L 9497-66

ACC NR: AP6000193

of 80—100 torr. At this pressure and at a pump power of 1600 j, the average output energy of the CF_3I laser was 10^{-2} j and the peak power, approximately 1 kw. Up to a pump energy of 1600 j, the output energy was a linear function of the pump energy. In another series of experiments with an elliptical lamp, dielectric coated mirrors, and an effective cell and lamp length of 250 mm, the threshold for oscillation decreased by more than a factor of two. For the CF_3I laser, the threshold reached a minimum at about 80 j at a pressure of 10—20 torr. In the case of the CH_3I laser, the threshold was at a minimum at a pressure of less than 1 torr. From the standpoint of high power output CF_3I appears to be more promising than CH_3I since higher power output is obtained at higher pressure. Orig. art. has: 3 figures.   [CS]

SUB CODE: 20/ SUBM DATE: 02Jun65/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS:
4162

Card 2/2

L 9497-66   EWA(k)/FBD/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h)   SCTB/IJP(c) WG

AUTHOR: Andreyeva, T. L.; Dudkin, V. A.; Malyshev, V. I.; Mikhaylov, G. V.;
Sorokin, V. N.; Novikova, L. A.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy
institut Akademii nauk SSSR)

TITLE: Photodissociation laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 5, 1965,
1408-1410

TOPIC TAGS: laser,   gaseous state laser, photodissociation

ABSTRACT: The authors investigated the dependence of the oscillation threshold and
the pulsed energy output of a photodissociation laser based on CH_3I or CF_3I (recently
fabricated by J. V. V. Kasper and G. C. Pimental [Applied physics letters, v. 5,
no. 11, 1964, p. 231]) on the pressure of the gaseous CH_3I or CF_3I. In the first
series of experiments, the authors used a 50-cm-long argon-filled flash tube with a
50-µf capacitor bank (voltage 2—10 kw). A 60-cm-long quartz tube with a 7-mm inner
diameter equipped with Brewster-angle windows was used as the laser tube. The flash
tube and the adjacent laser tube were wrapped in aluminum foil. A confocal cavity
formed by two concave gold-surfaced mirrors (radius 1 m) was used in the experiments.
The output energy of the CF_3I laser pulse was observed to reach a peak at a pressure

Card   1/2

TUROVTSEVA, Z.M. [deceased]; MALYSHEV, V.I.; NOSKOV, A.S.

Determination of nitrogen and oxygen in UF_6. Zhur. anal. khim.
20 no.12:1353-1358 '65.

1. Submitted April 21, 1964.
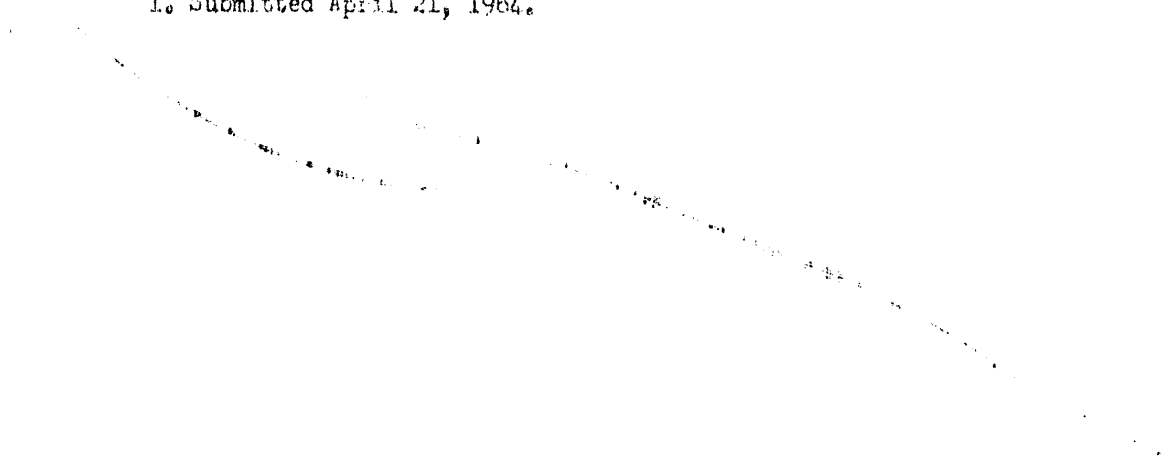
L 23361-66 EWT(m)/EWP(t) IJP(c) JD/JG

ACC NR: AP6008698   SOURCE CODE: UR/0075/65/020/011/1214/1218

AUTHOR: Malyshev, V. I.; Turovtseva, Z. M. (Deceased); Litvinova, N. F.

ORG: none

TITLE: Determination of hydrogen in lithium

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 11, 1965, 1214-1218

TOPIC TAGS: hydrogen, lithium, gas analysis, metal analysis

ABSTRACT: A method for determining hydrogen in metallic lithium, involving vacuum fusion and analysis of the hydrogen evolved, is described. The forms in which hydrogen is present in lithium (hydroxide, hydride, absorbed hydrogen) are discussed on the basis of earlier studies. Special experiments with known amounts of LiOH and LiH showed the complete evolution of hydrogen under the conditions employed. A technique was worked out for taking lithium samples and charging them into the analytical apparatus without allowing them to come in contact with the atmosphere, thus avoiding surface contamination. The design of the molybdenum crucible employed also excludes the air. Analysis conditions provided for a complete evolution of hydrogen from lithium independent of the type of compound formed by hydrogen with the metal. The sensitivity of the method is 0.01%. Orig. art. has: 1 figure, 1 table.

SUB CODE: 07,11/ SUBM DATE: 27Jun64/   ORIG REF: 001/   OTH REF: 003

                                          UDC: 543.70

Card 1/1

L 24284-66

ACC NR: AP6007007

the requirement that the excited thallium atom concentration be linearly dependent on the excitation source power. Although in principal excitation processes with trans-fer energy from a molecule to an atom are possible, none have been observed as yet. The authors therefore suggest also a one-quantum process which could lead to the formation of excited thallium atoms, namely photodissociation of the hydride molecule TlH($Tl + h\nu \rightarrow Tl^* + H)_3$ and of the quasi-molecule $TlNH_3$ which results from the chem-ical interaction of thallium with hydrogen or with ammonia respectively. Although the observed decrease in the amount of ammonia in the thallium cell under irradiation by a mercury lamp may indicate that a chemical interaction occurs between the thal-lium atoms and the ammonia molecules, the experiments show that the same occurs for pure ammonia. It is therefore deduced that the experiments confirm the hypothesis that the principal atomic excitation is due in this case to sensitized fluorescence, with transfer of excitation from the ammonia molecule to the thallium atom. The authors thank P. A. Bazhulin for discussing the results and A. N. Terenin for valu-able suggestions. Orig. art. has: 1 figure and 1 formula.

SUB CODE: 20/   SUBM DATE: 10Apr65/   ORIG REF: 003/   OTH REF: 002

Card 2/2 H

L 24284-66   EWT(m)/EWP(t)   IJP(c)   JD

ACC NR: AP6007007

SOURCE CODE: UR/0051/66/020/002/0333/0334

AUTHOR: Andreyeva, T. L.; Dudkin, V. A.; Malyshev, V. I.; Sorokin, V. N.

ORG: none

TITLE: The excitation of thallium atoms by interaction with ammonia molecules

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 333-334

TOPIC TAGS: thallium, ammonia, light emission, spectral line, light excitation, fluorescence

ABSTRACT: This is a continuation of an earlier investigation (Opt. i spektr. v. 19, 177, 1965) of the effect of impurities on the intensity and width of thallium atomic emission lines, where it was observed that addition of ammonia greatly increases the intensity of the 3519 Å line, corresponding to the $^6D_{5/2} \to {}^6P_{3/2}$ transition, without affecting the intensity of the other lines. To clarify this phenomenon further, the authors investigated the emission spectrum of atomic thallium in the presence of ammonia molecules when irradiated by a mercury lamp. The results have shown that the selective excitation of the $^6D_{5/2}$ level of thallium depends on the interaction of the excited ammonia molecule with a thallium atom, and is not related to the presence of Tl molecules. An analysis of various possible mechanisms for the selective excitation of the $^6D_{5/2}$ atomic-thallium level, aimed at explaining the observed phenomena, shows that the mechanism of sensitized fluorescence with transfer of excitation energy from the ammonia molecules to the thallium atoms comes closest to satisfying

Card 1/2

UDC: 539.196.3

ANDREYEVA, T.L.; MALYSHEV, V.I.

Dependence of the parameters of infrared absorption bands on
viscosity. Opt. i spektr. 19 no.2:215-216 Ag '65.
(MIRA 18:8)

L 5451-66
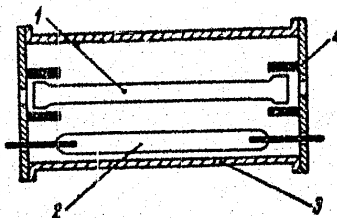ACCESSION NR: AP5019751   ENCLOSURE: 01

Fig. 1.   Diagram of experimental setup.

1 - Cell, 2 - exciting source, 3 - housing,
4 - heated holders.

Card 3/3

L 5451-66
ACCESSION NR: AP5019751

2/

pressure from 0 to 720 mm Hg. The broadening of the cross section, due to elastic collision of the thallium atoms with the hydrogen molecules, was found to be 10^{-14} cm^2, which does not differ much from the values obtained for collisions between alkaline metals and molecular hydrogen. "We thank R. A. Bazhulin, B. G. Rautian, and I. I. Sobel'man for useful discussions and advice, and I. S. Marshak and his co-workers D. A. Goukhberg and G. N. Semenova of the Moskovskiy elektrolampovyy zavod (Moscow Electric Bulb Plant) for preparing the lamps." Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 11Jun64   ENCL: 01   SUB CODE: OP, NP

NR REF SOV: 009   OTHER: 002

Card 2/3

L 5451-66   EWT(l)/EWT(m)/T/EWP(t)/EWP(b)   IJP(c)   JD

ACCESSION NR: AP5019751   UR/0051/65/019/002/0177/0180

                                                           539.196.3

AUTHOR: Dudkin, V. A.; Andreyeva, T. L.; Malyshev, V. I.; Sorokin, V. N.

TITLE: Broadening of emission lines of thallium by molecular hydrogen

SOURCE: Optika i spektroskopiya, v. 19, no. 2, 1965, 177-180

TOPIC TAGS: thallium, emission line, line broadening, hydrogen, pressure effect

ABSTRACT: The broadening of the 5350 and 3776 Å emission lines of thallium by
molecular hydrogen was investigated using thallium atoms excited by photodissocia-
tion of Tl-I molecules. The procedure was to irradiate a quartz cell containing
the gas by means of an external source (PRK-2 mercury lamp), and to measure the
width of the excited-atom lines as a function of the pressure and of the type of
gas. A diagram of the experimental setup is shown in Fig. 1 of the enclosure. The
hydrogen pressures ranged from 0 to 720 mm Hg. The photodissociation was excited
as a result of absorption of the 2002, 1972, and 1942 Å mercury lines by the Tl-I
molecules. The Tl-atom fluorescence spectra were obtained with an ISP-28 spectro-
graph crossed with a Fabry-Perot etalon. The 5350 and 3776 Å line profiles were
determined by photographic photometry. A linear variation of the width of both
lines approximately from 0.1 to 0.75 cm⁻¹ was observed on changing the hydrogen

Card 1/3

DUDKIN, V.A.; MALYSHEV, V.I.; RAUTIAN, S.G.

Studying hydrogen bonds in the critical temperature region of
some substances. Opt. i spektr. 18 no.6:984-989 Je '65.
(MIRA 18:12)

L 11142-66

ACC NR: AP6000022

the emission threshold by a factor of three. The actual path of the beam within the specimen was determined by studying the distribution of radiative energy in the near and far zones. It was found that the beam follows a closed three-dimensional path within the laser. The time relationship between various points in the far zone was also studied. "In conclusion we thank P. A. Bazhulin for constant interest in this work, and S. G. Rautian for useful consultation." Orig. art. has: 2 figures and 2 formulas. [14]

SUB CODE: 20/   SUBM DATE: 23Feb65/   ORIG REF: 004/   OTH REF: 003

ATD PRESS: 4173

Card 2/2

L 11142-66   EWP(e)/EWT(m)/EWP(b)   WH

ACC NR: AP6000022

AUTHOR: Malyshev, V. I.; Markin, A. S.; Petrov, V. S.

ORG: none

TITLE: Investigation of emission in extra-axial directions in cylindrical specimens of neodymium glass

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 5, 1965, 415-420

TOPIC TAGS: neodymium, optic glass, solid state laser, laser emission

ABSTRACT: This paper gives the results of a systematic experimental investigation of laser emission in extra-axial directions. The specimens were cylindrical and square glass rods with semi-reflecting ends and highly polished lateral surfaces. Optically uniform neodymium glass was used. Emission on a wavelength of 1.06 μ was recorded both photoelectrically and photographically. Distribution of radiative energy on the end of the specimen takes the form of rings, with no emission in the axial modes at pumping energies slightly higher than the emission threshold value (20%). Increasing the pumping energy leads to the appearance of more rings with a different emission threshold for each of them. Emission was observed at considerable angles to the axis of the specimens (up to 70°). When the lateral surfaces of the specimens were properly finished, no axial emission was observed even when the pumping energy exceeded

UDC: 535.89

Card 1/2

L 1382-66

ACCESSION NR: AP5021487

terference between the fundamental and azimuthal modes were observed in the range from 0 to 1.5 Mcs. The low-frequency beats are attributed to non-ideal resonator characteristics. A large number of difference frequencies were recorded between 50 kcs and 1.5 Mcs. Variation of the mutual placement of the mirrors changes the intensity and frequency of the beats. An appreciable part of the beats decreased in intensity when unpolarized emission from the laser was applied to the photocathode. The beat intensity exhibited a strong dependence on the degree of limitation other than that produced by the laser diaphragms or the elements of the optical system. The observed dependence of the beat intensity and of their spectral composition on the degree of beam limitation is attributed to the presence of out-of-phase oscillations in the laser beam for the azimuthal oscillation mode, and to the time-variation of the interference pattern when the beam is limited in the focus of the lens. Orig. art. has: 3 figures and 2 formulas.   [02]

ASSOCIATION: None

SUBMITTED: 15Oct64   ENCL: 00   SUB CODE: EC

NO REF SOV: 001   OTHER: 002   ATD PRESS: 4099

Card 2/2

L 1382-66   EBC(k)-2/FBD/EWT(1)/EWA(k)-2/EWP(k)/EWA(m)-2/EWA(h)/T   IJF(c)/BCTB
ACCESSION NR: AP5021487   WG   UR/0368/65/003/002/0123/0127

AUTHOR: Belousova, I. M.; Malyshev, V. I.; Ochelenkov, V. M.

TITLE: Investigation of the spectrum of beats between the modes of a gas laser with a confocal type resonator

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 2, 1965, 123-127

TOPIC TAGS: gas laser, laser radiation spectrum, laser pulsation, laser beam, cavity resonator

ABSTRACT: The beat-spectrum investigation was made for a helium-neon laser operating at 632.8 nm with a cavity made up of one spherical and one plane mirror, the latter being in the focal plane of the former. The distance between mirrors was 2 meters, the accuracy of the mirror angle adjustment about 30", and the surface finish accuracy was approximately 0.05 of a fringe. The spectrum was analyzed with an FEU-12A photomultiplier (used as a square-law detector), a broadband amplifier, and a spectrum analyzer (8h-8). Beats with frequencies 20 kcs—6.5 Mcs could be registered. The presence of beats at frequencies lower than 20 kcs could be determined from the line broadening of the initial response of the spectrum analyzer. Both polarized and unpolarized laser radiation was investigated. Beats due to in-

Card 1/2

L 38162-66
ACCESSION NR: AP5019539

in pulsewidth, and at L_{eff} = 300 cm the pulsewidth was ∿350 nanosec. At L_{eff} = 55 cm, a pulsewidth of ∿10 nanosec. corresponded to a quintuple passage of a quantum between mirrors. The results indicate that the pulsewidth is practically critical and is determined by the L_{eff} and not by the switch. The switching time was less than 10 nanosec. A further reduction of L_{eff} and an increased initial inverse population on the metastable level will result in even shorter single pulses. Orig. art. has 1 figure.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 04May65

ENCL: 00

SUB CODE: EC

OTHER: 003

ATD PRESS: 4056

NO REF SOV: 004

TITLE: Neodymium-glass laser with near-critical single pulses

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu,
v. 1, no. 6, 1965, 11-14

TOPIC TAGS: neodymium laser, glass laser, Q switching, passive switching, penta-
carbocyanine, pulsewidth control

ABSTRACT: An attempt was made to find a phototropic material which would provide
switching of a neodymium-glass laser with pulsewidths near the critical. One type
of pentacarbocyanines was found to give single pulses with short duration. The ex-
periments laser consisted of a neodymium rod 120 mm in length and 12 mm in diameter.
The effective length of the resonator L_{eff} was 55 cm, which consisted of two exter-
nal mirrors with $R_1 = 99\%$ and $R_2 = 40\%$. The transmission coefficient of the solu-
tion-containing tube placed between the neodymium rod and the 99% mirror for
$\lambda = .06\ \mu$ was 40%. Under these conditions a ~10-nanosec single pulse was obtained.
With a 300 cal pumping energy the pulse power was ~50 Mw and a spark was observed at
the focus of the f = 500 mm lens. An increase in L_{eff} caused a nonlinear increase

Card 1/2

2

L 65227-65

ACCESSION NR: AP5014241

ASSOCIATION: Fizicheskiy institut Akademii nauk SSSR [Physical Institute, Academy of Sciences, SSSR]

SUBMITTED: 05Apr65

ENCL: 00

SUB CODE: EC

OTHER: 003

NO REF SOV: 000

L 65227-6 EWA(k)/FBD/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/EWP(l)/T/EWP(k)/EWP(b)/
EWA(m)-2/EWA(h) IJP(c) WG/WH
ACCESSION NR: AP5014241

UR/0386/65/001/003/0049/0052

AUTHOR: Malyshev, V. I.; Markin, A. S.; Petrov, V. S.

TITLE: Passive Q-switch in a neodymium-eloped glass laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.
Prilozheniye, v. 1, no. 3, 1965, 49-52

TOPIC TAGS: laser, neodymium glass laser, liquid Q switch, photochemical shutter,
giant pulse

ABSTRACT: A short description was presented of an experimental neodymium glass
laser system with a liquid Q-switch to produce giant laser pulses. The active
element was a neodymium glass rod, and the passive cavity Q-switching element,
a polymethine dye solution in methanol. A single symmetrical pulse of 35 nsec
duration and about 5-Mw peak was generated with a solution of about 40% trans-
mittance and a generation threshold of 3000 joules. The total energy output of
the pulse was about 7% of the total ordinary laser output at equal input energy.
Air breakdown (spark) was observed at 5-Mw power at the focus of the lens which
was located between one of the external mirrors and the recording coaxial photo-
cell. A nonsymmetrical pulse was recorded as a result of increased absorption in
the plasma formed in the discharge. Orig. art. has: 2 figures [JK]

Card 1/2

VVEDENSKIY, B.A., glav. red.; VUL, B.M., glav. red.; SHTEYNMAN,
R.Ya., zam. glav. red.; BALDIN, A.M., red.; VONSOVSKIY,
S.V., red.; GALANIN, M.D., red.; ZEHLOV, D.V., red.;
ISHLINSKIY, A.Yu., red.; KAPITSA, P.L., red.; KAPTSOV,
N.A., red.; KOZODAYEV, M.S., red.; LEVICH, V.G., red.;
LOYTSYANSKIY, L.G., red.; LUK'YANOV, S.Yu., red.;
MALYSHEV, V.I., red.; MIGULIN, V.V., red.; REBINDER,
P.A., red.; SYRKIN, Ya.K., red.; TARG, S.M., red.;
TYABLIKOV, S.V., red.; FEYNBERG, Ye.L., red.; KHAYKIN,
S.E., red.; SHUBNIKOV, A.V., red.

[Encyclopedic physics dictionary] Fizicheskii entsiklope-
dicheskii slovar'. Moskva, Sovetskaia Entsiklopediia.
Vol.4. 1965. 592 p.   (MIRA 18:1)

BAZHULIN, P.A.; MALYSHEV, V.I.; MARKIN, A.S.; RAKOV, A.V.; BAGDASAROV, Kh.S.

Luminescence and generation spectra of various CaF_2 crystals containing U^{+3} ions. Opt. i spektr. 16 no.3:536-538 Mr '64.
(MIRA 17:4)

BEREZIN, I.A.; MALYSHEV, V.I.

Determination of small amounts of hydrogen and oxygen in
metallic uranium. Zhur.anal.khim. 17 no.9:1101-1104 D '62.
(MIRA 16:2)

(Uranium—Hydrogen content)
(Uranium—Oxygen content)

AREF'YEV, I.M.; MALYSHEV, V.I.

Hydrogen bonds of hydrohalides. Opt.i spektr. 13 no.2:206-211
Ag '62.   (MIRA 15:11)
    (Hydrogen bonding)   (Hydrogen halides—Spectra)

VUKOLOV, Ye.A.; NEGOVSKIY, A.S.; ROSTOVTSEV, N.N.; KISEL'ROD, L.I.;
MALYSHEV, V.I.; IORDANOVA, Z.A.; BOCHEK, F.I.

Melting of electrocorundum in a lined casing. Prom.energ.
15 no.3:18-19 Mr '60.   (MIRA 13:6)
                    (Corundum)

LITVINOVA, N.F.; MALYSHEV, V.I.; TUROVTSEVA, Z.M.

Determination of oxygen in sodium and in the alloy Na-K. Trudy
kom.anal.khim. 10:97-102 '60.   (MIRA 13:8)
            (Oxygen--Analysis)
            (Sodium--Oxygen content)
            (Sodium-potassium alloys--Oxygen content)

SOV/48-23-10-25/39

A Vacuum Double-beam Diffraction Spectrophotometer for the Infrared Range

$5 \cdot 10^{-7}$ rad.sec^{-1}), the swing range is 20°. Figure 2 shows an absorption spectrum recorded by means of this instrument (CO at 4.56μ). The entire device weighs about one ton. The vacuum of 10^{-1}-10^{-2} torr is maintained by means of a pump of the type VN-2. The spectral width of the slit within the range of 1.5-5μ is 0.2-0.25 cm^{-1}. There are 2 figures and 5 references, 4 of which are Soviet.

ASSOCIATION: Opticheskaya laboratoriya im. G. S. Landsberga Fizicheskogo instituta im. P. N. Lebedeva Akademii nauk SSSR (Optical Laboratory imeni G. S. Landsberg of the Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

Card 2/2

.7(3), 24(7)

AUTHORS: Malyshev, V. I., Rautian, S. G.

TITLE: A Vacuum Double-beam Diffraction Spectrophotometer for the Infrared Range

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1237-1239 (USSR)

ABSTRACT: At the Opticheskaya laboratoriya im. G. S. Landsberga FIAN (Optical Laboratory imeni G. S. Landsberg of the FIAN) a spectro-photometer with high resolving power was constructed, which is described. The device consists of three main parts: The double beam condenser with the photometrical recording- and amplifying systems, the premonochromator, and the diffraction monochromator. The optical scheme of the entire device is shown by figure 1 and is discussed in detail. The condenser consists of a system of spherical (f=180 and 200 mm) and plane mirrors; the premono-chromator consists of a spherical (f=300 mm) and two plane mir-rors and LiF- or KBr-prisms; the diffraction monochromator con-sists of two spherical mirrors with f=2000 mm, one with f=50 mm, the grating, a plane mirror, and two KBr-lenses (f=540 and 700 mm). A reducer makes it possible to adjust the instrument to 11 different rotational speeds (from 5.10^{-4} to

Card 1/2

SOV/51-6-4-23/29

Use of Echelettes at Large Angles of Diffraction

double-beam diffraction infrared spectrophotometer DAIKS-F1 constructed in the Optical Laboratory of FIAN (with the help of A.M. Surov). The main monochromator is assembled using the scheme described by Ebert and Fastie (Refs 5, 6). Preliminary monochromatization was produced by an instrument using LiF or KBr prisms. The complete assembly is shown in Fig 2. The grating used was an echelette GOI number 2538 with 300 lines/mm and a "blaze" angle of 18°. To check the theoretical conclusions the rotational structure of a methane band was recorded in the region 1.7 μ. Similar measurements were made on mercury lines at 1.35, 1.39, 1.53 and 1.71 μ. In all cases good agreement between theory and experiment was obtained. It was found that on using the echelette grating with the "blaze" angle φ_2 the resolving power of the apparatus could be doubled. Furthermore, the echelette could then be used in a wider range of wavelengths. The experiments carried out showed that the echelettes prepared by F.M. Gerasimov at GOI were of sufficiently high quality for their second "blaze" angle to be used. There are 3 figures and 14 references, 7 of which are Soviet, 6 English and 1 German.

SUBMITTED: April 19, 1958

Card 2/2

24(4)   SOV/51-6-4-23/29

AUTHORS: Malyshev, V.I. and Rautian, S.G.

TITLE: Use of Echelettes at Large Angles of Diffraction (Ispol'zovaniye
              esheletta pri bol'shikh uglakh difraktsii)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 4, pp 550-555 (USSR)

ABSTRACT: Echelettes are normally used at small angles of diffraction φ, since
              otherwise the intensity of the main maxima are very small. Echelette
              grooves have a non-symmetrical triangular form shown in Fig 1. The
              main maxima are strongest when specular reflection from the groove
              sides is employed (two "blaze" angles φ_1 and φ_2, shown in Fig 1).
              Normally the φ_1 angle is used corresponding to reflection from the wider
              wide of the groove. The angle φ_1 varies between 10 and 25°. On first
              sight the use of the second "blaze" angle φ_2 seems to be inconvenient
              because the transverse section of the beam $\Delta\varphi_2$ is much smaller than $\Delta\varphi_1$.
              A detailed analysis of the question, however, snows that the use of the
              angle φ_2 has certain advantages. The authors discuss the use of an
              echelette grating in conjunction with a monochromator. Advantages of
              the "blaze" angle φ_2 are dealt with theoretically and the theory is
              confirmed by experiments. For these experiments the authors used a

Card 1/2

MALysHE v, K I

21(0),24(0)   PHASE I BOOK EXPLOITATION   SOV/3

Akademiya nauk SSSR. Fizicheskiy institut

Issledovaniya po eksperimental'noy i teoreticheskoy fizike; [sbornik]
(Studies on Experimental and Theoretical Physics; Collection of
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Ed.: I. L. Fabelinskiy, Doctor of Physical and Mathematical Sci-
ences; Ed. of Publishing House: A. L. Chernyak and V. G. Berkgaut;
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in Memory of Grigoriya Samuilovich Landsberg: I. Ye. Tamm
(Chairman), Academician; M. A. Leontovich, Academician;
P. A. Bazhulin, Doctor of Physical and Mathematical Sciences;
S. L. Mandel'shtam Doctor of Physical and Mathematical Sciences;
I. L. Fabelinskiy, Doctor of Physical and Mathematical Sciences;
P. S. Landsberg-Baryshanskaya, Candidate of Physical and Math-
ematical Sciences; and G. P. Motulevich (Secretary), Candidate of
Physical and Mathematical Sciences.

PURPOSE: This book is intended for physicists and researchers
engaged in the study of electromagnetic radiation and their role
in investigating the structure and composition of materials.

COVERAGE: The collection contains 30 articles which review
investigations in spectroscopy, sonics, molecular optics, semi-
conductor physics, nuclear physics, and other branches of
physics. The introductory chapter gives a biographical profile
of G. S. Landsberg, Professor and Head of the Department of
Optics of the Division of Physical Technology at Moscow Uni-
versity, and reviews his work in Rayleigh scattering, combat
gases, spectral analysis of metals, etc. No personalities are
mentioned. References accompany each article.

Bazhulin, P. A., V. I. Malyshev, and M. M. Sushchinskiy. The
Work of G. S. Landsberg in the Field of Molecular Spectroscopy   17

Abramson, I. S., and A. N. Mozilevskiy. Investigation of Trans-
formation Processes in an Activated Discharge Generator Opera-
ting Under Conditions of Low Arc Currents   27

Aleksanyan, V. T., Kh. Ye. Sterin, A. L. Liberman, I. M. Kuznet-
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Groups   134

Investigations of the Hydrogen Bond in Glycols and
Catechols

SOV/48-22-3-25/43

        indicates the presence of two configurations with a
different mutual orientation of the hydroxyl groups
in the molecules of these substances. The essential
feature is that in the glycol group the disturbance of the
O-H oscillations, contrary to all expectations, in-
creases with increasing distance between the hydroxyl
groups along the molecule chain. In catechols two
bands are only found in the spectra of pyrocatechin
solutions, whereas in the spectra of resorcin and of
hydroquinone only one band is found. This indicates that
the interaction of the hydroxyl groups, as was to be
expected, takes place only in the ortho-position.

ASSOCIATION: Opticheskaya laboratoriya imeni G.S.Landsberga Fizicheskogo
instituta im.P.N.Lebedeva Akademii nauk SSSR (Optical
Laboratory imeni G.S.Landsberg at the Institute of Physics
imeni P.N.Lebedev, AS USSR)

Card 3/4

Investigations of the Hydrogen Bond in Glycols and
Catechols

because of the formation of the intermolecular hydrogen
binding. It became evident that the form of these bands in
the range of the fundamental frequency differs from
that in the range of the first harmonic. In most
substances this band in the range of the first harmonic
exhibits a complicated structure with two sharply
marked maxima. Its relative intensity differs with
different compounds. Moreover, the relative intensity
is dependent upon temperature. In the range of the fun-
damental frequency this band exhibits only one maximum at
$\nu_2 \approx 3300$ cm^{-1} which corresponds to the long-wave
maximum of the band of the first harmonic. Only in re-
sorcin pyrocatechin and guaiacol this band exhibits
two maxima. In the spectra of the diluted glycol-,
pinacone-, and pyrocatechin solutions in CCl$_4$ two
comparatively narrow absorption bands of the O-H group
of the isolated molecules are observed in the range of the
fundamental frequency and in that of the first harmonic.

Card 2/4   The existence of two oscillation bands of the O-H group

SOV/48-22-9-25/45

AUTHORS: Malyshev, V. I., Murzin, V. N.

TITLE: Investigations of the Hydrogen Bond in Glycols and Catechols (Issledovaniya vodorodnoy svyazi v glikolyakh i katekholakh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 9, pp 1107 - 1108 (USSR)

ABSTRACT: The authors investigated the intra- and intermolecular hydrogen bond in a number of compounds the molecules of which contain two hydroxyl groups. These compounds were chosen in such a manner as to have different hydroxyl groups. The spectra of infrared absorption were investigated of : a) glycols: ethylene glycol, 1,3-butylene glycol, 1,4-butylene glycol, and pinacone. b) catechols: hydroquinone, resorcin, and pyrocatechin. For the sake of comparison also the spectra of chloro-ethylene hydrin, of guajacole, of o- and m-nitrophenol and of benzoin were studied. In the spectra of pure substances a wide band is found in the range of the fundamental frequency and the first harmonic which corresponds to the oscillation of the O H group. This oscillation was excited

Card 1/4

MALYSHEV V. I.

MALYSHEV, V. I.

Bocharova, A. P., Malyshev, V. I.

"Determination of the Ratio of Ionium Content to Uranium Content in Ores and Minerals" p. 35

in book Methods of Determining Radioactive Elements in Mineral Raw Materials,
1958, 68 pp

The Investigation of the Hydrogen Combination by Spectroscopical Meth-

53-2-5/9

present survey limits itself mainly to the experimental work
of G.S. Landsberg and his school. The following chapters of this
paper deals with the following subjects: The examination of the
influence of density and temperature on the oscillation of the
O-H group. The investigation of the hydrogen binding by means
of dissolving substances containing the O-H group in different
kinds of solvent (solutions of methylalcohol in neutral sol-
vents; the investigation of the influence of the dipole moment
of the molecules of the solvent; solutions of alcohol in sol-
vents; the molecules of which contain an oxygen atom; solutions
of alcohol in solvents, the molecules of which contain a nitro-
gen atom). The determination of the heat of formation of the
hydrogen combination by spectroscopical methods; the investiga-
tion of the influence of the steric factor on the association
of the "monatomic" alcohols; the investigation of the conden-
sation of water vapor (steam). There are 13 figures, and also
and 43 references, 31 of which are Slavic.

AVAILABLE: Library of Congress

Card 2/2

53-2-5/9

AUTHOR: Malyshev, V.I.

TITLE: The Investigation of the Hydrogen Combination by Spectroscopical Methods (Issledovaniye vodorodnoy svyazi spektroskopicheskimi metodami)

PERIODICAL: Uspekhi Fiz. Nauk, 1957, Vol. 63, Nr 2, pp. 323 - 353 (USSR)

ABSTRACT: The present paper furnishes a survey on the most important publications by G.S. Landsberg, his students and collaborators on the study of the internal molecular interactions by spectroscopical methods. This summary, however, makes no pretension as to completeness of treatment of all problems touched and to a systematical enumeration of publications. At the outset the substance of the spectroscopical methods of the investigations of the internal molecular interactions is discussed. The present summary is arranged as follows:

1.) The hydrogen binding and its spectroscopically distinguishing marks: The hydrogen can be examined by various physical and chemical methods. The spectroscopical methods, however, have a number of advantages, because they give access to the observation of details not accessible to other methods. The

Card 1/2

MALYSHEV, V. I,

PRIKHOT'KO, A F

24(7)   p 3   PHASE I BOOK EXPLOITATION   SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1:
Molekulyarnaya spektroskopiya (Papers of the 10th All-Union
Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy)
[L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies
printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po
spektroskopii. Ed.: Jazer, S.L.; Tech. Ed.: Saranyuk, T.V.;
Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased),
Neporent, B.S., Doctor of Physical and Mathematical Sciences,
Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences,
Fabrikant, V.A., Doctor of Physical and Mathematical Sciences,
Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M.,
Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K.,
Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S.,
Candidate of Physical and Mathematical Sciences, and Glauberman,
A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

MALYSHEV, V. I.,

"Ancient Written Records from the Pechora," Chronicles of the North; Yearbook
of Historical Geograhy, History of Geographical Discoveries and Exploration of
the North, v. 2, Moscow, Geografgiz, 1957, 279 p. (Akademiya nauk SSSR. Komnisiya
po problemam Severa).

Editorial Board: Andreyev, A. I., Belov, M. I., Burkhanov, V. F., Yefimov, A. V.
(Resp. Ed.), Chernenko, M. B. (Deputy Resp. Ed.) and Shcherbakov, D. I.; Ed.:
Vorontsova, A. I.; Tech. Ed.: Kosheleva, S. M.; Map. Ed.: Mal'chevskiy, G. N.

PURPOSE: The book is intended for readers interested in the Soviet Arctic.

COVERAGE: The present volume, the second of a series of three, is a collection
of 27 articles by various authors presenting an historical account of the ex-
ploration and economic development of the Soviet North. A small part of the
book is devoted to Arctic areas beyond the confines of the Soviet Union. The
aim of the book is to contribute to an understanding of the physical geography,
cartography, ethnography, and the economy of the Soviet North through a historical
survey of these factors. A large number of authors, explorers; scientists,
travellers, pilots, navigators, etc., are cited.

MALYSHEV, .V..I.

Chemical Abstracts
May 25, 1954
Electronic Phenomena
and Spectra

A double-beam infrared spectrophotometer. V. I. Malyshev, M. N. Markov, and A. A. Shubin. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 17, 574(1953); cf. *C.A.* 47, 6769h.—A spectrometer is described in which the measurements are made by means of an absorbing wedge on the calibration beam. A feature of this automatic spectrophotometer is the amplifier in which the main amplification is made at a frequency of 4000 cycles and a wide band and the remainder on a narrow 9-cycle band. The bridge has a 4000-cycle voltage, and the light on the bolometer is interrupted at a frequency of 9 cycles. The total amplification is 10^{10}, the noise level 10^{-3} v., and the min. detected radiation 6×10^{-9} w. The spectrum 2.5–15 μ is registered in 30, 60, or 120'. The intensity of the diffused radiation is cut down with a MgO filter to 1%. The spectrum of polystyrene on a double-beam spectrometer is compared to the same spectrum on a single-beam set up.
S. Paksman

235T102

MALYSHEV, V. I.

USSR/Physics - Infrared Spectrometer   11 Sep 52

"Automatic Infrared Spectrometer," V. I. Malyshev,
M. N. Markov, A. A. Shubin

"Dok Ak Nauk SSSR" Vol 86, No 2, pp 273-276

Discusses the familiar difficulty of rapid and
accurate measurements of coeff of absorption in
the infrared region. Describes the block scheme
of subject automatic infrared spectrometer, which
is convenient for quant and qual analysis when
combined with the use of a graduated curve ob-
tained according to standard mixts. Recording
time was 30 min in the case of nitrobenzol and
polystyrol. Submitted by Acad G. S. Landsberg
16 Jun 52.   235T102

(CA 47 no.14: 6769 '53)

USSR/Physics - Combination Scattering   Apr 50
        Chemistry - Alcohols

"Studying the Association of a Series of Saturated
Monoatomic Alcohols by the Method of Combination
Scattering of Light," V. I. Malyshev, M. V. Shish-
kins, Phys Inst imeni Lebedev, Acad Sci USSR, 7 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 4

Presents results of studies on spectra of combina-
tion scattering of monoatomic alcohol for various
temperatures. Observes that, in spectra of these
alcohols, oscillation band of OH group possesses

159T98

USSR/Physics - Combination Scattering   Apr 50
        (Contd)

two maximums with frequencies 3,400/cm and 3,630/ cm
ascribed to assocation and dissociation of these mol-
ecular spectra. Shows relative intensity of these
maximums depends upon temperature, and upon magni-
tude and structure of hydrocarbon part of alcohol
molecule. Submitted 20 Apr 49.

159T98

VUKOLOV, Ye.A.; NEGOVSKIY, A.S.; IORDANOV, Z.A.; MALYSHEV, V.I.;
    MASHNITISKIY, A.A.; KLYASHTORNYY, I.A.; RAYZ, A.B.; POLONSKIY, S.M.

Extraction of electrocorundum from bauxite agglomerate. Prom. energ.
15 no.10:16-18 O '60.   (MIRA 13:11)
                    (Bauxite)   (Corundum)

MALYSHEV, V. I.

IA 170T96

USSR/Physics - Spectroscopy   Nov/Dec 50

"Methods for Increasing the Dispersion of the Spec-
tral Apparatus," V. I. Malyshev, Phys Inst imeni
Lebedev, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIV, No 6, pp 746-752

Author was assisted in the experiments by I. I. So-
bel'man, and was guided by advice of G. S. Landsberg.
Describes method for triple passage of rays through
prism of dispersive system.

170T96

PROCESSES AND PROPERTIES INDEX

Raman spectra of higher alcohols and the hydrogen bond. V. I. Malyshev and M. V. Shishkina. *Doklady Akad. Nauk S.S.S.R.* 66, 863 6 (1949). The loosening of the H bond in alcs. with rising temp. is expressed by the appearance, at a higher temp., of an O-H line very close to the O-H frequency in the gas phase, and in a shift of the max. of the O-H band to higher frequencies. The following data give, in cm⁻¹, the frequency (and the half width) of the max. or the band at 5° and at ..., further, at 75°, the intensity of the line, the ratio of its intensity to that of the max. of the band, and the shift of the latter between 5° and 75° : EtOH (I) 3371 (310) and 3427 (380), 3632, very small, 56; PrOH (II) 3370 (300) and 3433 (315), 3631, 0.11, 63; BuOH (III) 3348 (290) and 3424 (315), 0.19, 70; $C_5H_{10}OH$ (IV) 3341 (330) and 3410 (335), 3632, 0.35, 66; $C_6H_{12}OH$ (V) 3332 (310) and 3400 (350), 3639, 0.39, 77; $C_7H_{14}OH$ (VI) 333 (375) and 3432 (355), 3630, 0.54, 90; Me_2CHCH_2OH (VII) 3365 (290) and 3429 (310), 3633, 0.22, 60; 2-methyl-2-butanol (VIII) 3343 (280) and 3415 (330), 0.30, 72; Me_3CCH_2OH (IX) 3357 (260) and 3451 (270), 3624, 0.37, 97. In pure MeOH, the line does not appear even at 65°, but does appear on diln. with CCl_4 to below 75°. At 5°, the line is absent or extremely weak in all alcs. As judged by the intensities of the O-H line, the loosening of the hydrogen bond is more marked in VII than in III, and more marked in IX than in VIII. In the series of normal alcs. I-VI, the loosening of the hydrogen bond increases with the length of the chain. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MALYSHEV, V.I.

USSR/Chemistry – Hydrogen Bond
    Chemistry – Dispersion

Jun 49

"Combination Dispersion of Light in Higher Alcbhols and the Problem of the Hydrogen Bonds," V. I. Malyshev, Shishkina, Phys Inst imeni P.N. Lebedev, Acad Sci USSR, 3 3/4pp

"Dok Ak Nauk SSSR" Vol LXIV, No 5

Studies combination dispersion spectra of ten monatomic alcohols from methyl to octyl alcohol for various temperatures. Tabulates results. Submitted by Acad G. S. Landsberg, 13 Apr 49.

PA 50/49T26

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Spectroscopic determination of the heat of the hydrogen bond. V. I. Malyshev (Lebedev Phys. Inst.). *Bull. acad. sci. U.R.S.S., Sér. phys.* 9, No. 3, 198–200(1945) (in Russian). Raman spectra of CH_3OH in very dil. (1-2%) soln. in CCl_4 show a sharp line corresponding to the OH-group vibration at 3647 cm.$^{-1}$; very highly concd. solns. and the pure liquid show, instead of the line, a broad band with a max. at about 3370 cm.$^{-1}$. At intermediate concns. the line and the band coexist. The line is assumed to correspond to unassocd. CH_3OH mols., whereas the band is due to mols. assocd. into complex aggregates through hydrogen bonding. On Raman spectrograms of a 25% soln. of CH_3OH in CCl_4, taken at 25° and 65°, the relative intensities of the OH lines were measured and considered to be proportional to the numbers of unassocd. mols. in soln. at the two temps. The total no. of CH_3OH mols., including both the single and the assocd. mols., was taken to be proportional to the intensity of the CH line in the spectrum. With the aid of the simplifying assumptions that (1) all the complex aggregates are identical, and that (2) the dissocn. follows the uniform pattern $(CH_3OH)_n = CH_3OH + (CH_3OH)_{n-1}$, it is shown that as long as the degree of dissocn. remains low (which is the case in a 25% soln.), the ratio of the degrees of dissocn. at two temps. can be deduced from the ratios of the relative intensities of the OH line and of the CH line. From the dissocn. equil. at two neighboring temps., the value of the heat of dissocn. of the complex aggregates is calcd. by van't Hoff's relation. Its mean value is 13.0 kg.-cal./mole, which is very close to the 13.5 kg.-cal. given for the heat of dissocn. of gaseous AcOH mols. commonly regarded as hydrogen-bonded. It is concluded that CH_3-OH, in the pure liquid state and in concd. soln., also associates through hydrogen bonds.   N. Thon

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

C A

Studies of the intramolecular forces by the method of dispersion of light. V. I. Malyshev. *Bull. acad. sci. U. R. S. S., Ser. phys.* 5, No. 1, 13 18 (1941); *Khim. Referat. Zhur.* 4, No. 9, 6(1941).—A review of the previous studies of M. and Ukholln on the effect of intramol. reaction (H bond) on the Raman spectra of OH-contg. substances (H_2O, MeOH and $HOCH_2CH_2Cl$ in various solvents). W. R. Henn

3

Intermolecular forces and Raman scattering. V. 1 Malyshev. *Bull. acad. sci. U. R. S. S., Ser. phys.* 4, 106-9(1940).—The method of Raman scattering permits measurement of the frequencies of intramol. oscillations, and consequently of the intramol. forces detg. these frequencies. If a mol. is subject to van der Waals forces, of the same order of magnitude as intramol. forces, their influence can be detected by study of the Raman-scattering spectra. The investigation of spectra of light scattered by solns. of CH_3OH in different solvents shows that, at small concn., the alc. mols. do not interact with one another, but interact only with the mols. of the solvent. The presence of an elec. moment in the solvent mols. affects only slightly the excitation of the O-H oscillations in the alc. mol. This is due to the fact that the moment of the solvent hampers the association of the alc. mols. The solvents whose mols. contain O and H atoms give considerable perturbation of the O-H oscillation and lead to the formation of hydrogen bond.   Roksalana Gamow

Phys. Inst. AS USSR

Diffusion by heavy-water solutions. G. S. Landsberg, V. I. Malyshev and V. E. Solov'ev. *Compt. rend. acad. sci. U. R. S. S.* 24, 872-3 (1939)(in French).—Solns. of D_2O in H_2O and acetone were studied spectrographically. The OD band was found to have a max. at $\nu = 2535$ cm.$^{-1}$ and a half width of 400 cm.$^{-1}$, becoming narrower and displaced toward the higher frequencies (max. at $\nu = 2580$ cm.$^{-1}$ and 290 cm.$^{-1}$ half width) in H_2O, and displaced further until narrower (max. at $\nu = 2600$ cm.$^{-1}$ and 130 cm.$^{-1}$ half width) in acetone. This shows that resonance effects play an important role in the perturbation phenomena of the (OD) and (OH) groups; the greater width of the OD band in water is attributed to the complicated structure of water, equiv. to a mixt. of 3 liquids at various mean intermol. distances. F. Gouet

Investigation of the frequency of the O H group in binary mixtures by the method of combination dispersion. III. Combination spectra of solutions of methanol in benzene (I), chlorobenzene (II), fluorobenzene (IV), acetone (V), dioxane (VI), ethyl ether (VII), isoamyl ether (VIII), pyridine (IX) and piperidine (X). V. I. Malyshev. Compt. rend. acad. sci. U. R. S. S. 24, 876 0(1939)(in English); cf. C. A. 33, 3602⁴.—An investigation of the dispersion spectra of 3.5, 5.0 and 10.0% alc. solns. in I gave a slight widening of the line $\nu = 3611$ cm.⁻¹ and the authors conclude that the benzene mols. hinder the assocn. of McOH more than did CCl₄. Lines for II were found at $\nu = 3630$ cm.⁻¹, and bands were found in the 20% soln. The results for IV were analogous to those in II and the authors conclude that replacing Cl by F does not affect the oscillation of O-H in the MeOH mol. Expts. with bromobenzene were unsuccessful because of its intense decompn. by light. In V, a comparatively wide band was found at $\nu = 3532$ cm.⁻¹, and the authors conclude that either because of the greater elec. moment or the pressure of an O atom, the oscillation of O-H was disturbed in a different manner from I-IV. Hence VI was used and a band appeared at $\nu = 3516$ cm.⁻¹ (being double in the 2.0 and 3.5% solns.), with no bands for assocd. MeOH mols. VII gave a max. at $\nu = 3516$ cm.⁻¹, analogously to VI. From expts. with VI, VII, VIII, the authors conclude that the O-atom and not the moment causes the disturbance of the oscillation of the O-H groups in alc. In IX and X, a max. was found at $\nu = 3408$ cm.⁻¹ for IX, showing even more disturbance by the N atom than by the O atom. The authors conclude that the solvents can be divided into 2 groups; those with O and N, and those without, where the former cause an intense disturbance, which is attributed to the formation of a H-bond between the OH group of the alc. mol. and the O or N mol. of the solvent. Frank Gönt
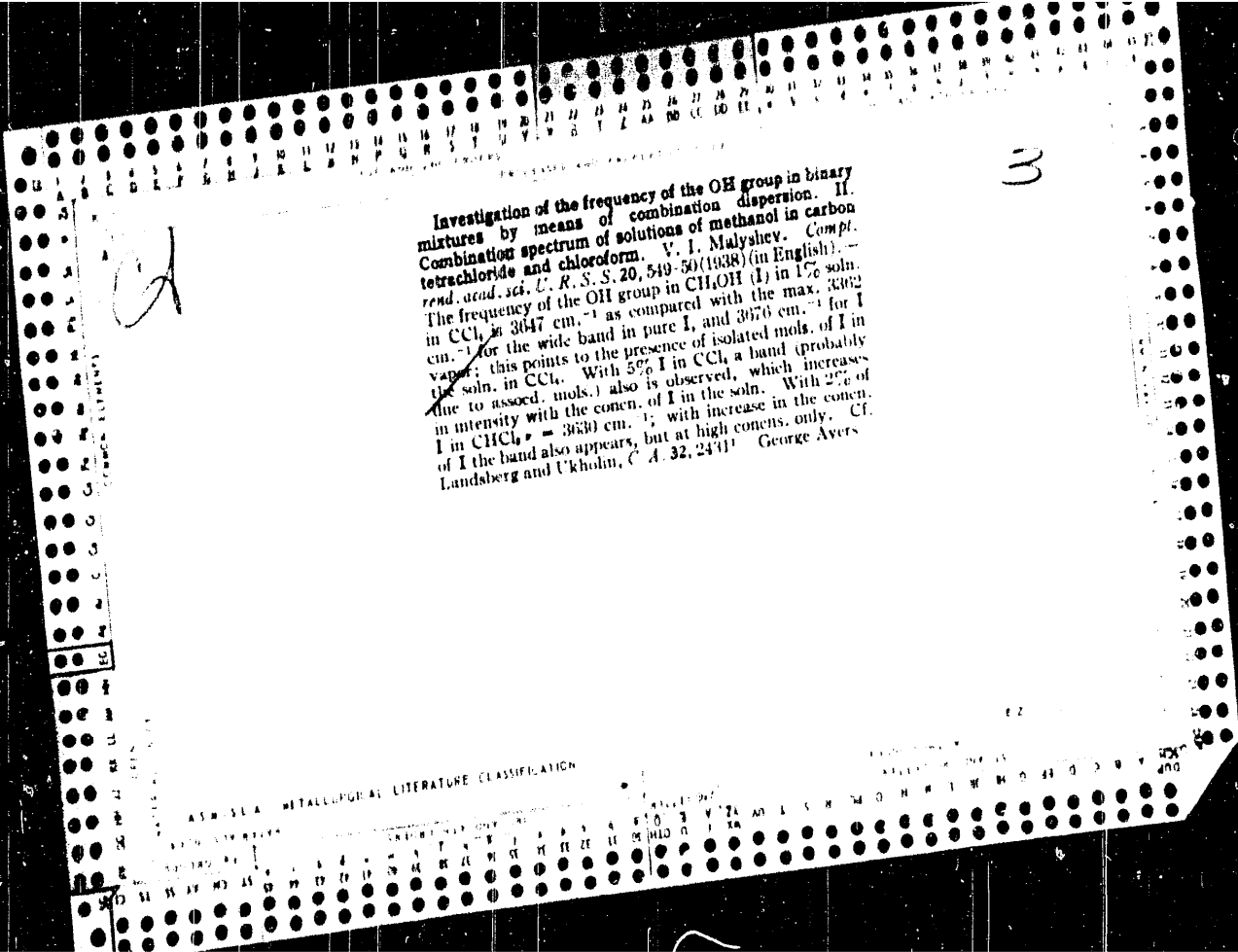
Investigation of the frequency of the OH group in binary mixtures by means of combination dispersion. II. Combination spectrum of solutions of methanol in carbon tetrachloride and chloroform. V. I. Malyshev. *Compt. rend. acad. sci. U. R. S. S.* 20, 549-50(1938)(in English). — The frequency of the OH group in CH₃OH (I) in 1% soln. in CCl₄ is 3647 cm.⁻¹ as compared with the max. 3362 cm.⁻¹ for the wide band in pure I, and 3676 cm.⁻¹ for I vapor; this points to the presence of isolated mols. of I in the soln. in CCl₄. With 5% I in CCl₄ a band (probably due to assocd. mols.) also is observed, which increases in intensity with the concn. of I in the soln. With 2% of I in CHCl₃ = 3630 cm.⁻¹; with increase in the concn. of I the band also appears, but at high concns. only. Cf. Landsberg and Ukholin, C. A. 32, 2431¹ George Avers

CA

MALYSHEV, V I

Expression of the results of chemical analyses of well waters and a method of analysis. V. I. Malyshev. *Azerbaidzhanskoe Neftyanoe Khoz.* 1938, No. 7-8, 15-17; *Khim. Referat. Zhur.* 2, No. 3, 79(1939). The alky. of water should be expressed in 4 components: bicarbonates, carbonates, org. acids and the borate compds. Only the gravimetric method can be used for the detn. of sulfates. All results of analyses must be converted to percentage by wt.   W. R. Henn

Rays of second order in the Raman spectra. G. S. Landsberg and V. I. Malyshev. (Compt rend acad sci U R S S [N S] 3, 305 8(1936).   The combinations and harmonics have been attributed from measurements of the weaker Raman lines of CCl_4 and $SnBr_4$.   With the use as fundamentals for CCl_4, $A = 217$, $B = 313$, $C = 458$, $D_1 = 760$ and $D_2 = 775$ cm.$^{-1}$, the following combinations are reported: $2A$, $A + B$, $2B$, $2C$, $A + C$, D_1, $A + D_2$, $B + D_1$, $B + D_2$, $C + D_1$, $C + D_2$, $2D_1$, $D_1 + D_2$, $2D_2$, $C - B$. The fundamentals of $SnBr_4$ were taken as $A = 64$, $B = 88$, $C = 220$, $D = 279$ cm.$^{-1}$, and the following combinations are reported: $2A$, $2B$, $D - B$, $B + C$, $B + D$, $2C$, $C + D$. Within the limits of the accuracy of the measurements ($= 3$ cm.$^{-1}$) agreement is found between expt. and the calcd. combination. The intensity of these second-order rays is about 3×10^{-3} times that of 1st-order rays.   Marked influence of temp. on the intensity of second-order rays has been noted in CCl_4 vapors at 250°.

V. Deitz

ASM·SLA METALLURGICAL LITERATURE CLASSIFICATION

MALYSHEV, V.I.

Mechansim for the displacement of a weight-control platform. Izm.
tekh. no.10:27 O'60.   (MIRA 13:10)
            (Railroads--Equipment and supplies)

MALYSHEV, V.I.

Mechanism for the displacement of a weight-control platform. Izm.
tekh. no.10:22-26 O'60. (MIRA 13:10)
(Balance) (Electric controllers)

MALYSHEV, V.I.

Determination of coefficients of readiactive equilibrium as a
method for studying the migration of uranium, ionium, and radium
[with summary in English]. Sov.geol. 1 no.7:138-147 Jl '58.
(MIRA 11:11)

1. Vsesoyuznyy institut mineral'nogo syr'ya.
(Radioactive substances)

MALYSHEV, V.G., inzh.

BTS-60 machine for boring holes in frozen ground. Stroi. i dor.
mash. 6 no.10:25-26 O '61.   (MIRA 14:10)
                    (Boring machinery)
                    (Frozen ground)

MALYSHEV, V.G., inzh.

Machine for digging foundation holes mounted on a platform car.
Mekh.stroi. 17 no.5:27-30 My '60.   (MIRA 13:7)
                (Excavating machinery)
                (Electric lines--Poles)

KANTOR, L.I.; MALYSHEV, V.G.

Machine for digging foundation pits for catenary poles.
Biul.tekh.-ekon.inform. no.7:56-59 '60.

(MIRA 13:7)

(Excavating machinery)

MALYSHEV, V.G., inzh.; MAMONTOVSKIY, V.A., inzh.; PFUL', B.Yo., inzh., red.

[Machine for boring holes in frozen ground] Mashina dlia bureniia shpurov v merzlykh gruntakh; po materialam PKB Glavstroimekhanizatsii Ministerstva transportnogo stroitel'stva SSSR. Moskva, Gosstroiizdat, 1960. 6 p. (MIRA 14:11)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.Byr.:o tekhnicheskoy informatsii. 2. Proyektno-konstruktorskoye byuro Glavnogo upravleniya po mekhanizatsii stroitel'nykh rabot Ministerstva transportnogo stroitel'stva SSSR (for Malyshev, Mamontovskiy).
(Boring machinery)   (Frozen ground)

MALYSHEV, V. G.

MALYSHEV, V.G.

Discontinue simplifying electric power supply circuits. Zhe . l
rep'. tiaga no.3:26-27 Mr '57.   (MLRA 10:6)

1. Nachal'nik otdela energeticheskogo khozyaystva Orekhovo otdele-
niya Onebey dorogi.
                        (Electric railroads)

YUREVICH, V.M.; MALYSHEV, V.D.; SHVEDOVA, I.S.

Methodology of artificial pulmonary ventilation in thoracic
surgery using a special adapter for double intubation tubules.
Nov. med. tekh. no.3:45-50 '65.   (MIRA 19:1)

MALYSHEV, V.D., kand. med. nauk

[Controlled respiration in pulmonary surgery] Upravliaemoe
dykhanie v khirurgii legkikh. Moskva, TSentr. in-t usover-
shenstvovaniia vrachei, 1965. 51 p. (MIRA 18:8)

OSIPOV, B.K., prof.; MALYSHEV, V.D., kand. med. nauk; YUREVICH, V.M., kand.
med. nauk; GUTKINA, Z.I.; GLUKOV, S.A.

Use of the artificial cough machine IK-62 in surgical practice.
Khirurgiia 40 no.7:49-55 Jl '64. (MIRA 18:2)

1. 2-ya kafedra klinicheskoy khirurgii (zav. - prof. B.K. Osipov),
kafedra rentgenologii (zav. - prof. Yu.N. Sokolov) TSentral'nogo
instituta usovershenstvovaniya vrachey i Vsesoyuznyy nauchno-issle-
dovatel'skiy institut meditsinskikh instrumentov i oborudovaniya
(dir. - I.P. Smirnov), Moskva.

MALYSHEV, V.D., kand. med. nauk

Use of controlled and auxiliary respiration in treating acute
respiratory insufficiency. Trudy TSIU 66:258-268 '64. (MIRA 18:5)

MALYSHEV, V.D., kand. med. nauk

Changes in external respiration depending on the type of
anesthesia. Trudy TSIU 59:47-61 '63.   (MIRA 17:9)

1. II kafedra khirurgii (zav.- prof. B.K. Osipov) TSentral'nogo
instituta usovershenstvovaniya vrachey.

MALYSHEV, V.D.; SERGEVNIN, V.V.

Tracheostomy as an effective measure in controlling asphyxia
caused by status asthmaticus. Vest.khir. 87 no.11:57-61 N '61.
(MIRA 15:11)

1. Iz 3-y kafedry khirurgii (zav. - prof. V.I. Kazanskiy) TSen-
tral'nogo instituta usovershenstvovaniya vrachey na baze TSen-
tral'noy klinicheskoy bol'nitsy Ministerstva putey soobshcheniya.
            (ASTHMA)   (TRACHEA--SURGERY)

MAKARENKO, T.P., prof.; SERGEVNIN, V.V.; MALYSHEV, V.D.

Principal problems of anesthesia in patients with functional
disorders of the liver. Khirurgiia no.11:20-28 '61.

(MIRA 14:12)

1. Iz 3-y kafedry khirurgii (zav. - prof. V.I. Kazanskiy)
TSentral'nogo instituta usovershenstvovaniya vrachey na baze
TSentral'noy klinicheskoy bol'nitsy (nach. - zasluzhennyy
vrach RSFSR V.N. Zakharchenko) Ministerstva putey soobshcheniya.
　　　　　(ANESTHESIA)　　　(LIVER—DISEASES)

MAKARENKO, T.P., prof.; MALYSHEV, V.D.

Features of hemodynamics during anesthesia. Khirurgiia 36 no.10: 107-112 O '60. (MIRA 13:11)

1. Iz 3-y kafedry khirurgii (zav. - prof. V.I. Kazanskiy) TSentral'-nogo instituta usovershenstvovaniya vrachey na baze TSentral'noy klinicheskoy bol'nitsy Ministerstvo putey soobshcheniya (nach. - zasluzhennyy vrach RSFSR V.N. Zakharchenko).
(BLOOD—CIRCULATION)   (ANESTHESIA)

MALYSHEV, V.D.

Hemodynamics in physical, mixed and chemical hypothermia. Nauch.
rab. asp. i klin. ord. no.6:200-210 '60.   (MIRA 14:12)

1. IV kafedra khirurgii (zav. prof. V.I.Kazanskiy) TSentral'nogo
instituta usovershenstvovaniya vrachey.
              (HYPOTHERMIA)   (BLOOD—CIRCULATION)

MALYSHEV, V. D., CAND MED SCI, "MATERIAL FOR STUDY OF

HEMODYNAMICS IN OPERATIONS UNDER VARIOUS FORMS OF ANES-

THESIA." MOSCOW, 1960. (MIN OF HEALTH USSR, CENTRAL

INST OF ADVANCED TRAINING OF PHYSICIANS). (KL, 2-61,

218).

-265-

MAKARENKO, T.P., prof.; MALYSHEV, V.D.

Intra-arterial injection of blood as a method of controlling hemo-
dynamic disorders in potentiated anesthesia. Akt. vop. obezbol.
no.2:165-170 '59.
(MIRA 14:5)

1. Iz 4-y kafedry khirurgii (zaveduyushchiy - prof. V.I.Kazanskiy)
TSentral'nogo instituta usovershenstvovaniya vrachey na baze
TSentral'noy klinicheskoy bol'nitsy Ministerstva putey soobshcheniya
(nachal'nik V.M.Zakharchenko).
(INJECTIONS, INTRA-ARTERIAL)
(BLOOD AS FOOD OR MEDICINE)
(ANESTHESIA—COMPLICATIONS AND SEQUELAE)
(BLOOD—CIRCULATION, DISORDERS OF)

MALYSHEV, V.D.

Hemodynamics in potentiated anesthesia. Akt. vop. obezbol. no.2:
48-62 '59.
(MIRA 14:5)

1. Iz 4-y kafedry khirurgii (zav. - prof. V.I.Kazanskiy) TSentral'nogo
instituta usovershenstvovaniya vrachey na baze TSentral'noy klinicheskoy
bol'nitsy Ministerstva putey soobshcheniya (nachal'nik - zasluzhennyy
vrach RSFSR V.N.Zakharchenko).
                 (ANESTHESIA)   (BLOOD)

KLIMKOVICH, I.G., MALYSHEV, V.D.

Tracheobronchoscopy using anesthesia and muscle relaxants; preliminary
report [with summary in English]. Khirurgiia 34 no.6:78-83 Je '58
                                                        (MIRA 11:8)
1. Iz 4-y kafedry klinicheskoy khirurgii (zav. - prof. V.I. Kazanskiy)
TSentral'nogo instituta usovershenstvovaniya vrachey na baze TSentral'
noy klinicheskoybol'nitsy (nach. V.N. Zakharchenko) Ministerva putey
soobshcheniya.
                (BRONCHOSCOPY, anesthesia & analgesia
                        anesth. with added musc. relaxants, technic & results
                        (Rus))
                (ANESTHESIA,
                        in bronchoscopy, added use of musc. relaxants (Rus))
                (MUSCLE RELAXANTS, therapeutic use
                        adjuvant in anesth. for bronchoscopy, technic & results
                        (Rus))

MALYSHEV, V.D., kand. istoricheskikh nauk

The Lenin plan of the State Committee for the Electrification of
Russia and how it was carried out. Trudy MADI no.26:40-69 '60.

(MIRA 15:2)

(Electrification)

MAIYUTT, V. A.

"Regulation of the Hardening Process of the Alloys and Heat Ingot

report presented at the 7th Conference on the Interaction of the Casting Mould and the Casting, sponsored by the Inst. of Technical Engineering, USSR, 29-30 January 1961.

Reduction of Metal Consumption in Casting Forging Ingots   SOV/130-58-11-7/16

    Four further ingots were cast with electrical hot top
heating: no effect of the changed hot-top configuration
on stripping was observed. Joint tests with the Zhdanovs-
kiy metallurgical institute showed that the quality of
the metal had not suffered through the considerable
reduction in the hot top volume.

    There are 2 figures and 1 table.

Card 2/2

SOV/130-58-11-7/16

AUTHORS: Malyshev, V.A., and Gorbachev, A.F., Engineers, and
           Papush, A.G., Candidate of Technical Sciences

TITLE: Reduction of Metal Consumption in Casting Forging Ingots
           (Umen'sheniye rashkhoda metalla pri otlivke krupnykh
           kuznechnykh slitkov)

PERIODICAL: Metallurg, 1958, Nr 11, pp 16 - 18 (USSR)

ABSTRACT: In 1955 electric heating of hot-tops of large carbon and
           alloy steel ingots was advantageously adopted at the im.
           Il'icha (im. Il'ich) works.   In 1957 the filling of hot
           tops was increased but further advantage was not obtained.
           The insulation of the hot top was improved by increasing
           the thickness of the refractory from 40 to 160 mm (Fig 1),
           the effectiveness of this being shown with ingots of
           nominal weights 38 and 54 tonnes of 60KhG and 55Kh steels.
           A third ingot of nominal weight 35.2 tonnes of type 55
           steel was cast with the thickest refractory in but
           without electric heating of the hot top.   The authors
           give details of these ingots (table) and show sulphur
           prints of the smaller ingots (Fig 2).   Study of these
           has shown that in all the ingots the pipe, porosity and
           crude segregation were above the body of the ingot.

Card 1/2

LAVRUKHINA, A.K.; MOSKALEVA, L.P.; MALYSHEV, V.A.; SATAROVA, L.M.;
SU KHUN-GUY [Su Hung-Kuei]

Angular distribution of Na^{24} nuclei and fission fragments
in the interaction of high energy protons with nuclei of
gold and uranium. Zhur.eksp.i teor.fiz. no.3:994-995
                                                    (MIRA 13:7)
Mr '60.

1. Institut geokhimii i analiticheskoy khimii Akademii nauk
SSSR.
      (Sodium--Isotopes) (Protons) (Nuclear reactions)

USSR/ Chemistry - Chemical engineering; Industrial Economics   FD-2720

Card 1/1   Pub. 50 - 1/20

Author   : Malyshev, V. A.

Title   : Concerning the methods to be used in the calculation of the
                   production capacity of chemical industry enterprises

Periodical   : Khim. prom. No 5, 257-260, Jul-Aug 1955

Abstract   : Continues a discussion begun by M. M. Fedorovich in
                   Khim. prom. No 2, 33, 1953 and No 2, 87, 1954.
                   Expresses the view that the production capacity of plants
                   should be estimated on the basis of the output of goods
                   of high quality, i.e. of a quality which conforms with
                   GOST standards. Four references, all USSR, all since 1940.

MALYSHEV, V.A. (Gor'kovskaya oblast')

Treatment of tuberculosis with small doses of phthivazide. Probl.
tub. no.2:68-69 Mr-Ap '54.   (MLRA 7:5)
    (NICOTINIC ACID ISOMERS, therapeutic use,
     *isoniazid in pulm. tuberc., small doses)
    (TUBERCULOSIS, PULMONARY, therapy,
     *isoniazid, small doses)

MALYSHEV, V.A., NAZAROVA, Z.Ya.

Some data on anicteric leptospirosis in Chelyabinsk Province.
Zhur. mikrobiol., epid.i immun. 33 no.4:62-64 Ap '62.

(MIRA 15:10)

1. Iz Chelyabinskoy oblastnoy sanitarno-epidemiologicheskoy
stantsii.

(CHELYABINSK PROVINCE—LEPTOSPIROSIS)

L 05673-67

ACC NR: AR6023248

where for any $\varepsilon > 0$ the portion of the $(n, m(n))$-functions for which

$$L(f, p) < (1 - \varepsilon) \cdot \frac{p \cdot m(n) \cdot 2^n}{n},$$

approaches zero with a growth n.   V. Kudryavtsev.

SUB CODE: 12/   SUBM DATE: none

Card 2/2

L 05673-67   EWT(d)/T   IJP(c)
ACC NR: AR6023248

SOURCE CODE: UR/0044/66/000/003/V056/V056

AUTHOR: Malyshev, V. A.

REF SOURCE: Sb. Diskretn. analiz. Vyp. 5. Novosibirsk, 1965, 27-30

TITLE: On the possibility of calculating discrete functions within a certain probability

SOURCE: Ref. zh. Matematika, Abs. 3V200

TOPIC TAGS: control theory, mathematic analysis

TRANSLATION: The image of a set B_n of binary sequences of length n in B_m is called a discrete (n,m)-function. Let the control system $\mathfrak{A}$ compute some (n,m)-function ϕ. It is said that (n,m)-function f is p-computed by control system $\mathfrak{A}$ if the function f and ϕ coincide at least for $[p \cdot 2^n]$ values of the arguments $(0 \leqslant p \leqslant 1)$. Then schemes of functional elements are considered having two inputs and realizing all functions of two variables. By the complexity of a scheme is meant, as usual, the number of functional elements in it. By $L(f,p)$ is meant the least of the complexities of the schemes which p-compute function f. Let $L(n,m,p) = \max L(f,p)$, where the maximum is taken for all possible (n,m)-functions f. The following is proved: Theorem. If $m(n) \to +\infty$ and

$$\frac{\log_2 m(n)}{n} \to 0, \quad \text{then} \quad L(n, m, p) \sim \frac{p \cdot m(n) \cdot 2^n}{n},$$

Card 1/2

UDC: 519.95

L 33393-66   EEC(k)-2/EWP(k)/EWT(1)/FBD/T   IJP(c)   WG

ACC NR: AP6011461   SOURCE CODE: UR/0109/66/011/004/0767/0869

AUTHOR: Malyshev, V. A.

ORG: none

TITLE: Quasilinear negative conductance of quantum devices

SOURCE: Radiotekhnika i elektronika, v. 11, no. 4, 1966, 767-769

TOPIC TAGS: quantum device, quantum generator

ABSTRACT: Formulas are given for the quasilinear negative conductance G_e of three- and four-level resonator-type quantum devices based on one transition. The conductance G_e in a quasilinear approximation is given by: $G_e = -G_0/(1+X^2)$; $X = Ar$. A table presents energy diagrams for three types of quantum systems, kinetic equations and their solutions, formulas for the parameters G_0 and r, and formulas for the output power. The case of purely conductive G_e (when the quantum frequency ν_{ij} exactly corresponds to the frequency of energy transition from the i-th level to the j-th) is considered. Org. art. has: 9 formulas and 1 table.

SUB CODE: 10,09/SUBM DATE: 03Dec64 / ORIG REF: 003 / OTH REF: 001

Card 1/1   UDC: 621.378.3.011.222

L 36195-66
ACC NR: AP6011451

phase constant. The method of successive approximations is used. The theory is
extended over the case of tunnel-diode TW amplifiers, in the zeroth and first
approximations. Tunnel gaps with oscillatory characteristics are considered
which are associated with soft and hard excitation conditions. The results obtained
for the tunnel-diode amplifier are also applicable to an extended (along the trans-
mission line) reflex klystron that operates at a repeller voltage corresponding to
the oscillation-zone center. Two Supplements give details of operation with two
integrals used in the article. Orig. art. has: 2 figures and 76 formulas.

SUB CODE: 09 / SUBM DATE: 04Jan65 / ORIG REF: 002 / OTH REF: 003

Card 2/2

L 36196-66   EWT(l)

ACC NR: AP6011451   SOURCE CODE: UR/0109/66/011/004/0699/0708

AUTHOR: Voloshchenko, Yu. P.; Malyshev, V. A.

ORG: none

TITLE: Nonlinear theory of negative-conductance TW amplifiers

SOURCE: Radiotekhnika i elektronika, v. 11, no. 4, 1966, 699-708

TOPIC TAGS: TW amplifier, electronic amplifier, distributed amplifier, amplifier design

ABSTRACT: An attempt is made to construct a nonlinear theory of distributed amplifiers operating under stationary conditions. Assumptions: (a) the TW amplifier is designed with nonlinear susceptances and negative nonlinear conductances, (b) no reflections in the amplifying system, (c) small propagation constant length, i.e., the amplitude propagation constant is considerably smaller than the

Card 1/2   UDC: 621.385.632.011.222

MALYSHEV, V.A.

A.N.Kolmogorov's problem. Vest.Mosk.un.Ser.1: Mat., mekh. 20
no.6:8-10 N-D '65.   (MIRA 18:12)

1. Kafedra matematicheskogo analiza Moskovskogo universiteta.
Submitted Feb. 10, 1964.

KLOSS, B.M.; MALYSHEV, V.A.

Determining the complexity of some classes of functions.
Vest. Mosk. un. Ser. 1: Mat., mekh. 20 no.4:44-51 Jl-Ag '65.
(MIRA 18:9)

1. Kafedra teorii veroyatnosti Moskovskogo gosudarstvennogo
Universiteta imeni M.V. Lomonosova.

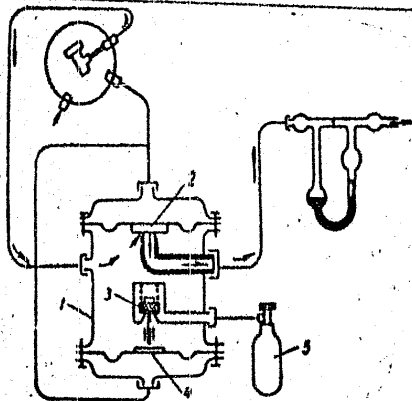L 27890-66

ACC NR: AP5026538

Fig. 1. 1- chamber;
2- nozzle; 3- valve;
4- membrane;
5- source of compressed
air

Orig. art. has: 1 figure.

SUB CODE: IE/   SUBM DATE: 01Jul63

Card 2/2

L 27890-66

ACC NR: AP5026538

SOURCE CODE: UR/0286/65/000/019/0081/0081

AUTHORS: Kitayev, Yu. V.; Simagin, A. V.; Malyshev, V. A.

ORG: none

TITLE: A device for testing a diving respiratory apparatus. Class 42, No. 175262

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 81

TOPIC TAGS: respirator, pressure regulator, automatic pressure control

ABSTRACT: This Author Certificate presents a device for testing a diving respiratory apparatus. The device contains a sensitive element in the form of a membrane dividing the casing into two compartments and directing the flow of a gas stream through a nozzle regulated by a measuring element (see Fig. 1). To broaden the limits of testing pressure without destroying the sensitive element, the nozzle-containing chamber of the device is provided with a valve and an auxiliary membrane which is equal to the effective size of the membrane and which directs the valve. The valve and the auxiliary membrane regulate the pressure delivered by a source of compressed air in response to the tested pressure.

Card 1/2

UDC: 626.025.001.4

L 10395-66

ACC NR: AP5026901
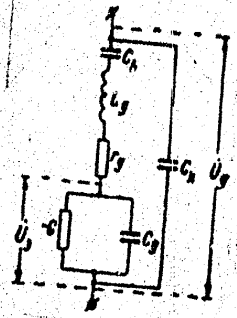
layer I-V characteristic, G_0 and ϑ can be determined from the same characteristic. Formulas are developed which describe nonlinear properties of (negative) conductance and susceptance at the terminals of an a-c supplied tunnel diode. It is shown that only under strong-signal conditions has the diode a negative conductance which corresponds to a high negative conductance of the depletion layer. The existence of inductive and capacitive susceptances, in the negative-conductance region of the I-V curve, is explored. Orig. art. has: 8 figures and 33 formulas.

SUB CODE: 09 / SUBM DATE: 22Jun64 / ORIG REF: 004 / OTH REF: 003

jw

Card 2/2

L 10395-66

ACC NR: AP5026901   SOURCE CODE: UR/0109/65/010/010/1814/1823

35

AUTHOR: Malyshev, V. A.   B

ORG: none

TITLE: Investigation of nonlinear characteristics of a complete equivalent circuit
of the tunnel diode

SOURCE: Radiotekhnika i elektronika, v. 10, no. 10, 1965, 1814-1823

TOPIC TAGS: tunnel diode, semiconductor diode

ABSTR   : The connection between the parameters of the complete tunnel-diode
equivalent circuit (see figure) and the nonlinear characteristics of an equivalent
diode a-c admittance is investigated. The depletion-layer negative conductance is
assumed to depend on the voltage amplitude A_d across the depletion layer as:
$-G = -G_0(1 - \nu X_d^2); \quad X_d = A_d/u_2,$ where u_2 is the valley voltage of the depletion-

Card 1/2   UDC: 621.382.233:539.2.012

L 10540-66

ACC NR: AP5022427

approximating the I-V curve by general polynomials of the 3rd, 4th, 5th, and 6th degree are developed; an especially simple solution is obtained with the 6th degree polynomial. Also, formulas are derived for the oscillatory characteristic and the negative-resistance phase; these formulas are intended for analyzing the behavior of tunnel-diode oscillators and amplifiers in a quasi-linear approxima-tion. An experimental verification of the formulas is claimed. Orig. art. has: 6 figures and 57 formulas.

SUB CODE: 09 / SUBM DATE: 26May64 / ORIG REF: 005 / OTH REF: 004

Card 2/2 pw)

L 10540-66

ACC NR: AP5022427   SOURCE CODE: UR/0109/65/010/009/1635/1645

AUTHOR: Malyshev, V. A.

ORG: none

TITLE: Approximation of the current-voltage characteristic of a tunnel diode by polynomials in a quasi-linear analysis of the diode operation

SOURCE: Radiotekhnika i elektronika, v. 10, no. 9, 1965, 1635-1645

TOPIC TAGS: tunnel diode, current voltage characteristic, electronic amplifier, electronic circuit, electronic oscillator

ABSTRACT: Heretofore, analytical approximations of tunnel-diode I-V characteristics have never permitted a simple and regorous examination of tunnel-diode circuits in a quasi-linear approximation. The present article attempts to solve this problem by representing the diode current as an exponential polynomial of voltages across the diode depletion layer. Formulas for

Card 1/2   UDC: 621.382.233.001

L 6439-66

ACC NR: AP5026193

efficiency is introduced; this coefficient takes into account the reduction of the oscillator output power caused by the external cavity. An experimental verification is mentioned which permits neglecting the resonant properties of the transmission line. Orig. art. has: 3 figures, 47 formulas, and 1 table.

SUB CODE: EC/   SUBM DATE: 25May64/   ORIG REF: 002/   OTH REF: 003

Card 2/2

L 6439-66   EWT(1)/EWA(h)

ACC NR: AP5026193   SOURCE CODE: UR/0142/65/008/004/0411/0419

AUTHOR: Malyshev, V. A.   13
                                                                            B

ORG: none

TITLE: Stabilizing the frequency of shf oscillators by an external resonator connected via a half-wave line

SOURCE: IVUZ, Radiotekhnika, v. 8, no. 4, 1965, 411-419

TOPIC TAGS: shf oscillator, frequency stabilization

ABSTRACT: Full potentialities of the external-cavity method of shf-oscillator stabilization and the problem of loss of the oscillator power caused by its additional load are investigated in the present article which is an outgrowth of some earlier American works (M. Magid, IRE Nat'l Conv. Record, Mar 1957, 1, 208 and others). Frequency stabilization in a shf oscillator whose external cavity is connected via a transmission line of integer-half-waves length is theoretically considered. Formulas are developed for stabilization coefficients depending on the feedback delay and on the external reactive load. A new coefficient of stabilization

Card 1/2   UDC: 621.373.52

MALYSHEV, V.A.

The law of corresponding states for the temperature
dependence of steam pressure in a steam-saturated
liquid. Izv. vys. ucheb. zav.; fiz. 8 no.4:147-150 '65.
(MIRA 18:12)

1. Taganrogskiy radiotekhnicheskiy institut. Submitted
January 29, 1965.

MALYSHEV, V.A.

Determination of the optimum load of single-stage self-
oscillators. Izv. vys. ucheb. zav.; radiotekh. 8 no.3:
378-381 My-Je '65. (MIRA 18:9)