Eng.; KOVALEV, YU. N., Eng.

Kashira Hydroelectric Power Station

Kashira electric power station is 30 years old. Eng. # D. A. Yermakov, Yu. N. Kovalev.
Elek. sta. no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

GORSHKOV, A. S.; YERMAKOV, D. A.

Electric Power Plants

Thirteenth anniversary of the scientific and practical activity of the Kashira Electric Power Station in collaboration with the All-Union Thermo-Technical Institute. Izv, VTI, 21, No. 6, 1952.

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

YERMAKOV, D. A.

VASIL'YEV, N.S.; KASIMOV, V.I.; KALININ, G.A.; KUVAKIN, V.P.; MEDVEDEV, A.P.;
FAYVIL'YICH, Ya.A.; KERIPUNOV, V.P.; YERMAKOV, D.A., redaktor;
KINOV, A.P., redaktor; OSTROVSKIY, Ya.M., redaktor; KAL'SKAYA, D.D.,
redaktor; FRIDKIN, A.M., tekhnicheskiy redaktor

[Experience in operating the Kashira Hydroelectric Power Station]
Opyt ekspluatatsii Kashirskoi GRES. Moskva, Gos. energ. izd-vo,
1956. 179 p. (MIRA 9:9)
(Kashira Hydroelectric Power Station)

GEORGIYEV, Ivan Georgiyevich; ZHARKOVSKIY, Daniil Vladimirovich;
TREYVAS, A.B., doktor sel'khoz. nauk, prof., retsenzent;
SUSLOV, V.P., kand. tekhn. nauk, retsenzent; YEMAYOV,
D.F., red.; ZEL'KO, M.M., tekhn. red.

[Fuel, lubricants, and water] Toplivo, smazochnye mate-
rialy i voda; uchebnoe posobie. Minsk, Gos.izd-vo sel'-
khoz. lit-ry BSSR, 1963. 234 p. (MIRA 16:12)
(Fuel) (Lubrication and lubricants) (Water)

L 34300-56 FBT/FBT(1)/EWT(m)/EBC(k)-2/T/EWF(t)/EII/EWP(k) IJP(c) WG/JD

ACC NR: AP6018453

SOURCE CODE: UR/0051/66/020/005/1083/1085

AUTHOR: Gonchukov, S. A.; Yermakov, G. A.; Mikhnenko, G. A.; Protserko, Ye. D. 50

ORG: none

TITLE: On the problem of temperature effects in an Ne-He laser 25

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 1083-1085

TOPIC TAGS: gas laser, laser emission, discharge tube, *HELIUM, NEON, GAS DISCHARGE, TEMPERATURE DEPENDENCE, LASER PUMPING*

ABSTRACT: The variation in the power of an Ne-He laser under constant pumping during the first few minutes of the discharge excitation is investigated. This variation is obviously due to the heating up of the tube and the variation in the concentration of the neutral atoms in the gas mixture. When the tube is fired, the gas pressure rises somewhat. The heating up of the tube decreases the number of particles in the working section and varies the temperature and concentration of electrons in the discharge. These changes, together with the varying particle velocity distribution, affect the magnitude of the population inversion and thereby the output power of the laser. The output power is plotted as a function of pressure and as a function of the concentration of unexcited atoms with various wall temperatures. The experimental method, conditions, and equipment are described. Results show that there is an optimum concentration at which a peak power is obtained regardless of the temperature and that the pow-

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UDC: 621.375.9:535.096

L 34800-66

ACC NR: AP6018453

er output is temperature-dependent. Reasons for the variation in power output are given. The authors thank A. N. Orayevskiy for discussing the results. Orig. art. has: [14]
2 figures.

SUB CODE: 20/

SUBM DATE: 08Dec65/

ORIG REF: 001/

OTH REF: 001

'ATD PRESS: 5031

Card 2/2 90

YERMAKOV, D. I. and NOVAKOVSKIY, S. V.

"Television Standard USSR GOST 7845-55," S. V. Novakovskiy
and D. I. Yermakov, Elektrosvyaz, No 1, Jan 57, pp 24-35

The new television broadcasting standard GOST 7845-55, which was prepared by the Scientific Research Institute, Ministry of Communications, and approved on 31 December 1955 by the Committee on Standards, Measures, and Measuring Instruments, prescribes the following parameters in TV broadcasting practice: number of lines per frame (625), width of radio channel (a total of 8 Mc, of which 6 Mc video channel, 0.25 Mc audio channel), methods of scanning, polarity of transmission, modulation methods (AM for video transmission and FM for audio), radiation polarity (horizontal for electric field), the black level, the separation of audio and video carrier frequencies, and others.

The picture ratio was fixed at 4 to 3, with a reservation for a future change of 11 to 8, so as to conform with motion-picture standards.

"The resolving capacity of a TV system determines the geometric definition of the image, i.e., the number of small elements n in each frame discernible to the eye, which in turn depend on the number of scan lines Z , number of fields per second n' , and the width of the pass-band Δf . The relation between these values for interlaced scanning is determined as follows: $n \approx K Z (1 - \beta) ; f = \frac{Z n'}{K (1 - \beta) (1 - \beta)}$

where M and N are the number of discernible horizontal and vertical black and white lines, respectively.

α and β are relative duration of line and frame scan fly-back, respectively.

K_v is a factor which takes into account the loss of resolution vertically, caused by the line structure of the raster.

Generally, K_v , $(1-\alpha) \approx 0.7$, $\alpha \approx 0.16$ to 0.18 , $\beta \approx 0.074$ to 0.08 , and $n' \approx 50$ according to the new standard.

For a special case, when the vertical resolution becomes equal to the horizontal, the expression for Δf becomes

$$\Delta f_{max} = \frac{2^2 n' (1-\alpha)}{4(1-\alpha)}$$

For the present standards of $\Delta f = 6\text{Kc}$, $z = 625$ lines, and $n = 50$, the values of N , M , and μ become 630, 436, and 275,000, respectively. According to the new standards, the power intake of the audio channel is from 25 to 50% of the video channel. The video signal is amplitude modulated, with negative polarity and suppressed lower side band. The audio channel has a band width of 0.25 Mc and is frequency-modulated, with maximum permissible frequency deviation of ± 50 Kc.

Sum 1274

MALEYEV, Ye.N.; YERMAKOV, D.S.

Single-beam two-frequency pyrometer for measuring flame
temperatures. Opt. i spektr. 13 no.4:598-601 0 1962.

(Pyrometers)

(MIRA 16:3)

POTASHNIKOV, Fedor Petrovich; ~~YERMAKOV, Dmitriy Vasil'yevich~~; MYAGKOV,
M.M., red.; BEADRINA, N.D., ~~tekh.red.~~

[Housing construction done by workers and employees themselves]

Stroitel'stvo domov silami rabochikh i sluzhashchikh. Ind-vo
VTsSPS Profisdat, 1958. 60 p. (MIRA 12:5)

1. Rabotniki zhilishchno-bytovogo otdela Vsesoyuznogo tsentral'nogo
soveta profsoyuzov (for Potashnikov, Yermakov).
(Construction industry)

POTASHNIKOV, Fedor Petrovich; YERMAKOV, Dmitriy Vasil'yevich; KIRILLOV,
O.F., red.; GOMICHENKOVA, A.A., tekhn.rsd.

[Trade unions control of the construction of apartment houses and
buildings serving cultural and public needs] Kontrol' profsoiuzov
za shilishchaym i kul'turno-bytovym stroitel'stvom. Moskva, Ind-vo
VTsSPS, Profindat, 1959. 100 p. (MIRA 13:3)
(Trade unions) (Construction Industry)

VOLOD'KO, Ivan Fomich, kandidat tekhnicheskikh nauk; YEMAKOV, F.L.,
redaktor; FEDOTOVA, A.F., tekhnicheskij redaktor

[Using underground water for irrigation and water supply] Ispol'-
zovanie podzemnykh vod dlia orosheniia i vodosnabzheniia. Issl. 2-oe,
dop. Moskva, Gos.issl-vo selkhoz.lit-ry, 1955. 327 p. (MLRA 9:2)
(Water, Underground)

Yermakov, F.M.

YERMAKOV, F.M.

Oxygen therapy in treating ascariasis in sanatoria. Med.paraz. i
paras.bol.supplement to no.1:66 '57. (MIRA 11:1)

1. Is sanatoriya "Fontan" Ukrpromstrakhsoveta.
(OXYGEN-THERAPEUTIC USE)
(ASCARIDS AND ASCARIASIS)

KUDINOV, V.A.; KEDROV, S.S.; YERMAKOV, G.A.

Vibration of double-sided vertical boring and turning lathes.
Stan.1 instr. 32 no.6:17-18 Jo '61. (MIRA 14:6)
(Lathes—Vibration)

BELYAVSKIY, V.Ye.; YERMAKOV, G.A.

Dispersion and mixing equipment used in the paint industry of foreign countries. Lakokras.mat. 1 ikh prim. no.2:75-83 '64.

(MIRA 17:4)

YERMAKOV, G.I., elektronmekhanik

Joint operation of M-49 and ATS switchboards. Avtom., telex.
1 svias 2 no.4:35-36 Ap '58. (MIRA 12:12)

1. Avtomaticheskaya telefonnaya svyaz', stantsiya Gryazi
Yugo-Vostochny dorogi.
(Telephone) (Electronic circuits)

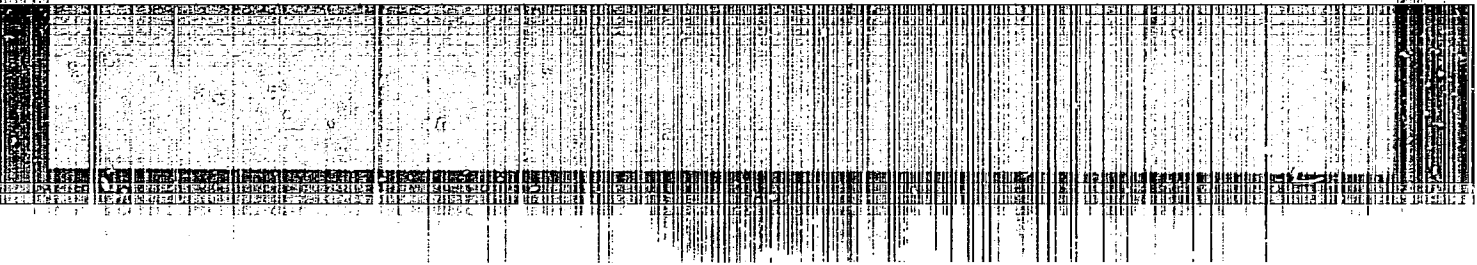
GOLUBEV, Genrikh Aleksandrovich; D'YAKONOV, Vasilii Fomich; KRASAVTSEV, Boris Ivanovich; MURMANSKIY, Feliks Nikolayevich; NASTAY, Napoleon Napoleonovich; YERMAKOV, I.G., kand. fiz.-matem.nauk, retsenzent; ZHEREBTSOV, M.N., prepodavatel', retsenzent; RYBALTOVSKIY, N.Yu., prof., red.; FRISHMAN, Z.S., red.izd-va; STUL'CHIKOVA, N.P., tekhn. red.

[Problems in nautical astronomy] Zadachnik po morekhodnoi astronomii. Leningrad, Izd-vo "Morskoi transport," 1963. 287 p.
(MIRA I7:3)

1. Arkhangel'skoye morekhodnoye uchilishche (for Zherebtsov).

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001962810001-3



APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001962810001-3"

YERMAKOV, G.V.

25-11-10/28

AUTHOR: Yermakov, G.V., Chief Engineer "Glavatomenergo" of the
~~Ministry for Power Plants SSSR~~

TITLE: The Mighty Power of Atoms (Moguchaya sila atoma)

PERIODICAL: Nauka i Zhizn', # 11, 1957, pp 17-22 (USSR)

ABSTRACT: The first atomic power plant in the world started operating on 27 June 1954 in the Soviet Union, it has a capacity of 5,000 kw. For this achievement the Lenin prize was awarded to the Member-Correspondents of the USSR Academy of Sciences D.I. Blokhintsev, N.A. Dollezhal', A.K. Krasin, Doctor of physico-mathematical sciences and on V.A. Mallykh, Doctor of technical sciences. In the course of the sixth Five-Year Plan the construction of huge atomic power plants with capacities of about 400,000 kw is planned. For experimental purposes the power plants to be built will be operating with atomic reactors of several types of up to 200,000 kw capacity, utilizing fast and slow neutrons and neutrons of intermediate energy. They will have moderators of graphite, heavy and ordinary water. Water, gas or metal cooling systems may be used. Furthermore the construction of a reactor utilizing thorium is planned. A big atomic power plant under construction whose first unit is to

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The Mighty Power of Atoms

25-11-10/28

produce 420,000 kw, will in 1960 form part of the united power system of the European part of the USSR. This power plant will be operated by water-water reactors. The theoretical and experimental research conducted under the supervision of academicians I.V. Kurchatov and A.P. Aleksandrov proved the efficiency of water-water reactors which are of simple construction and economical in the use of nuclear fuel. The plants will consist of two blocks, each comprising a water-water reactor with a heat capacity of 760,000 kw and three steam turbines of 70,000 kw each. The active zone of the reactors represents a metallic basket-like container with a diameter of 3 m and a height of 2.5 m in which the heat-emitting elements are fixed according to a special system. These elements are assembled in bundles each of which is installed in a zirconium tube. The weight of nuclear fuel in each reactor will equal about 40 tons, of which 23 tons will go to the share of enriched uranium containing twice as much isotope 235 than natural uranium. The remaining 17 tons of fuel will be dioxide of natural uranium.

By applying zirconium tubes, a coefficient of 0.8 can be reached at the beginning of the operation period - and at the end about 0.7. Thus per kg of "burnt" fuel (fissionable nuclei

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The Mighty Power of Atoms

25-11-10/28

of uranium 235) 750 g of a new fuel - plutonium 239 - will originate from "non-fissionable" uranium 238. During the operation of the plant six pumps cause the circulation of distilled water under a pressure of 100 atm in the first circuit. About 30,000 cu m of water heated to 250°C pass through the reactor every hour, reaching a temperature of 275°C in the active zone and are then directed into six steam generators. Per hour the six steam generators will produce 1,380 tons of dry saturated steam at a pressure of 32 atm. There are 8 photographs.

AVAILABLE: Library of Congress

Card 3/3

1. GLAVNYI INZHENER "G. Lavrentyev"
MINISTERSTVA ELEKTROSTANTSII SSSR.

JERMAKOV, G.V.: [Yermakov, G.V.]; MEDONOS, S. [translator]

Types of atomic power plants built in the Soviet Union within the
6th Five-Year Plan. *Jaderna energije* 3 no.6:190-192 Je '57.

AUTHOR: Yermakov, G.V., Engineer.

104-2-1/38

TITLE: Problems in the design of atomic power stations. (Voprosy proektirovaniya atomnykh elektrostantsiy)

PERIODICAL: "Elektricheskie Stantsii" (Power Stations), 1957, Vol.28, No.2, pp. 1 - 9 (U.S.S.R.)

ABSTRACT: One of the main problems of modern technology is the utilisation of atomic energy. Conventional fuels are rapidly being used up and atomic energy will soon be required to take their place. It has been decided to build a number of atomic power stations during the Sixth Five Year Plan. Capitalist countries are also developing atomic energy, the 46 MW Calder Hall station being opened in 1956 and another 12 stations are due for construction in England, whilst in the USA it is proposed to build 5 atomic power stations with a total power of about 700 MW in 1957 - 60.

This article considers a number of questions that arise in the design and construction of atomic power stations considered as power undertakings, it does not deal with the design and manufacture of equipment for them. The article is arranged as follows:

Choice of construction site: Atomic power stations need not be located near a source of fuel and they will, in the first

Card 1/6

104-2-1/38
Problems in the design of atomic power stations. (Cont.)
place be built in regions without a local fuel supply. It will, therefore, be possible to distribute industry more uniformly over the country than at present. If biological safety can be ensured atomic power stations will be very convenient for the supply of heat to towns as they are of higher efficiency than condensing atomic stations and do not contaminate the atmosphere with combustion products. However, in the early stages, special precautions will be necessary because of the possibility of discharge of radio-active gases to the atmosphere, including the creation of health protective zones between the power stations and living quarters.
Determination of output and selection of main equipment. Just as with thermal stations large atomic power stations are more economic than small ones. The smallest convenient size of reactor is 200 MW with turbo-generators of 100 MW and more. Special steam turbines will have to be designed because reactors produce steam at lower pressures and temperatures than do existing boilers. Fuel fired superheaters are required if very efficient turbines are to be used. However, special superheater reactors or combined evaporating and superheating reactors hold promise and one will be included in a power station being built in the USSR.

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104-37/38

Problems in the design of atomic power stations. (Cont.)

Reactor installations. The reactors discussed are those intended only for power supply and not for the production of plutonium. Four stations are being built each with 200 MW reactors. Two of them will have heterogeneous reactors using distilled water under pressure as moderator. The stations will contain turbines of 70 MW using saturated steam at 29 atm., the pressure in the primary water circuit being 100 atm. Each reactor is associated with three turbo-generator block units and primary circulating systems. The water in the primary circuit is blown down to avoid excessive radio-activity build-up. Evaporated steam is returned to the system and radio-active wastes are held in long term storage.

The second type of power station uses graphite as moderator, the heat is removed by distilled water and steam. This type of reactor is very similar to that in the first power station of the Academy of Science. Because of the high temperature of the primary steam the secondary steam supplied to the turbine is at a pressure of 90 atm. and is superheated to a temperature of 500 C. Normal turbo-generators are used, and the overall efficiency is about 36%.

Card 3/6 The third type of station also uses a heterogeneous reactor with heavy water as moderator. Heat is removed by carbon

Problems in the design of atomic power stations. (Cont.)
dioxide. Natural uranium is used, so the fuel cost is low. The secondary steam is at 29 atm. and 420 C. The overall efficiency is, however, not more than 20%.

In addition to these stations there will be a number of experimental stations each of 70 MW including:

A heterogeneous boiling type reactor using distilled water as moderator with steam supply direct to the turbine. A homogeneous reactor using heavy water as moderator. The atomic fuel is distributed uniformly in the heavy water in the form of a suspension. The turbines use secondary steam.

A heterogeneous reactor with graphite as moderator heat being removed by liquid sodium. The turbines operate on high steam conditions.

A heterogeneous breeder reactor employing rapid neutrons with heat removed by liquid sodium. The turbines work on steam of medium conditions.

These stations and others are being built to help in the selection of the best types of future power stations.

Requirements of the elements of reactor installations. The choice of steam conditions is discussed, stations with the highest thermal efficiency do not necessarily give the cheapest power. Stations of the first type described will produce

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104-2-1/38

Problems in the design of atomic power stations. (Cont.)

power more cheaply than those of the second type although the respective overall efficiencies are 27% and 36%. The selection of primary heat transfer medium is discussed, none of those yet used is wholly satisfactory. The selection of materials from which the pile is constructed is discussed, the production of envelopes for the active material is most important.

Questions of choice of type of reactor. The merits of reactors working on natural uranium and breeder reactors with enriched fuel are discussed. Enriched fuel is very expensive and will probably not be much used at first. Much can be done by appropriate design of reactors and the use of homogeneous reactors appears promising; there are notable advantages in using the fuel in liquid form, but there is still some risk in having large quantities of radio-active materials at high temperature and pressure.

Reliability and safety of operation of reactors. To avoid reactors running away they should have a negative reactivity factor; those with liquid moderators are usually of this kind. Calculation of self-regulation is difficult and it is best determined by trial. Shielding should be adequate. Various kinds of accidents may occur such as leakage of heat transfer medium, failure of power supply or control systems or damage to

Card 5/6

Problems in the design of atomic power stations. ^{104-2-1/38} (Cont.)
active elements. Another class of accidents includes discharge of excessive quantities of radio-active gas or substance and explosion of reactors. Methods of preventing these accidents are described.

Radio-active products of reactors: this gives a general discussion of radio-activity and disposal of radio-active wastes.

Special features of operation. The design of atomic plant is affected by the fact that certain parts of it are inaccessible for long periods.

Primary circuit equipment. When primary or secondary steam is used in the turbines the heat exchangers and similar equipment give rise to no special problems but systems using liquid metals have special features. Special pipes must be used in the heat exchangers and so on. Various special pumps are used both for primary water and for liquid metals.

Economic questions. This brief discussion of the economics of atomic energy is based on American data.

Card 6/6 There are 6 figures.

AVAILABLE:

PHASE I BOOK EXPLOITATION 887

Yermakov, Georgiy Viktorovich

Moshchnyye atomnyye elektrostantsii (High-Powered Nuclear Power Plants)
Moscow, Izd-vo "Znaniye", 1958. 31 p. (Series: Vsesoyuznoye
obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy.
Seriya IV, 1958, no. 18) 47,000 copies printed.

Sponsoring Agency: Vsesoyuznoye obshchestvo po rasprostraneniyu
politicheskikh i nauchnykh znaniy.

Ed.: Faynboym, I.B.; Tech. Ed.: Trofimov, A.V.

PURPOSE: This book is intended for the general reader.

COVERAGE: The author discusses the construction of large industrial
plants in the USSR. A detailed description is given of graphite-
water and water-moderated water-cooled reactors used in the USSR.
The author gives information about atomic reactor construction in
the U.S.A., Great Britain and France. No personalities are men-
tioned. There are no references.

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High-Powered Nuclear Power Plants 887

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AVAILABLE: Library of Congress	30

BK/whl
11-28-58

Card 2/2

YERMAKOV, G.V. (Moskva)

Development of atomic power plants in the U.S.S.R. Fiz. v shkole 19
no.1:29-42 Ja-F '59. (MIRA 12:3)
(Atomic power plants)

37

L 18323-63 EPF(c)/RWT(m)/BDS Pr-4 RM/MW
ACCESSION NR: AP3004992 S/0076/63/037/008/1925/1927

AUTHORS: Skripov, V. P.; Ermakov, G. V.

59
58

TITLE: Practicable superheating of liquids

SOURCE: Zhurnal fiz. khimii, v. 37, no. 8, 1963, 1925-1927

TOPIC TAGS: superheating, superheating of liquid

ABSTRACT: Results are reported on the determination of practicable limits of superheating hydrocarbons at atmospheric and near critical pressures according to methods of H. Wakenshima and K. Takata (J. Phys. Soc. Japan, 13, 1958, 678) and V. P. Skripov and V. I. Kukushkin (Zh. fiz. khimii, 35, 1961, 2811). Experimental temperature limits agreed with values calculated from Doering-Volmer formula. Near the critical conditions ($p = 0.7 p_x$, $t_x = 196.60$) however, data could not be obtained because the droplets lose their explosive character. On $p - t$ coordinates, the line of superheating limits is almost straight for n-pentane. The values for n-hexane and n-heptane are practically on the same line. Orig. art.

Card 1/2

L 18323-63
ACCESSION NR: AP3004992

has: 1 table.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova,
Sverdlovsk (Ural polytechnic institute)

SUBMITTED: 19Nov62

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 003

Card 2/2

SKRIPOV, V.P.; YERMAKOV, G.V.

Pressure dependence of the ultimate superheating of liquids.
Zhur. fiz. khim. 38 no.2:396-404 F 64. (MIRA 17:8)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

YEIKMAKOV, G.V., Inzh.

Problems in the development of nuclear power engineering. *Templ-*
energetika 11 no.6:2-4 Je '64. (MIRA 18:7)

1. Gosudarstvennyy proizvodstvennyy komitet po energetike i
elektrifikatsii SSSR.

ACC NR: AP7006234

(N)

SOURCE CODE: UR/0076/67/041/001/0077/0081

AUTHOR: Yermakov, G. V.; Skripov, V. P.

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Saturation line, critical parameters, and attainable superheating of perfluoroparaffins

SOURCE: Zhurnal fizicheskoy khimii, v. 41, no. 1, 1967, 77-81

TOPIC TAGS: critical pressure, critical temperature, fluorinated hydrocarbon, alkane

ABSTRACT: The saturated vapor pressures and critical parameters T_c and p_c were measured statistically for six liquid perfluoroparaffins (perfluoropentane, perfluorohexane, perfluoroheptane, perfluorooctane, perfluorononane and perfluorodecane). The method of supernatant droplets was used to measure the temperatures of attainable superheating at pressures from atmospheric to $p \approx 0.7 p_c$. It was found that ϕ paraffins follow the law of thermodynamic similitude between normal and fluorinated paraffins. The potential parameters of the substances studied depend almost linearly on the number of carbon atoms in the paraffin molecule. The weakening of intermolecular interaction upon substitution of hydrogen atoms with fluorine in paraffins is estimated. Authors thank V. V. Firsov for his assistance. Orig. art. has: 4 figures, 2 tables and 1 formula.

SUB CODE: 07/ SUEM DATE: 12Jul65/ ORIG REF: 008/ OTR REF: 002 UDC: 541.123
Card 1/1

DEMSHIN, V.Ya.; YERMAKOV, G.V.

Operation of a foam dust collector under the condition of preliminary steam condensation on dust particles. Zhur.prikl. khim. 38 no.3:691-693 Mr '65. (MIRA 18:11)

1. Ivanovskiy khimiko-tekhnologicheskii institut. Submitted Febr. 1, 1963.

YERMAKOV, I.A.; MAKARIN, P.P., insh.

New developments in techniques. Tekst.prom. 20
no.5:59-62 Ny '60. (MIRA 13:8)

1. Zamestitel' glavnogo inzhenera Kamenskogo pryadil'no-
tkatskogo kombinata "Krasnoye szanya" (for Yermakov).
(Spinning)

YERMAKOV, I. A

Ways of increasing labor productivity on state farms. Vop.ekon.
no.6:141-144 Jo '57. (Krasnodar Territory--Grain) (MLRA 10:7)

YERMAKOV, Iuan Afanas'yevich

YERMAKOV, Iuan Afanas'yevich; KHUDOKORMOV, G.H., red; QUINTSOVA, A.S.,
red. 1st-va; PIRVA, L., tekhn.red.

[State farms in the U.S.S.R.] Sovkhoz v SSSR. Moskva, Gos. 1st-vo
"Sovetskaya nauka," 1957. 36 p. (MIRA 11:2)
(State farms)

YERMAKOV, I.G., inzhener-geolog

Engineering geology characteristics of loess soils in the
area of the Novosibirsk-Barnaul railroad line. Trudy
NIIZHT no. 22:57-69 '61 (MIRA 19:1)

YERMAKOV, I.G.; SHAROV, V.I.

Relationship between the deformation modulus of West Siberian
dusty sands and the porosity coefficient. Trudy NIIZET no.28:
151-154 '62. (MIRA 16:11)

YERMAKOV, I.G. (Novosibirsk)

Conference in Novosibirsk on the exchange of experiences in engineering
and geological work. Osn.,fund. i mekh.grun. 6 no.6:28-29 '64.
(MIRA 18:1)

YERMAKOV, I.N.

SIMAKIN, A.M.; BORISSOV, A.M.; GRIBKOV, V.K.; AFONITOSIN, N. [Afonitoshin, V.N.]; TSUDESSOV, I.D. [Chudesov, I.D.]; ~~YERMAKOV, I.N.~~
[Yermakov, I.N.]; PALU, A. [translator]; ~~ORA, K., red.;~~
ZINBERG, K., tekhn. red.

[Technology of the servicing of the GAZ-51 automobile in agricultural use] Auto GAZ-51 tehnilise teenindamise tehnoloogia põllumajanduses. Tallinn, Eesti riiklik kirjastus, 1962. 79 p.
Translated from the Russian. (NIRA 15:5)
(Automobiles--Maintenance and repair)

ARTEM'YEV, Yu.N., kand. tekhn. nauk; ASTVATSATUROV, G.G., inzh.;
 BARABANOV, V.Ye., inzh.; BARYKOV, G.A., inzh.; BLIKOVATYY, S.I.,
 inzh.; GALAYEVA, L.M., inzh.; GAL'PERIN, A.S., kand. tekhn. nauk;
 GAL'CHENKO, I.I., inzh.; GONCHAR, I.S., kand. tekhn. nauk;
 DEGTYAREV, I.L., kand. tekhn. nauk; DYADYUSHKO, V.P., inzh.;
~~YERMAKOV, I.N., inzh.~~; ZHOTKEVICH, T.S., inzh.; ZUSMANOVICH, G.G.,
 inzh.; KAZAKOV, V.K., inzh.; KOZLOV, A.M., inzh.; KOROLEV, N.A.,
 inzh.; KRI'YENKO, P.M., kand. tekhn. nauk; LAPITSKIY, M.A., inzh.;
 LEBEDEV, K.S., inzh.; LIBERMAN, A.R., inzh.; LIVSHITS, L.G., kand.
 tekhn. nauk; LOSEV, V.N., inzh.; LUKANOV, M.A., inzh.; LYUBCHENKO,
 A.M., inzh.; MAMEDOV, A.M., kand. tekhn. nauk; MATVEYEV, V.A.,
 inzh.; ORANSKIY, N.N., inzh.; POLYACHENKO, A.V., kand. tekhn.nauk;
 POFOV, V.P., kand. tekhn. nauk; PUSTOVALOV, I.I., inzh.;
 FYTCHENKO, P.I., inzh.; PYATETSKIY, B.G., inzh.; RABOCHIY, L.G.,
 kand. tekhn. nauk; ROL'BIN, Ye.M., inzh.; SELIVANOV, A.I., doktor
 tekhn. nauk; SEMENOV, V.M., inzh.; SKOROKHOD, I.I., inzh.; SLABODCHIKOV,
 V.I., inzh.; STORCHAK, I.M., inzh.; STRADYNOV, F.Ya., kand. tekhn.
 nauk; SUKHINA, N.V., inzh.; TIMOFEYEV, N.D., inzh.; FEDOSOV, I.M.,
 kand. tekhn. nauk; FILATOV, A.G., inzh.; KHODOV, L.P., inzh.;
 KHROMETSKIY, P.A., inzh.; TSVETKOV, V.S., inzh.; TSEYTLIN, B.Ye.,
 inzh.; SHARAGIN, A.M., inzh.; CHISTYAKOV, V.D., inzh.; EUD'KO, V.A.,
 red.; PESTRYAKOV, A.I., red.; GUREVICH, M.M., tekhn. red.
 [Manual on the repair of machinery and tractors] Spravochnik po card)
 remontu mashinno-traktornogo parka. Pod red. A.I.Selivanova.
 Moskva, Sel'khozizdat. Vols.1-2. 1962. (MIRA 15:6)
 (Agricultural machinery—Maintenance and repair)
 (Tractors—Maintenance and repair)

YERMAKOV, I.P.

Method of cytochemical determination of histones with the aid
of Fast Green. Fiziol. rast. 12 no.5:939-940 S-O '65.

(MIRA 19:1)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR, Moskva.

KAKHIDZE, N.T.; YERMAKOV, I.P.

Response of *Elodea densa* cells to the action of gibberellic acid. *Fiziol. rast.* 11 no.5:914-916 S-O '64.

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow. (MIRA 17:10)

YERMAKOV, I.F.

Cytochemical study of proteins and nucleic acids in the process of gall development on willow leaves. Nauch. dokl. vyzh. shkoly; biol. nauki no.1:156-159 '65. (MIRA 18:2)

1. Rekomendovana kafedroy fiziologii rasteniy Moskovskogo gosudarstvennogo universiteta.

YERMAKOV, I. S.; SALAMATOV, I. I.; SHAKHOV, F. M.; and SHULIKOV, Ya. V.

"Principles and Methods of Normalization and Unification in Chemical Machine Building," Standart., No 3, pp 9-22, 1954

Translation M-313, 30 Mar 55

YERMAKOV, I.S., inzh.

Relay for preventing short circuits due to the zero wire break.
Bez.truda v prom. 6 no.1:35 Ja '62. (MIRA 15:1)
(Electric relays) (Short circuits--Safety measures)

YERMAKOV, I.S. [Iermakov, I.S.]

Ways to secure the supply of chemical industries with heat
exchanging apparatus. Khim.prom. [Ukr.] no.2:36-38 Ap-Ja
'65. (MIRA 18:6)

YERMAKOV, I.S.

Standardization of chemical equipment. Standartizatsia 28
no.5:8-12 My '64. (MIRA 17:12)

1. Direktor Ukrainskogo nauchno-issledovatel'skogo instituta
khimicheskogo mashinostroyeniya.

BORISOV, G.A., red.; YERMAKOV, I.V., red.; YERMOLIN, M.A., red.;
MALAFEYEV, R.I., red.; SERGEYEV, P.A., red.; FEDOROV,
I.V., red.

[Collection of articles on scientific methodology; physics
and mathematics faculty] Nauchno-metodicheski sbornik;
fiziko-matematicheskii fakul'tet. Kurga, 1962. 238 p.
(MIRA 16:12)

1. Kurgan. Gosudarstvennyy pedagogicheskiy institut.
(Physics--Study and teaching)
(Mathematics--Study and teaching)

Begin reel
082

YERMAKOV, B.

Spark arrester with a reflector. Posh.delo 6 no.8:28
Ag '60. (MIRA 13:8)

1. Starshiy inspektor Upravleniya posharnoy okhrany
Uzbekskoy SSR, Tashkent.
(Fractors--Equipment and supplies)

L 15574-43
ACCESSION NR: AF3902170

EMP(q)/ENT(n)/RDS AFPTC/ASE JD

8/1921/1/1/000/009/0036/0104

AUTHORS: Oaiyov, V. P.; Yernskov, B. A.

54
53

TITLE: The study of top pouring electric steel

SOURCE: AN Ukr RSR. Viddil tekhnichnykh nauk. Voprosy proizvodstva stali. no. 9, 1963, 96-104

TOPIC TAGS: electric steel, top pouring, bottom pouring

ABSTRACT: The results obtained by the top- and bottom-pouring methods are described and compared, and the advantages of top pouring over bottom pouring are discussed. The main disadvantages of bottom pouring are its requirement of additional equipment (refractory materials, bottom plates, etc.), more working hours, loss of metal in casting channels, and their easy rupture. Top pouring is free from these shortcomings, produces better microstructure, and is more amenable to automation. However, bottom pouring was preferred until recently. The old method of top casting resulted in an inadequate ingot surface on alloy steels, required an overall cleaning of the ingot, and caused the adhesion of metal to the bottom of the mould because of the strength of jet impact against

Card 1/2

L 15574-63

ACCESSION NR: AT3002170

the mould bottom. The new top-pouring procedure was worked out and tested in 1960. The formation of surface defects was eliminated by covering the moulds with special glass fabric and by using a certain amount of liquid slag in pouring. This protected the exposed metal surface and prevented the bottom sticking. The authors conclude that despite an 8-10% loss of TiO₂ in burning the quality of stainless steel was not affected, that the new procedure of top casting is much simpler, that it produces the same results, and that it is less expensive than the bottom pouring. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10May63

ENCL: 00

SUB CODE: ML

NO REF SOV: 00

OTHER: 002

Card 2/2

YERMAKOV, B.A.; LUKIN, A.V.; MAK, A.A.

Shortening of the lifetime of the metastable level in a
Q-modulated laser. Opt. i spektr. 18 no.2:353-354 F '65.
(MIRA 18 4)

BALASHOV, I.F.; YERMAKOV, B.A.

Frequency characteristics of photoelectric multipliers.
Radiotekh. i elektron. 9 no.5:907-909 My '64.

(MIRA 17:7)

05449
SOV/120-59-3-20/46

AUTHORS: Yernakov, B. A., and Mak, A. A.

TITLE: Use of Storage in Recording Flash Spectra Photoelectrically
(Primeneniye metoda nakopleniya pri fotoelektricheskoy
registratsii vremennykh spektrov svetovykh
vspyshek)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3,
pp 94-97 (USSR)

ABSTRACT: The system is illustrated by Fig 1, in which 1 is the pulsed (repetitive) light source, 2 is the grating monochromator, 3 is the photomultiplier, 4 is the amplifier, 5 is the delay line (with a synchronizing pulse input), 6 is the gating-pulse generator, 7 and 7' are electronic gates, 8 and 8' are stores, 9 is the output stage, and 10 is a recorder. (The object of 7' and 8' is to improve the stability of the zero reading) The second section deals with the errors of measurement and with the choice of scan rate. The third section describes the units briefly; amplifier 4 is a normal video-amplifier with a rise time of 0.05 μ sec and with a gain of 100. The amplifier is linear up to 3 V output. The gating-pulse generator uses a thyatron to discharge
Card 1/2 a delay line. Fig. 3 shows the differential output

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SOV/120-59-3-20/46

Use of Storage in Recording Flash Spectra Photoelectrically

stage, together with the gates and stores. Fig 4 shows the contour of the 2605 Å line of Xe III at $2 \cdot 10^{-6}$ sec after the start of a discharge from 0.05 µF capacitor charged to 12 kV; the integrating time is 10 sec, with a repetition frequency of 15 c/s. The time resolution is 5×10^{-8} sec; the wavelength resolution is 1.5 Å. There are 4 figures and 8 references, 5 of which are Soviet and 3 western.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optical Institute)

SUBMITTED: March, 24, 1958

Card 2/2

YERMAKOV, B. A.

25378

B/089/61/011/001/007/010
B102/B214

216000

AUTHORS: Rostovtsev, A. A., Il'in, Yu. I., Beregovskiy, A. S.,
Tishin, V. G., Zezyulin, V. Ye., Yermakov, B. A.

TITLE: A two-dimensional 1024-channel pulse-height analyzer of the
type DMA-1024 (DKA-1024)

PERIODICAL: Atomnaya energiya, v. 11, no. 1, 1961, 58 - 59

TEXT: The two-dimensional amplitude analyzers developed in the west suffer from certain shortcomings. For example, the one described in Ref. 1 allows only for a qualitative study of the spectrum; those described in Refs. 2 and 3, though allowing for quantitative study, have two-stage recording and the results can not be observed during the experiment. These have some other disadvantages, too. The authors of this "Letter to the Editor" have developed and constructed a two-dimensional pulse-height analyzer with 1024 channels; it wears the designation DMA-1024. It consists of a recorder block and two equal sorting instruments "X" and "Y" into which the pulses of the detectors are fed; these are recorded and processed only under certain given conditions of coincidence. The analyzer Card 1/5

A two-dimensional 1024 channel ...

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SC89/51/011/001/007/010
B102/B214

X

channels are arranged in the form of a matrix (32-32 = 1024). The channels of the magnetic storage system (with ferrite nuclei) have each a capacity of 16,000 pulses. The informations are made visible on the screens of two cathode-ray tubes of the type 13X037 (13L037). The information is represented on the screen of one of the tubes in a linear system with ~10% accuracy, and on that of the other in a two-decadic system in the form of an optically modulated point screen. The analyzer works with vacuum tubes and semiconductor diodes; in all it contains 350 tubes. The apparatus operates on a.c. mains (220 v, 50 cps) and consumes 2.5 kw. Its size is 2000-900-800 mm. The apparatus is easy to control, and has a reliable uninterrupted working for 8 hours. The temporal distribution of two correlated processes can also be studied with its help. The figure shows

a two-dimensional spectrum of the Co⁶⁰- γ - radiation taken by means of this apparatus. The spectrum shows three groups of possible coincidences. The group of coincidences for complete absorption of the γ -rays with the energies 1.17 and 1.33 Mev in both crystals (photopeak) is represented by two vertices: 1.17; 1.33 Mev, and 1.33; 1.17 Mev. The group coincidences for complete absorption in the one, and partial absorption in the other crystal (Compton scattering) is represented by four "ridges" (photopeaks -
Card 2/5

25378

8/089/61/011/001/007/010
8102/8214

A two-dimensional 1024 channel ...

Compton). The group of coincidences for partial absorption in each of the two crystals, is represented by the surface part designated "Compton - Compton". Scintillation counters with photomultipliers of the type 63Y1C (FEU1S) and NaI (TI) crystal of 30 mm length and 20 mm height were employed for taking the spectrum. The resolving time of the coincidence circuit was ~1 nsec. The authors thank Yu. S. Zamyatnin on whose initiative the work was carried out; V. M. Gorbachev for discussion and interest, and L. P. Bilibin for help. There are 1 figure and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The three references to English-language publications read as follows: Ref.1: L. Grodzins. Proceedings of the Second United Nations Inter. Conference on the Peaceful Uses of Atomic Energy. Vol. 14, Geneva, 1958, p. 351. Ref.2: M. Birk, T. Braid, R. Detenbeck. Rev. Scient. Instrum., 29, 203 (1958). Ref.3: P. Cavanagh, Boyce. Rev. Scient. Instrum., 27, 1028 (1956).

SUBMITTED: April 6, 1961

Card 3/5

ACC NR: AP5025019

AUTHOR: Yermakov, B. A.⁴⁴; Lukin, A. V.⁴⁴; Mat, A. A.⁴⁴; Prilenchayev, D. B.⁴⁴

SOURCE CODE: UR/0385/65/002/008/0380/0383

ORG: none

TITLE: Monopulse generation with $\text{CaF}_2:\text{U}^{3+}$ crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pla'na v redaktsiyu (Prilozheniye), v. 2, no. 8, 1965, 380-383

93
B

TOPIC TAGS: solid state laser, laser pulsations, laser

ABSTRACT: This is a continuation of earlier work (Optika i spektroskopiya v. 18, 353, 1965) in which attainment of monopulse generation in the 2.35 μ infrared region with $\text{CaF}_2:\text{Dy}^{3+}$ was reported. In the present paper the authors report attainment of monopulse generation with $\text{CaF}_2:\text{U}^{3+}$ crystals at wavelengths 2.22 and 2.41 μ , using an experimental setup in which the crystals are cooled to 80-100K by a jet of nitrogen gas evaporated from the liquid phase (Fig. 1). A semitransparent coating with reflection coefficient $R = 0.95 \pm 0.6$ was deposited on one end of the crystal. The cavity switching was by means of a rotating total internal-reflection prism. The pump-lamp ignition was synchronized with a photoelectric system coupled to the prism rotating at $1-2 \times 10^4$ rpm. The crystals used were 3-55 mm in diameter and 20-30 mm long. The radiation receiver was a Ge:As photoresistance, and the generated energy was measured with a bolometer. The monopulse lasing at $\lambda_0 = 2.22 \mu$ was of the three-level type (Fig. 2a), with emission energy 0.1×10^{-3} J, corresponding to a pulse power of

Card 1/3

L 7691-66

ACC NR: AP5028019

0

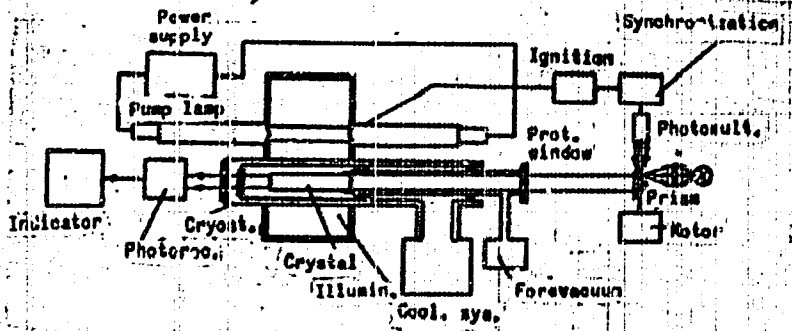


Fig. 1. Experimental setup

4×10^3 W. In several crystals monopulse λ_4 -level generation ($\lambda_4 = 2.51 \mu$) was obtained, apparently, because of the high concentration of the activator in these crystals. The shape of the pulse was the same as in Fig. 2a. The maximum laser energy in the monopulse was 10^{-3} J in this case (pulse power 5×10^4 W). At smaller prism

Card 2/3

1, 7691-66

ACC NR: AP5028019

0

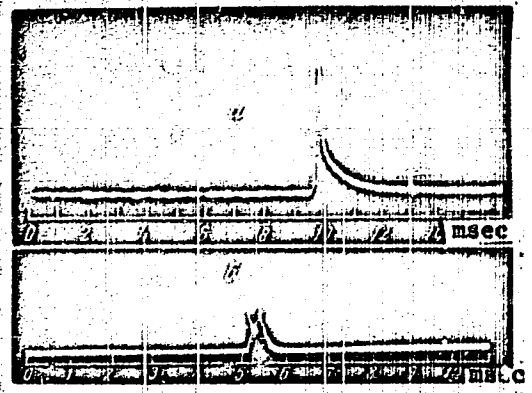


Fig. 1. Monopulse oscillograms

speeds, several laser pulses were obtained rather than one (Fig. 2b). Orig. art. has: 2 figures. [02]

SUB CODE: EC/ SUBM DATE: 31Aug65/ ORIG REF: 002/ ATD PRESS: 4141

Carl 3/3

24(7)

AUTHORS:

Vanyukov, M. P., Yermakov, B. A., Mak, A. A., Muratov, V. R.

SOV/54-59-3-5/21

TITLE:

Recording of the Variation With Time of the Contours of Spectral Lines in the Radiation of a Spark Discharge

PERIODICAL:

Vestnik Leningradskogo universiteta, Seriya fiziki i khimii, 1959, Nr 3, pp 25-32 (USSR)

ABSTRACT:

In the present paper a three-channel photoelectric apparatus for the recording of the variations with time pulses of the discharge spectra is developed for a wide intensity interval. The scheme of the apparatus is represented in figure 1. The spectral decomposition of the periodic discharges was made by means of a monochromator according to Eberth and Fast with a plane diffraction grating for interferences of first order. The grating was constructed by F. M. Gerasimov in the GOI Laboratory. During the recording the grating slowly rotated. It was connected with an electron selfrecording potentiometer of the type EPP-0.9 over a synchronous transmitter. The angular velocity of the grating could be adjusted gradually from 60 to 12, 2.5, 0.5, and 0.1 $\text{\AA}/\text{min}$. The radio apparatus consisted of three uniform channels permitting a simultaneous recording of the spectrum at three different instants, i.e. the amplitude of

Card. 1/3

Recording of the Variation With Time of the Contours of SOV/54-59-3-5/21
Spectral Lines in the Radiation of a Spark Discharge

the pulse obtained at the outlet of the electron trigger is proportional to the value average with respect to time Δt of the signal to be investigated for a given period of delay t_3 . The pulses obtained are thus modulated according to the spectral radiation distribution of the pulse source for time t_3 . These pulses arrive at a collecting scheme, subsequently at a direct-current amplifier, and finally at the selfrecording potentiometer. The three channels record in the time intervals 0.05 - 0.45 μ sec, 0.4 - 20 μ sec, and 0.5 - 50 μ sec. For the determination of the best working conditions the time of adjustment of the collecting element was varied. By means of this device line contours and also the shift of the maxima toward 0.1 μ may be observed. The limit of the time resolving power with time is $5 \cdot 10^{-8}$ sec. In the figures 2-7 the contours of the spectral lines of nitrogen and helium in spark discharge tubes are represented. Herefrom it may be seen that the lines widen mainly in the first stage of discharge (Fig 7) which indicates a Stark line widening. The maximum concentration of the charged particles is observed at the beginning of discharge.

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Recording of the Variation With Time of the Contours of Spectral Lines in the Radiation of a Spark Discharge. SOY/54-59-3-5/21

It was found from the helium line II 4686 Å that it is $\sim 10^{18}$ cm³. Also the arc discharge spectra of helium could be recorded. The observed asymmetry of the lines could be explained by the direction of the line shift. There are 7 figures and 7 references, 3 of which are Soviet.

SUBMITTED: April 14, 1959

Card 3/3

S/120/62/000/005/019/036
E192/E382

AUTHORS: Yermakov, B.A. and Khazov, L.D.

TITLE: A video-amplifier for exponential pulses with a maximum signal/noise ratio

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962.
117 - 120

TEXT: The gain in the signal/noise ratio (voltage ratio) at the output of an optimum filter, as compared with the ratio of a video-amplifier having a frequency characteristic $K(\omega)$, is expressed by (L.A. Vaynshteyn, V.D. Zubakov - Vydeleniye signalov na fone sluchaynykh pomekh (Separation of signals from random noise), 1960, Izd-vo Sov. radio):

$$\frac{P}{P_1} = \left(\frac{E \sqrt{S(t)}}{\pi S^2(t_{max})} \right)^{1/2} \quad (1)$$

$$= \left(\frac{\int_0^{\infty} S^2(t) dt \int_0^{\infty} |K(\omega)|^2 d\omega}{\pi S^2(t_{max})} \right)^{1/2}$$

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S/120/62/000/005/019/036
E192/E382

A video-amplifier

where $S(t)$ is the input signal, $\nu(t)$ is the white noise at the input, E is the energy of the signal, $S(t_{\max})$ is the maximum amplitude of the signal at the output of the video-amplifier and ρ/ρ_1 is the ratio of the signal/noise ratios at the output of the optimum filter and the video-amplifier. Eq. (1) is used to determine ρ/ρ_1 for a three-stage video-amplifier with simple RC stages, the input signal being in the form $S(t) = \delta/\alpha - \delta(e^{-\alpha t} - e^{-\beta t})$. The parameters α and β determine the shape, duration and energy of the pulse. The calculated results for various α/β as a function of τ/δ , where $\tau = RC$, are illustrated in Fig. 1. This shows that at a certain value of τ , ρ/ρ_1 has a minimum; this depends on the shape and duration of the pulse to be amplified. The minimum is also observed in the case of a 10-stage coil-compensated amplifier. The theory was verified experimentally by employing exponential pulses with $\alpha = 0.150$ and $1/\beta = 0.6 \mu s$, which was produced by a special generator.

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A video-amplifier

S/120/62/000/005/019/036
E192/E382

The noise was provided by a wideband amplifier, whose input received the noise from the load resistance of a photomultiplier. The experimental results were in good agreement with the theory. It was found, therefore, that in the case of an exponential pulse the maximum signal/noise ratio can be closely approached not necessarily by employing an optimum filter but by choosing a suitable rise time of the amplifier. There are 5 figures and 1 table.

ASSOCIATION: Gosudarstvennyy opticheskiy institut
(State Optics Institute)

SUBMITTED: December 2, 1961

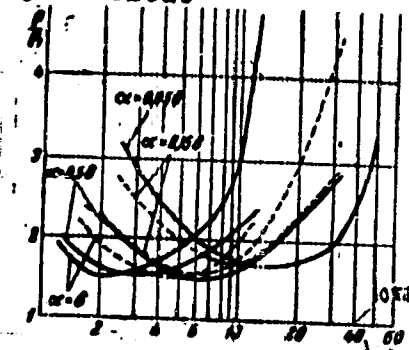


Fig. 1:

Card 3/3

L 2727-66 EWT(m)/EWP(j) RM/WH

ACC NR: AP6015435

SOURCE CODE: UR/0051/66/020/005/0903/0905

AUTHOR: Dovger, L. S.; Yermolov, I. A.; Lukin, A. Y.; Shklovskiy, L. J.

ORG: none

TITLE: Effect of stimulated emission on the transmission coefficient of some organic dye solution

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 903-905

TOPIC TAGS: ruby laser, stimulated emission, optic transmission, dye chemical, organic cyanate compound

ABSTRACT: Experiments are conducted to determine how much emission power density is required in the resonator of a ruby laser for transillumination of various organic solutions. A block diagram and brief description of the experimental equipment are given. Curves are also given showing the transmission coefficient as a function of incident radiation power for solutions of vanadyl phthalocyanine in dimethyl formamide, kryptocyanine in methanol, vanadyl phthalocyanine in nitrobenzene and zirconium phthalocyanine in α -bromonaphthalene. These curves show that transmission of the specimens approaches 100% at a power density of the order of several Mw/cm² which corresponds to energy densities of 10¹⁷ quanta/cm² in a period of 10⁻⁶ sec. This indicates that transillumination of specimens in this class is basically due to transi-

UDC: 621.375.9 : 535.004.14

C. d 1/2

L 21727-66

ACC NR: AP6015435

2

tions from ground energy levels to singlet states with lifetimes of the order of $(2-8) \cdot 10^{-9}$ sec. A reduction in solution concentration (increase in initial transmission) shifts the curve toward lower power densities without changing its shape. In conclusion the authors thank A. N. Terenin and O. D. Dmitriyevskiy for interest in the work. Orig. art. has: 3 figures. [14]

SUB CODE: 20/ SUBM DATE: 25Jun65/ ORIG REF: 001/ OTH REF: 003/
AID PRESS: 5007

Card 2/2 - BLQ

L 27779-66 EEC(k)-2/ENA(h)/EMP(s)/ENP(k)/ENT(l)/ENT(m)/FBD/I/ENP(q) IJP(c)
ACC NR: AP5015592 RM/WH/WG SOURCE CODE: UR/0368/66/004/005/0410/0414

53
49
B

AUTHOR: Yermakov, B. A.; Lutin, A. V.

ORG: none

TITLE: Mechanism responsible for clearing of organic phototropic shutters used in ruby lasers - 25

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 5, 1966, 410-414

TOPIC TAGS: ruby laser, phthalocyanine, phototropism, light absorption

ABSTRACT: The authors consider reversible bleaching absorption under the effect of powerful light pulses through a solution of vanadyl phthalocyanine in nitrobenzene on two wavelengths lying within the absorption band for this solution. A block diagram of the experimental setup is shown in the figure. In the resonator of the ruby laser there is a bleachable absorber (a solution of kryptocyanine in methanol) and a cell filled with benzene. Emission took place on wavelengths 649.3 mμ and 745 mμ (due to stimulated Raman scattering in benzene). The energy of the pulse with λ=745 mμ was about 15% of the energy on the ruby laser output. Monochromatic pulses were directed toward cell S with the solution to be studied through an attenuating filter selected in such a way that the intensity of emission on 745 mμ is insufficient to pass through the solution. The

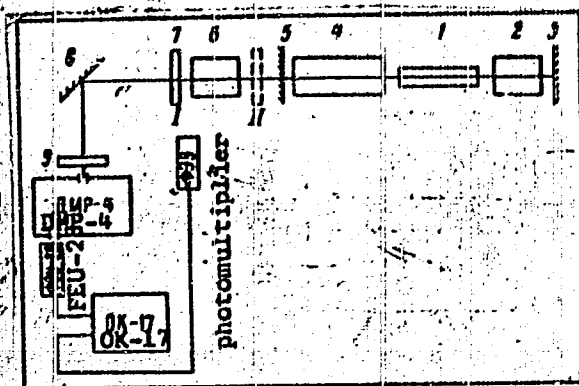
2

UDC: 621.375.9

Card 1/3

L 27779-66

ACC NR: AP6015592



1--ruby crystal; 2--phototropic shutter;
3--opaque mirror; 4--cell with benzene;
5--output mirrors; 6--cell with solution
to be studied; 7, 9--set of light filters;
8--rotating mirror

radiation passing through cell 6 and set of neutral filters 7 was directed to the input slit of monochromator DMR-4 tuned to a wavelength of 745 m μ . An FEU-28 photomultiplier was placed behind the output slit of the monochromator and the signal from the photo tube was recorded by an OK-17M oscil-

lograph. When the set of neutral filters was placed in front of the cell (position II) and the emission intensity on $\lambda=694.3$ m μ was not sufficient to pass through the solution, a pulse was recorded on $\lambda=745$ m μ with an amplitude of 1/2-1/3 that of the pulse produced when the solution was exposed to radiation with $\lambda=694.3$ m μ with the set of filters 7 in position I. The results showed clearing of phthalocyanine solutions throughout the entire absorption band during exposure to intense monochromatic radiation. A theoretical explanation is given for the clearing effect based on changes in population in a three-level model for the solution. This three-level model for

Cont 2/3

L 2779-66

ACC NR: AP6015592

4

phototropic substances may be used to determine the effect which spectroscopic characteristics of materials have on their efficiency as laser shutters which is important for synthesis or selection of materials for this purpose. In conclusion the authors thank I. F. Balashov, A. A. Mak and D. S. Prilezhayev for discussing the work and L. S. Dviger for assistance with the calculations. Orig. art. has: "Figuras. [14]

SUB CODE: 20/

SUBM DATE: 03Jan66/

ORIG REF: 003/

JRN REF: 005/

ATD PRESS: 5103

Cards 3/3

cc

L 1964 65 EMB(3)/EWA(k)/FBI/INT(1)/ENT(n)/HR(c)/RGC(k)-2/RF(t)/RP(t)/
 EIC(6)-2/ENP(k)/EMP(b)/EWA(m)-2/EWA(h) En-1/Pg-1/Pr-1/Pe/Pi-1/PLC(a)/
 SMD/BSL/AFWL/ASD(a)-5/ASD(e)/AFMTR/ALM(a)/AFIC(R)/ASG(rs) 87005-761 047 106/2013/2016
 ACCESSION NR: AP500181C

AUTHOR: Belousova, I. M.; Daillov, O. B.; Kuznetsov, B. A.

TITLE: Angular oscillation modes in a neon laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2013-2018

TOPIC TAGS: laser, gas laser, neon helium laser, laser beam spectroscopy, laser mode analysis

ABSTRACT: The authors have set out to generate angular modes with higher indices of radial symmetry in a neon-helium laser with internal plane mirrors and to compare their results with those predicted theoretically by I. A. Vaynshteyn (ZhETF, 44, 1050, 1963). The laser frequencies were observed by means of the photoheterodyne method described in an earlier paper (A. I. Potemkin, I. A. Gudrud, Gen. R. O. Johnson, Phys. Rev., 99, 1697, 1955) which showed the fact that the laser emission receiver is a photoheterodyne operated as a square-law detector. The resonator was 1 m long and the effective diameter of the mirrors was 16 cm. The mirrors were aligned

Card 1/3

L 19678-65

ACCESSION NR: AF5001810

within 0.2 angular seconds, polished within $\lambda = 1/400$, and dielectric-coated with a coefficient of reflection of $98.5 \pm 0.5\%$ for wavelengths of approximately 1.15μ . By suitable choice of laser pumping and gas composition, only one emission line ($\lambda = 1.1523 \mu$) was produced. The spectral analysis of the laser beam was performed by means of infrared filter, the FEU-28 photoelectron multiplier, a 10 Mc video amplifier, and a panoramic spectroanalyser. The above equipment was capable of recording difference frequencies from 20 Kcs to 10 Mc with an accuracy of ± 5 Kcs. The following experimental facts were observed: the beat intensity decreases with an increase of beat frequency; variation in the angle of the resonator plates causes a change in the distribution of beat frequencies; 300- and 500-Kcs frequencies were recorded, and 2- and 4-Mcs beat frequencies appeared only after many reflections. The conditions for the generation of axial modes indicate that the difference frequency between two fundamental modes $\nu = c/2L$, where c is the velocity of light, and $2L$ is the length of the resonator lies within the 150 Mcs region. Thus, the difference frequencies observed by the authors are not really beats between axial modes. The presence of beats in the 2-4 Mcs region can be attributed to the following factors: additional diffraction in the damaged mirror di-

Cont 2/3

L 12678-45
ACCESSION NR: AP5001818

electric zone; formation of new angular modes with smaller diffraction losses; and additional difference frequencies between the H_{11q} and H_{11q} modes. Although the value of the beat frequency obtained experimentally by the authors differs from theoretical estimates by 30-50%, it can be considered satisfactory. The dependence of all the recorded beat frequencies on the angular position of the mirrors agrees qualitatively with theoretical computations. This result also confirms the possibility of identifying recorded beat frequencies due to the difference frequencies between the axial and angular modes with lowest indices. "The authors thank V. V. Lyubimov for evaluation of experimental results and M. P. Vanyukov for his attention given to their work." Orig. art. has: 3 formulas, 4 figures, and 1 table.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optical Institute)

SUBMITTED: 17 Jun 63

ENCL: 00

AVB CODE: 2C

NO REF NOY: 001

OTHER: 009

AVB PRHS: 3160

Card 3/3

E 26513-67
FBI(S)/FIA(k)/FBI(1)/FBI(2)/FBI(3)/FBI(4)/FBI(5)/FBI(6)/FBI(7)/FBI(8)/FBI(9)/FBI(10)/FBI(11)/FBI(12)/FBI(13)/FBI(14)/FBI(15)/FBI(16)/FBI(17)/FBI(18)/FBI(19)/FBI(20)/FBI(21)/FBI(22)/FBI(23)/FBI(24)/FBI(25)/FBI(26)/FBI(27)/FBI(28)/FBI(29)/FBI(30)/FBI(31)/FBI(32)/FBI(33)/FBI(34)/FBI(35)/FBI(36)/FBI(37)/FBI(38)/FBI(39)/FBI(40)/FBI(41)/FBI(42)/FBI(43)/FBI(44)/FBI(45)/FBI(46)/FBI(47)/FBI(48)/FBI(49)/FBI(50)/FBI(51)/FBI(52)/FBI(53)/FBI(54)/FBI(55)/FBI(56)/FBI(57)/FBI(58)/FBI(59)/FBI(60)/FBI(61)/FBI(62)/FBI(63)/FBI(64)/FBI(65)/FBI(66)/FBI(67)/FBI(68)/FBI(69)/FBI(70)/FBI(71)/FBI(72)/FBI(73)/FBI(74)/FBI(75)/FBI(76)/FBI(77)/FBI(78)/FBI(79)/FBI(80)/FBI(81)/FBI(82)/FBI(83)/FBI(84)/FBI(85)/FBI(86)/FBI(87)/FBI(88)/FBI(89)/FBI(90)/FBI(91)/FBI(92)/FBI(93)/FBI(94)/FBI(95)/FBI(96)/FBI(97)/FBI(98)/FBI(99)/FBI(100)

ACCESSION NR: AP5005060

8/0051/05/018/002/0353/0354

AUTHOR: Yermakov, B. A.; Lukin, A. V.; Mat, A. A.

56
92

TITLE: Reducing metastable level lifetime in a modulated-Q laser

25 B

SOURCE: Optika i spektroskopiya, v. 18, no. 2, 1965, 353-354

TOPIC TAGS: laser, metastable level lifetime, metastable level population, Q modulator, Q spoiler

ABSTRACT: Stored excitation energy is limited by the decrease in effective metastable level lifetime when Q modulation tends to enhance spontaneous emission. The problem was examined in a four-level system in which the population N_2 of the metastable level was considerably smaller than the population of the ground state. The dependence of the effective excited state lifetime (τ_{eff}) on the number of stimulated transitions and on the population N_2 of the metastable level was determined. In the first approximation τ_{eff} can be regarded as equal to the time constant of the emission decay after the end of the pumping pulse; it was found to be 2.8 nsec, considerably smaller than the lifetime $\tau = 20$ nsec determined from photofluorescence decay. The results obtained show that the lifetime of the metastable level can decrease considerably when the operation is conducted at a single pulse regime. Orig. art. has: 1 figure and 2 formulas.

[JA]

Card 1/2

1-26613-65

ACCESSION NR: AP5005060

ASSOCIATION: none

SUBMITTED: 19Jun64

ENCE: 00

SUB CODE: EC-1/P

NO REF SOV: 000

OTHER: 001

ATD PRSG: 3188

Card 2/2

YERMAKOV, B. F.

387. DEHYDRATION OF GASOLINE IN STORAGE TANKS. Yerimakov, B.F.
(Makob. zheroi. Prom. (Q) ~~High Field~~ ~~Time~~ ~~Process~~), Sept. 1952; abstr.
in Chem. Abstr., 1954, vol. 48, 988). A diagram is given of a group of
three continuously operating settling tanks connected by siphon tubes. C.S.

10-14-54
JH

~~YERMAKOV, R.L.~~ inshenor; RADOMSKIY, V.P., tehnik.

Adjustment of chain grates for anthracite. Energetik 4 no.6:14-15
Je '56. (MIRA 9:8)

(Boilers)

YEMAKOV, B.F., inzhener; RADOMSKIY, V.P.

Using anthracite dust. Masl.-shir.prom.22 no.6:30 '56. (MIRA 9:10)

1. Vinitkiy Maslobayno-shirovey kombinat.
(Coal, Pulverized) (Boilers)

YERMAKOV, B.F., Iashener.

~~Clearing filter press cloths. Masl.-shir.prom.23~~ no.1:38 '57.
(MLRA 10:1)

1. Vinnitskiy Masloboyno-shirevoy kombinat.
(Filter presses)

YERNAKOV, B.P., inzhener.

Mechanical feeding of coal into boiler furnaces at the Zaporozh'ye
Oils and Fats Combine. Masl.-shir.prom. 17 no.12:21-22 T '52.
(MLFA 10:9)

1. Zaporozhkiy masloshirkombinat.
(Boilers)

YERMAKOV, B.F., insh.; NABOTA, A.P., insh.; VERNER, E.O., insh.

From the work experience of Vinnitsa Oil and Fat Combine. Masl.-
shir.prom. 28 no.12:27-28 D '62. (MIRA 16:1)

1. Vinnitskiy masloshirovoy kombinat.
(Hydrogenation oils and fats) (Vinnitsa)

L 29711-66 EWI(1)/EWI(m)/EWF(e)/EWP(t)/ETI WH/WW/JD

ACC NR: AP6015587

(A)

SOURCE CODE: UR/0146/66/009/002/0123/0125

AUTHOR: Ispiryan, N. A.; Yerwakov, R. F.; Yaryshev, N. A. 77
BORG: Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut
tochnoy mekhaniki i optiki)TITLE: An argon-arc heat source for high temperature research 6 2SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 123-125

TOPIC TAGS: high temperature research, electric arc, argon, heat source

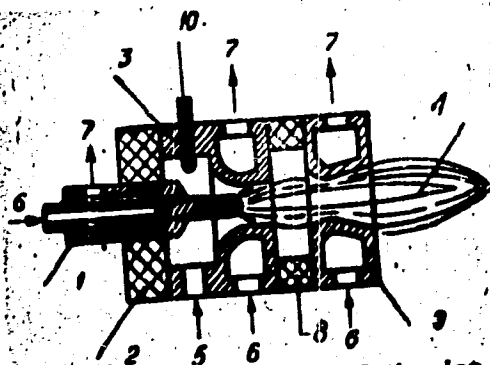
ABSTRACT: Data are given from experimental tests of an argon-arc source with a power of up to 20 kw designed for thermophysical research (see figures). An electric arc is struck between electrode 1 (the cathode) and nozzle 3 (the anode) which heats the argon injected into the nozzle cavity through aperture 5. This results in jet 4 which is the source of heat. Power is increased by using an additional copper or graphite nozzle 9 to which a positive potential is applied after ignition. The arc is struck by introducing graphite or tungsten rod 10 into the cavity of the first nozzle 3 until it makes contact with electrode 1. A graph is given showing the specific thermal flux of the output jet as a function of the electric power of the source. The heat flux 15 mm from the cutoff of the output nozzle is $6.4 \cdot 10^6$ w/m² for an argon flow rate of

UDC: 621.365.2

Card 1/2

L 29711-66

ACC NR: AP6015587



1--electrode (cathode); 2--insulation sleeve; 3--first nozzle (anode); 4--jet; 5--argon input; 6--water input; 7--water outlet; 8--insulating liner; 9--second nozzle, 10--graphite or tungsten rod.

1.77 m³/hr. The temperature of the jet is at least 7000°K. It should be possible to increase the power of the source still further by using additional anodes. Orig. art. has: 2 figures.

SUB CODE: 20/

SUBM DATE: 03Dec64/

ORIG REF: 003

Card 2/2 *CV*

POGODIN, A.S., inzhener; BU'ATOV, N.I.; YERMAKOV, B.M., inzhener;
BURIKOV, V.I., inzhener.

Reproduction of blueprints without copying (tracing) Vest.
mash. 35 no.6:75-80 Ja '55. (MIRA 8:8)
(Blueprinting)

YERMAKOV, B.S.; YERMAKOVA, V.Ye.

Setting of adventitious roots in the green cuttings of grape.
Biol. Glav. bot. sada no.55:99-106 '64. (MIRA 18:11)

1. Moskovskaya sel'skokhoyaystvennaya akademiya imeni K.A.
Timiryazeva.

YERMAKOV, D.
POTASHNIKOV, F.; YERMAKOV, D.

[Factory and local committee control over housing construction]
Kontrol' FZMK nad zhilishchnym stroitel'stvom. Iss. 2-e, ispr. 1
dop. Moskva, Profizdat, 1953. 87 p. (MLBA 7:11D)

~~YERMAKOV, D. BORASHNINOV, F.~~

Utilise all means to speed up housing construction.
5 no.6:11-14 Je '57.

Sov.profsoiusy
(MIRA 10:7)

(Housing)

~~YERMAKOV, D.~~ starshiy inspektor

Give every possible help to individual construction projects.
Sov.profsoiuzy 7 no.10:22-24 My '59. (MIRA 12:9)

1. Zhilishchnobytovoy otdel Vsesoyuznogo tsentral'nogo soveta
profsoyuzov. (Labor and laboring classes--Dwellings)

YERMAKOV, D. A.

231147

USNR/Engineering - Heat, Steam Turbines Jan 52

"Reconstruction of the Flow Section of a Steam Turbine," D. A. Yermakov, V. P. Kurpinov, A. F. Dolgov, Engineers, GRES Mosenergo, I. D. Lyubovitch, Cand Tech Sci, G. N. Khrushev, Eng, Lab of Steam Turbines, VTI

"Tr. v-s Replotekh Inst" No 6, pp 24-27

Describes changes in design of turbine to increase its efficiency and reduce consumption of theoretical fuel to 490 g/kwh. Two-cylinder condensing Siemens-Shuckert 50,000-kw turbine was built in

231147

1930-31. Regulation stage with 140 nozzles and 19 reaction stages were redesigned. Tests showed decrease in heat rate by 4.3%. Turbine capacity was increased to 52,000 kw at same max steam rate.

231147

YERMAKOV, D. A., Eng.; KOVALEV, YU. N., Eng.

Kashira Hydroelectric Power Station

Kashira electric power station is 30 years old. Eng. # D. A. Yermakov, Yu. N. Kovalev.
Elek. sta. no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

GORSHKOV, A. S.; YERMAKOV, D. A.

Electric Power Plants

Thirteenth anniversary of the scientific and practical activity of the Kashira Electric Power Station in collaboration with the All-Union Thermo-Technical Institute. Izv, VTI, 21, No. 6, 1952.

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

YERMAKOV, D. A.

VASIL'YEV, N.S.; KASIMOV, V.I.; KALININ, G.A.; KUVAKIN, V.P.; MEDVEDEV, A.P.;
FAYVIL'YICH, Ya.A.; KERIPUNOV, V.P.; YERMAKOV, D.A., redaktor;
KINOV, A.P., redaktor; OSTROVSKIY, Ya.M., redaktor; KAL'SKAYA, D.D.,
redaktor; FRIDKIN, A.M., tekhnicheskiy redaktor

[Experience in operating the Kashira Hydroelectric Power Station]
Opyt ekspluatatsii Kashirskoi GRES. Moskva, Gos. energ. izd-vo,
1956. 179 p. (MIRA 9:9)
(Kashira Hydroelectric Power Station)

GEORGIYEV, Ivan Georgiyevich; ZHARKOVSKIY, Daniil Vladimirovich;
TREYVAS, A.B., doktor sel'khoz. nauk, prof., retsenzent;
SUSLOV, V.P., kand. tekhn. nauk, retsenzent; YEMAYOV,
D.F., red.; ZEL'KO, M.M., tekhn. red.

[Fuel, lubricants, and water] Toplivo, smazochnye mate-
rialy i voda; uchebnoe posobie. Minsk, Gos.izd-vo sel'-
khoz. lit-ry BSSR, 1963. 234 p. (MIRA 16:12)
(Fuel) (Lubrication and lubricants) (Water)

L 34300-56 FBT/FBT(1)/EWT(m)/EBC(k)-2/T/EWF(t)/EII/EWP(k) IJP(c) WG/JD

ACC NR: AP6018453

SOURCE CODE: UR/0051/66/020/005/1083/1085

AUTHOR: Gonchukov, S. A.; Yermakov, G. A.; Mikhnenko, G. A.; Protserko, Ye. D. 50

ORG: none

TITLE: On the problem of temperature effects in an Ne-He laser 25

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 1083-1085

TOPIC TAGS: gas laser, laser emission, discharge tube, HELIUM, NEON, GAS DIS-
CHARGE, TEMPERATURE DEPENDENCE, LASER PUMPING

ABSTRACT: The variation in the power of an Ne-He laser under constant pumping during the first few minutes of the discharge excitation is investigated. This variation is obviously due to the heating up of the tube and the variation in the concentration of the neutral atoms in the gas mixture. When the tube is fired, the gas pressure rises somewhat. The heating up of the tube decreases the number of particles in the working section and varies the temperature and concentration of electrons in the discharge. These changes, together with the varying particle velocity distribution, affect the magnitude of the population inversion and thereby the output power of the laser. The output power is plotted as a function of pressure and as a function of the concentration of unexcited atoms with various wall temperatures. The experimental method, conditions, and equipment are described. Results show that there is an optimum concentration at which a peak power is obtained regardless of the temperature and that the pow-

Card 1/2

UDC: 621.375.9:535.096

L 34800-66

ACC NR: AP6018453

er output is temperature-dependent. Reasons for the variation in power output are given. The authors thank A. N. Orayevskiy for discussing the results. Orig. art. has: [14]
2 figures.

SUB CODE: 20/

SUBM DATE: 08Dec65/

ORIG REF: 001/

OTH REF: 001

'ATD PRESS: 5031

Card 2/2

90

YERMAKOV, D. I. and NOVAKOVSKIY, S. V.

"Television Standard USSR GOST 7845-55," S. V. Novakovskiy
and D. I. Yermakov, Elektrosvyaz, No 1, Jan 57, pp 24-35

The new television broadcasting standard GOST 7845-55, which was prepared by the Scientific Research Institute, Ministry of Communications, and approved on 31 December 1955 by the Committee on Standards, Measures, and Measuring Instruments, prescribes the following parameters in TV broadcasting practice: number of lines per frame (625), width of radio channel (a total of 8 Mc, of which 6 Mc video channel, 0.25 Mc audio channel), methods of scanning, polarity of transmission, modulation methods (AM for video transmission and FM for audio), radiation polarity (horizontal for electric field), the black level, the separation of audio and video carrier frequencies, and others.

The picture ratio was fixed at 4 to 3, with a reservation for a future change of 11 to 8, so as to conform with motion-picture standards.

"The resolving capacity of a TV system determines the geometric definition of the image, i.e., the number of small elements n in each frame discernible to the eye, which in turn depend on the number of scan lines Z , number of fields per second n' , and the width of the pass-band Δf . The relation between these values for interlaced scanning is determined as follows: $n \approx K Z (1 - \beta) ; f = \frac{Z n'}{K (1 - \alpha) (1 - \beta)}$

where M and N are the number of discernible horizontal and vertical black and white lines, respectively.

α and β are relative duration of line and frame scan fly-back, respectively.

K_v is a factor which takes into account the loss of resolution vertically, caused by the line structure of the raster.

Generally, K_v , $(1-\alpha) \approx 0.7$, $\alpha \approx 0.16$ to 0.18 , $\beta \approx 0.074$ to 0.08 , and $n' \approx 50$ according to the new standard.

For a special case, when the vertical resolution becomes equal to the horizontal, the expression for Δf becomes

$$\Delta f_{max} = \frac{2^2 n' (1-\alpha)}{4(1-\alpha)}$$

For the present standards of $\Delta f = 6\text{Kc}$, $z = 625$ lines, and $n = 50$, the values of N , M , and μ become 630, 436, and 275,000, respectively. According to the new standards, the power intake of the audio channel is from 25 to 50% of the video channel. The video signal is amplitude modulated, with negative polarity and suppressed lower side band. The audio channel has a band width of 0.25 Mc and is frequency-modulated, with maximum permissible frequency deviation of ± 50 Kc.

Sum 1274

MALEYEV, Ye.N.; YERMAKOV, D.S.

Single-beam two-frequency pyrometer for measuring flame
temperatures. Opt. i spektr. 13 no.4:598-601 0 1962.

(Pyrometers)

(MIRA 16:3)

POTASHNIKOV, Fedor Petrovich; ~~YERMAKOV, Dmitriy Vasil'yevich~~; MYAGKOV,
M.M., red.; BEADRINA, N.D., ~~tekh.red.~~

[Housing construction done by workers and employees themselves]

Stroitel'stvo domov silami rabochikh i sluzhashchikh. Ind-vo
VTsSPS Profisdat, 1958. 60 p. (MIRA 12:5)

1. Rabotniki zhilishchno-bytovogo otdela Vsesoyuznogo tsentral'nogo
soveta profsoyuzov (for Potashnikov, Yermakov).
(Construction industry)

POTASHNIKOV, Fedor Petrovich; YERMAKOV, Dmitriy Vasil'yevich; KIRILLOV,
O.F., red.; GOMICHENKOVA, A.A., tekhn.rsd.

[Trade unions control of the construction of apartment houses and
buildings serving cultural and public needs] Kontrol' profsoyuzov
sa shilishchaym i kul'turno-bytovym stroitel'stvom. Moskva, Ind-vo
VTsSPS, Profindat, 1959. 100 p. (MIRA 13:3)
(Trade unions) (Construction Industry)

VOLOD'KO, Ivan Fomich, kandidat tekhnicheskikh nauk; YEMAKOV, F.L.,
redaktor; FEDOTOVA, A.F., tekhnicheskij redaktor

[Using underground water for irrigation and water supply] Ispol'-
zovanie podzemnykh vod dlia orosheniia i vodosnabzheniia. Issl. 2-oe,
dop. Moskva, Gos.issl-vo selkhoz.lit-ry, 1955. 327 p. (MLRA 9:2)
(Water, Underground)

Yermakov, F.M.

YERMAKOV, F.M.

Oxygen therapy in treating ascariasis in sanatoria. Med.paraz. i
paras.bol.supplement to no.1:66 '57. (MIRA 11:1)

1. Is sanatoriya "Fontan" Ukrpromstrakhsoveta.
(OXYGEN-THERAPEUTIC USE)
(ASCARIDS AND ASCARIASIS)

KUDINOV, V.A.; KEDROV, S.S.; YERMAKOV, G.A.

Vibration of double-sided vertical boring and turning lathes.
Stan.1 instr. 32 no.6:17-18 Jo '61. (MIRA 14:6)
(Lathes—Vibration)

BELYAVSKIY, V.Ye.; YERMAKOV, G.A.

Dispersion and mixing equipment used in the paint industry of foreign countries. Lakokras.mat. 1 ikh prim. no.2:75-83 '64.

(MIRA 17:4)

YERMAKOV, G.I., elektronmekhanik

Joint operation of M-49 and ATS switchboards. Avtom., telesh.
1 svias 2 no.4:35-36 Ap '58. (MIRA 12:12)

1. Avtomaticheskaya telefonnaya svyas', stantsiya Gryazi
Yugo-Vostochny dorogi.
(Telephone) (Electronic circuits)

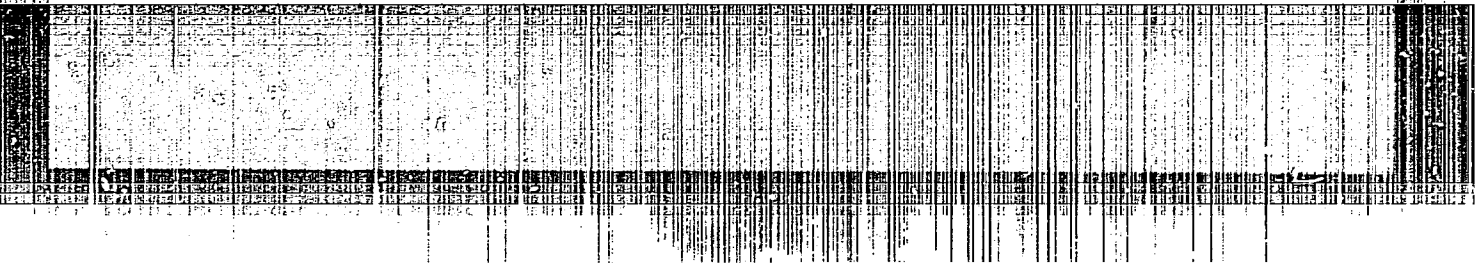
GOLUBEV, Genrikh Aleksandrovich; D'YAKONOV, Vasilii Fomich; KRASAVTSEV, Boris Ivanovich; MURMANSKIY, Feliks Nikolayevich; NASTAY, Napoleon Napoleonovich; YERMAKOV, I.G., kand. fiz.-matem.nauk, retsenzent; ZHEREBTSOV, M.N., prepodavatel', retsenzent; RYBALTOVSKIY, N.Yu., prof., red.; FRISHMAN, Z.S., red.izd-va; STUL'CHIKOVA, N.P., tekhn. red.

[Problems in nautical astronomy] Zadachnik po morekhodnoi astronomii. Leningrad, Izd-vo "Morskoi transport," 1963. 287 p.
(MIRA I7:3)

1. Arkhangel'skoye morekhodnoye uchilishche (for Zherebtsov).

"APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001962810001-3



APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001962810001-3"

YERMAKOV, G.V.

25-11-10/28

AUTHOR: Yermakov, G.V., Chief Engineer "Glavatomenergo" of the
~~Ministry for Power Plants SSSR~~

TITLE: The Mighty Power of Atoms (Moguchaya sila atoma)

PERIODICAL: Nauka i Zhizn', # 11, 1957, pp 17-22 (USSR)

ABSTRACT: The first atomic power plant in the world started operating on 27 June 1954 in the Soviet Union, it has a capacity of 5,000 kw. For this achievement the Lenin prize was awarded to the Member-Correspondents of the USSR Academy of Sciences D.I.Blochintsev, N.A.Dollezhal', A.K.Krasin, Doctor of physico-mathematical sciences and on V.A.Mallykh, Doctor of technical sciences. In the course of the sixth Five-Year Plan the construction of huge atomic power plants with capacities of about 400,000 kw is planned. For experimental purposes the power plants to be built will be operating with atomic reactors of several types of up to 200,000 kw capacity, utilizing fast and slow neutrons and neutrons of intermediate energy. They will have moderators of graphite, heavy and ordinary water. Water, gas or metal cooling systems may be used. Furthermore the construction of a reactor utilizing thorium is planned. A big atomic power plant under construction whose first unit is to

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The Mighty Power of Atoms

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produce 420,000 kw, will in 1960 form part of the united power system of the European part of the USSR. This power plant will be operated by water-water reactors. The theoretical and experimental research conducted under the supervision of academicians I.V. Kurchatov and A.P. Aleksandrov proved the efficiency of water-water reactors which are of simple construction and economical in the use of nuclear fuel. The plants will consist of two blocks, each comprising a water-water reactor with a heat capacity of 760,000 kw and three steam turbines of 70,000 kw each. The active zone of the reactors represents a metallic basket-like container with a diameter of 3 m and a height of 2.5 m in which the heat-emitting elements are fixed according to a special system. These elements are assembled in bundles each of which is installed in a zirconium tube. The weight of nuclear fuel in each reactor will equal about 40 tons, of which 23 tons will go to the share of enriched uranium containing twice as much isotope 235 than natural uranium. The remaining 17 tons of fuel will be dioxide of natural uranium.

By applying zirconium tubes, a coefficient of 0.8 can be reached at the beginning of the operation period - and at the end about 0.7. Thus per kg of "burnt" fuel (fissionable nuclei

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The Mighty Power of Atoms

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of uranium 235) 750 g of a new fuel - plutonium 239 - will originate from "non-fissionable" uranium 238. During the operation of the plant six pumps cause the circulation of distilled water under a pressure of 100 atm in the first circuit. About 30,000 cu m of water heated to 250°C pass through the reactor every hour, reaching a temperature of 275°C in the active zone and are then directed into six steam generators. Per hour the six steam generators will produce 1,380 tons of dry saturated steam at a pressure of 32 atm. There are 8 photographs.

AVAILABLE: Library of Congress

Card 3/3

1. GLAVNYI INZHENER "G. Lavrentyev"
MINISTERSTVA ELEKTROSTANTSII SSSR.

JERMAKOV, G.V.: [Yermakov, G.V.]; MEDONOS, S. [translator]

Types of atomic power plants built in the Soviet Union within the
6th Five-Year Plan. *Jaderna energije* 3 no.6:190-192 Je '57.

AUTHOR: Yermakov, G.V., Engineer.

104-2-1/38

TITLE: Problems in the design of atomic power stations. (Voprosy proektirovaniya atomnykh elektrostantsiy)

PERIODICAL: "Elektricheskie Stantsii" (Power Stations), 1957, Vol.28, No.2, pp. 1 - 9 (U.S.S.R.)

ABSTRACT: One of the main problems of modern technology is the utilisation of atomic energy. Conventional fuels are rapidly being used up and atomic energy will soon be required to take their place. It has been decided to build a number of atomic power stations during the Sixth Five Year Plan. Capitalist countries are also developing atomic energy, the 46 MW Calder Hall station being opened in 1956 and another 12 stations are due for construction in England, whilst in the USA it is proposed to build 5 atomic power stations with a total power of about 700 MW in 1957 - 60.

This article considers a number of questions that arise in the design and construction of atomic power stations considered as power undertakings, it does not deal with the design and manufacture of equipment for them. The article is arranged as follows:

Choice of construction site: Atomic power stations need not be located near a source of fuel and they will, in the first

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104-2-1/38
Problems in the design of atomic power stations. (Cont.)
place be built in regions without a local fuel supply. It will, therefore, be possible to distribute industry more uniformly over the country than at present. If biological safety can be ensured atomic power stations will be very convenient for the supply of heat to towns as they are of higher efficiency than condensing atomic stations and do not contaminate the atmosphere with combustion products. However, in the early stages, special precautions will be necessary because of the possibility of discharge of radio-active gases to the atmosphere, including the creation of health protective zones between the power stations and living quarters.
Determination of output and selection of main equipment. Just as with thermal stations large atomic power stations are more economic than small ones. The smallest convenient size of reactor is 200 MW with turbo-generators of 100 MW and more. Special steam turbines will have to be designed because reactors produce steam at lower pressures and temperatures than do existing boilers. Fuel fired superheaters are required if very efficient turbines are to be used. However, special superheater reactors or combined evaporating and superheating reactors hold promise and one will be included in a power station being built in the USSR.

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104.3.1/38

Problems in the design of atomic power stations. (Cont.)

Reactor installations. The reactors discussed are those intended only for power supply and not for the production of plutonium. Four stations are being built each with 200 MW reactors. Two of them will have heterogeneous reactors using distilled water under pressure as moderator. The stations will contain turbines of 70 MW using saturated steam at 29 atm., the pressure in the primary water circuit being 100 atm. Each reactor is associated with three turbo-generator block units and primary circulating systems. The water in the primary circuit is blown down to avoid excessive radio-activity build-up. Evaporated steam is returned to the system and radio-active wastes are held in long term storage.

The second type of power station uses graphite as moderator, the heat is removed by distilled water and steam. This type of reactor is very similar to that in the first power station of the Academy of Science. Because of the high temperature of the primary steam the secondary steam supplied to the turbine is at a pressure of 90 atm. and is superheated to a temperature of 500 C. Normal turbo-generators are used, and the overall efficiency is about 36%.

Card 3/6 The third type of station also uses a heterogeneous reactor with heavy water as moderator. Heat is removed by carbon

Problems in the design of atomic power stations. (Cont.)
dioxide. Natural uranium is used, so the fuel cost is low. The secondary steam is at 29 atm. and 420 C. The overall efficiency is, however, not more than 20%.

In addition to these stations there will be a number of experimental stations each of 70 MW including:

A heterogeneous boiling type reactor using distilled water as moderator with steam supply direct to the turbine. A homogeneous reactor using heavy water as moderator. The atomic fuel is distributed uniformly in the heavy water in the form of a suspension. The turbines use secondary steam.

A heterogeneous reactor with graphite as moderator heat being removed by liquid sodium. The turbines operate on high steam conditions.

A heterogeneous breeder reactor employing rapid neutrons with heat removed by liquid sodium. The turbines work on steam of medium conditions.

These stations and others are being built to help in the selection of the best types of future power stations.

Requirements of the elements of reactor installations. The choice of steam conditions is discussed, stations with the highest thermal efficiency do not necessarily give the cheapest power. Stations of the first type described will produce

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104-2-1/38

Problems in the design of atomic power stations. (Cont.)

power more cheaply than those of the second type although the respective overall efficiencies are 27% and 36%. The selection of primary heat transfer medium is discussed, none of those yet used is wholly satisfactory. The selection of materials from which the pile is constructed is discussed, the production of envelopes for the active material is most important.

Questions of choice of type of reactor. The merits of reactors working on natural uranium and breeder reactors with enriched fuel are discussed. Enriched fuel is very expensive and will probably not be much used at first. Much can be done by appropriate design of reactors and the use of homogeneous reactors appears promising; there are notable advantages in using the fuel in liquid form, but there is still some risk in having large quantities of radio-active materials at high temperature and pressure.

Reliability and safety of operation of reactors. To avoid reactors running away they should have a negative reactivity factor; those with liquid moderators are usually of this kind. Calculation of self-regulation is difficult and it is best determined by trial. Shielding should be adequate. Various kinds of accidents may occur such as leakage of heat transfer medium, failure of power supply or control systems or damage to

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Problems in the design of atomic power stations. 104-2-1/38
active elements. Another class of accidents includes discharge
of excessive quantities of radio-active gas or substance and
explosion of reactors. Methods of preventing these accidents
are described.

Radio-active products of reactors: this gives a general
discussion of radio-activity and disposal of radio-active
wastes.

Special features of operation. The design of atomic plant
is affected by the fact that certain parts of it are inaccess-
ible for long periods.

Primary circuit equipment. When primary or secondary steam
is used in the turbines the heat exchangers and similar equip-
ment give rise to no special problems but systems using liquid
metals have special features. Special pipes must be used in
the heat exchangers and so on. Various special pumps are used
both for primary water and for liquid metals.

Economic questions. This brief discussion of the economics
of atomic energy is based on American data.

Card 6/6 There are 6 figures.

AVAILABLE:

PHASE I BOOK EXPLOITATION 887

Yermakov, Georgiy Viktorovich

Moshchnyye atomnyye elektrostantsii (High-Powered Nuclear Power Plants)
Moscow, Izd-vo "Znaniye", 1958. 31 p. (Series: Vsesoyuznoye
obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy.
Seriya IV, 1958, no. 18) 47,000 copies printed.

Sponsoring Agency: Vsesoyuznoye obshchestvo po rasprostraneniyu
politicheskikh i nauchnykh znaniy.

Ed.: Faynboym, I.B.; Tech. Ed.: Trofimov, A.V.

PURPOSE: This book is intended for the general reader.

COVERAGE: The author discusses the construction of large industrial
plants in the USSR. A detailed description is given of graphite-
water and water-moderated water-cooled reactors used in the USSR.
The author gives information about atomic reactor construction in
the U.S.A., Great Britain and France. No personalities are men-
tioned. There are no references.

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High-Powered Nuclear Power Plants 887

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Utilization of Atomic Power Installations	3
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Atomic Power Plant With Water-moderated Water-cooled Reactor	7
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AVAILABLE: Library of Congress	30

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11-28-58

Card 2/2

YERMAKOV, G.V. (Moskva)

Development of atomic power plants in the U.S.S.R. Fiz. v shkole 19
no.1:29-42 Ja-F '59. (MIRA 12:3)
(Atomic power plants)

37

L 18323-63 EPF(c)/RWT(m)/BDS Pr-4 RM/MW
ACCESSION NR: AP3004992 S/0076/63/037/008/1925/1927

59
58

AUTHORS: Skripov, V. P.; Ermakov, G. V.

TITLE: Practicable superheating of liquids

SOURCE: Zhurnal fiz. khimii, v. 37, no. 8, 1963, 1925-1927

TOPIC TAGS: superheating, superheating of liquid

ABSTRACT: Results are reported on the determination of practicable limits of superheating hydrocarbons at atmospheric and near critical pressures according to methods of H. Wakenshima and K. Takata (J. Phys. Soc. Japan, 13, 1958, 678) and V. P. Skripov and V. I. Kukushkin (Zh. fiz. khimii, 35, 1961, 2811). Experimental temperature limits agreed with values calculated from Doering-Volmer formula. Near the critical conditions ($p = 0.7 p_x$, $t_x = 196.60$) however, data could not be obtained because the droplets lose their explosive character. On $p - t$ coordinates, the line of superheating limits is almost straight for n-pentane. The values for n-hexane and n-heptane are practically on the same line. Orig. art.

Card 1/2

L 18323-63

ACCESSION NR: AP3004992

has: 1 table.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova,
Sverdlovsk (Ural polytechnic institute)

SUBMITTED: 19Nov62

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 003

Card 2/2

SKRIPOV, V.P.; YERMAKOV, G.V.

Pressure dependence of the ultimate superheating of liquids.
Zhur. fiz. khim. 38 no.2:396-404 F 64. (MIRA 17:8)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

YEIKMAKOV, G.V., Inzh.

Problems in the development of nuclear power engineering. *Templ-*
energetika 11 no.6:2-4 Je '64. (MIRA 18:7)

1. Gosudarstvennyy proizvodstvennyy komitet po energetike i
elektrifikatsii SSSR.

ACC NR: AP7006234

(N)

SOURCE CODE: UR/0076/67/041/001/0077/0081

AUTHOR: Yermakov, G. V.; Skripov, V. P.

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Saturation line, critical parameters, and attainable superheating of perfluoroparaffins

SOURCE: Zhurnal fizicheskoy khimii, v. 41, no. 1, 1967, 77-81

TOPIC TAGS: critical pressure, critical temperature, fluorinated hydrocarbon, alkane

ABSTRACT: The saturated vapor pressures and critical parameters T_c and p_c were measured statistically for six liquid perfluoroparaffins (perfluoropentane, perfluorohexane, perfluoroheptane, perfluorooctane, perfluorononane and perfluorodecane). The method of supernatant droplets was used to measure the temperatures of attainable superheating at pressures from atmospheric to $p \approx 0.7 p_c$. It was found that ϕ paraffins follow the law of thermodynamic similitude between normal and fluorinated paraffins. The potential parameters of the substances studied depend almost linearly on the number of carbon atoms in the paraffin molecule. The weakening of intermolecular interaction upon substitution of hydrogen atoms with fluorine in paraffins is estimated. Authors thank V. V. Firsov for his assistance. Orig. art. has: 4 figures, 2 tables and 1 formula.

SUB CODE: 07/ SUEM DATE: 12Jul65/ ORIG REF: 008/ OTR REF: 002 UDC: 541.123
Card 1/1

DEMSHIN, V.Ya.; YERMAKOV, G.V.

Operation of a foam dust collector under the condition of preliminary steam condensation on dust particles. Zhur.prikl. khim. 38 no.3:691-693 Mr '65. (MIRA 18:11)

1. Ivanovskiy khimiko-tekhnologicheskii institut. Submitted Febr. 1, 1963.

YERMAKOV, I.A.; MAKARIN, P.P., insh.

New developments in techniques. Tekst.prom. 20
no.5:59-62 Ny '60. (MIRA 13:8)

1. Zamestitel' glavnogo inzhenera Kamenskogo pryadil'no-
tkatskogo kombinata "Krasnoye szanya" (for Yermakov).
(Spinning)

YERMAKOV, I. A

Ways of increasing labor productivity on state farms. Vop.ekon.
no.6:141-144 Jo '57. (Krasnodar Territory--Grain) (MLRA 10:7)

YERMAKOV, Ivan Afanas'yevich

YERMAKOV, Ivan Afanas'yevich; KHUDOKORMOV, G.H., red; QUINTSOVA, A.S.,
red. 1st-va; PIRVA, L., tekhn.red.

[State farms in the U.S.S.R.] Sovkhoz v SSSR. Moskva, Gos. 1st-vo
"Sovetskaya nauka," 1957. 36 p. (MIRA 11:2)
(State farms)

YERMAKOV, I.G., inzhener-geolog

Engineering geology characteristics of loess soils in the
area of the Novosibirsk-Barnaul railroad line. Trudy
NIIZHT no. 22:57-69 '61 (MIRA 19:1)

YERMAKOV, I.G.; SHAROV, V.I.

Relationship between the deformation modulus of West Siberian
dusty sands and the porosity coefficient. Trudy NIIZET no.28:
151-154 '62. (MIRA 16:11)

YERMAKOV, I.G. (Novosibirsk)

Conference in Novosibirsk on the exchange of experiences in engineering
and geological work. Osn., fund. i mekh. grun. 6 no. 6:28-29 '64.
(MIRA 18:1)

YERMAKOV, I.N.

SIMAKIN, A.M.; BORISSOV, A.M.; GRIBKOV, V.K.; AFONITOSIN, N. [Afonitoshin, V.N.]; TSUDESSOV, I.D. [Chudesov, I.D.]; ~~YERMAKOV, I.N.~~
[Yermakov, I.N.]; PALU, A. [translator]; ~~ORA, K., red.;~~
ZINBERG, K., tekhn. red.

[Technology of the servicing of the GAZ-51 automobile in agricultural use] Auto GAZ-51 tehnilise teenindamise tehnoloogia põllumajanduses. Tallinn, Eesti riiklik kirjastus, 1962. 79 p.
Translated from the Russian. (NIRA 15:5)
(Automobiles--Maintenance and repair)

ARTEM'YEV, Yu.N., kand. tekhn. nauk; ASTVATSATUROV, G.G., inzh.;
 BARABANOV, V.Ye., inzh.; BARYKOV, G.A., inzh.; BLIKOVATYY, S.I.,
 inzh.; GALAYEVA, L.M., inzh.; GAL'PERIN, A.S., kand. tekhn. nauk;
 GAL'CHENKO, I.I., inzh.; GONCHAR, I.S., kand. tekhn. nauk;
 DEGTYAREV, I.L., kand. tekhn. nauk; DYADYUSHKO, V.P., inzh.;
~~YERMAKOV, I.N., inzh.~~; ZHOTKEVICH, T.S., inzh.; ZUSMANOVICH, G.G.,
 inzh.; KAZAKOV, V.K., inzh.; KOZLOV, A.M., inzh.; KOROLEV, N.A.,
 inzh.; KRI'YENKO, P.M., kand. tekhn. nauk; LAPITSKIY, M.A., inzh.;
 LEBEDEV, K.S., inzh.; LIBERMAN, A.R., inzh.; LIVSHITS, L.G., kand.
 tekhn. nauk; LOSEV, V.N., inzh.; LUKANOV, M.A., inzh.; LYUBCHENKO,
 A.M., inzh.; MAMEDOV, A.M., kand. tekhn. nauk; MATVEYEV, V.A.,
 inzh.; ORANSKIY, N.N., inzh.; POLYACHENKO, A.V., kand. tekhn.nauk;
 POFOV, V.P., kand. tekhn. nauk; PUSTOVALOV, I.I., inzh.;
 FYTCHENKO, P.I., inzh.; PYATETSKIY, B.G., inzh.; RABOCHIY, L.G.,
 kand. tekhn. nauk; ROL'BIN, Ye.M., inzh.; SELIVANOV, A.I., doktor
 tekhn. nauk; SEMENOV, V.M., inzh.; SKOROKHOD, I.I., inzh.; SLABODCHIKOV,
 V.I., inzh.; STORCHAK, I.M., inzh.; STRADYNOV, F.Ya., kand. tekhn.
 nauk; SUKHINA, N.V., inzh.; TIMOFEYEV, N.D., inzh.; FEDOSOV, I.M.,
 kand. tekhn. nauk; FILATOV, A.G., inzh.; KHODOV, L.P., inzh.;
 KHROMETSKIY, P.A., inzh.; TSVETKOV, V.S., inzh.; TSEYTLIN, B.Ye.,
 inzh.; SHARAGIN, A.M., inzh.; CHISTYAKOV, V.D., inzh.; EUD'KO, V.A.,
 red.; PESTRYAKOV, A.I., red.; GUREVICH, M.M., tekhn. red.
 [Manual on the repair of machinery and tractors] Spravochnik po card)
 remontu mashinno-traktornogo parka. Pod red. A.I.Selivanova.
 Moskva, Sel'khozizdat. Vols.1-2. 1962. (MIRA 15:6)
 (Agricultural machinery—Maintenance and repair)
 (Tractors—Maintenance and repair)

YERMAKOV, I.P.

Method of cytochemical determination of histones with the aid
of Fast Green. Fiziol. rast. 12 no.5:939-940 S-O '65.

(MIRA 19:1)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR, Moskva.

KAKHIDZE, N.T.; YERMAKOV, I.P.

Response of *Elodea densa* cells to the action of gibberellic acid. *Fiziol. rast.* 11 no.5:914-916 S-O '64.

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow. (MIRA 17:10)

YERMAKOV, I.F.

Cytochemical study of proteins and nucleic acids in the process of gall development on willow leaves. Nauch. dokl. vyzh. shkoly; biol. nauki no.1:156-159 '65. (MIRA 18:2)

1. Rekomendovana kafedroy fiziologii rasteniy Moskovskogo gosudarstvennogo universiteta.

YERMAKOV, I. S.; SALAMATOV, I. I.; SHAKHOV, F. M.; and SHULIKOV, Ya. V.

"Principles and Methods of Normalization and Unification in Chemical Machine Building," Standart., No 3, pp 9-22, 1954

Translation M-313, 30 Mar 55

YERMAKOV, I.S., inzh.

Relay for preventing short circuits due to the zero wire break.
Bez.truda v prom. 6 no.1:35 Ja '62. (MIRA 15:1)
(Electric relays) (Short circuits--Safety measures)

YERMAKOV, I.S. [Iermakov, I.S.]

Ways to secure the supply of chemical industries with heat
exchanging apparatus. Khim.prom. [Ukr.] no.2:16-38 Ap-Ja
'65. (MIRA 18:6)

YERMAKOV, I.S.

Standardization of chemical equipment. Standartizatsia 28
no.5:8-12 My '64. (MIRA 17:12)

1. Direktor Ukrainskogo nauchno-issledovatel'skogo instituta
khimicheskogo mashinostroyeniya.

BORISOV, G.A., red.; YERMAKOV, I.V., red.; YERMOLIN, M.A., red.;
MALAFEYEV, R.I., red.; SERGEYEV, P.A., red.; FEDOROV,
I.V., red.

[Collection of articles on scientific methodology; physics
and mathematics faculty] Nauchno-metodicheski sbornik;
fiziko-matematicheskii fakul'tet. Kurga, 1962. 238 p.
(MIRA 16:12)

1. Kurgan. Gosudarstvennyy pedagogicheskiy institut.
(Physics--Study and teaching)
(Mathematics--Study and teaching)