"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, N. A.: Master Phys-Math Sci (diss) -- "The diffusion of light by sodium-boron-silicate glass, and changes in it with thermal treatment". Leningrad, 1959. 19 pp (State Order of Lenin Optical Inst im S. I. Vavilov), 120 copies (KL, No 16, 1959, 105)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYNSKIY, Ya.M.

Tight suturing of the abodminal wall after surgery for acute appendicitis. Khirurgiia 33 no.4:135-136 Ap '57. (MLRA 10:7)

1. Iz Belogorodskoy lineynoy bol'nitsy (sav. khirurgicheskim otdeleniyem Ya.M.Volynskiy, glavnyy vrach V.D.Tokareva)
(APPENDICITIS, surg.
suturing & postop. care)
(POSTOPERATIVE CARE, in various dis.
appendicitis)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYNYA, A.; BALENTI, H.; ISAK, F.

Surgical treatment of ankylosing spondylarthritis with osteotomy of the spine. Ortop.,travm. i protez. 20 no.5:7-10 My '59. (MIRA 12:9)

1. Iz kliniki ortopedii i travmatologii (zav. - akademik prof. A.Redulesku) Instituta usovershenstvovaniya vrachey, Bukharest.
(SPONDYLITIS, ANKYLOSING, surg.
osteotomy of spine (Rus))

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYNYA, A., kand.med.nauk; ISAK, F.

Progress in Rumanian orthopedics in the years of popular regime. Ortop.,travm. i protez. 20 no.5:60-62 My '59. (MIRA 12:9)

(ORTHOPEDICS
in Rumania (Rus))

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYNYA, Marinesku.

Development of science in the Rumanian People's Republic. Priroda 43 no.5:72-75 My '54. (MLRA 7:5)

1. Uchenyy sekretar' Akademii nauk Rumynskoy Narodnoy Respubliki. (Rumania--Science) (Science--Rumania)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYNYA, R.

Voynya, R.

"The selectivity of fertilization of winter wheat." Moscow Order of Lenin Agricultural Academy imeni K. A. Timiryazev. Moscow, 1956 (Dissertation for the degree of Candidate in Biological Sciences)

Knizhnaya letopis'
No. 25, 1956. Moscow

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

1. VOYCTSKIY, V.S.

2. USSR (600)

4. Seismometers

7. Improvement of seismic amplifier. [abstract] Izv. Glav. upr. geol.fon. no. 2. 1947

9. Monthly List of Russian Accessions, Library of Congress, March, 195 . Unclassified.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYROVICH, R.F.

Oxidation kinetics of tungsten-iron and titanium-iron alloys. Zhur. fiz. khim. 39 no.2:458-461 F '65. (MIRA 18:4)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSEKHOVSKIY, B.V. (Novosibirsk)

Spin-type stationary detonation. PMTF no.3:157-164 S-O '60. (MIRA 14:7)

(Explosions)
(Rotating masses of fluid)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

FRANKL', F.I., and V. VOYSHEL'.

VOYSHEL', V.

Trenie v turbulentnom pogranichnom sloe okolo plastinki v ploskoparallel'nom potoke szhimaemogo gaza pri bol'shikh skorostiakh. Moskva, 1937. 20p., tables, diagrs. (TSAGI.) Trudy, no.321)

Summary in English.

Title tr.: Turbulent friction in the boundary layer of a flat plate in a two-dimensional flow of compressible gas at high speeds.

QA911. M65 no.321

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHEL', V.

FRANKL', F.I. and V. VOYSHEL'.

Friction in the turbulent boundary layer of a compressible gas at high speeds. Washington, 1942. (U.S. NACA TM no. 1032, p.9-16)

Trans of the author's Trenie v turbulentnom pogranichnom sloe pri bol'shikh skorostiakh v szhimaemom gaze. (In: "Sbornik obshcheteoreticheskoi gruppy TSAGI." Vyp. III. Moskva, 1935. (TSAGI. Trudy, no.240) q.v.)

TL 507, U57 no.1032

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHEL', V.

FRANKL'F.I. and V.Voĭshel'.

Turbulent friction in the boundary layer of a flat plate in a two-dimensional compressible flow at high speeds. Washington, 1943. 15p., diagrs. (U.S.NACA TM no. 1053)

Trans. of Trenie v turbulentnom pogranichnom sloe okolo plastinki v ploskoparallel'nom potoke szhimaemogo gaza pri bol'shikh skorostiakh.

TL507, U57 no, 1053

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHKO, V.

Kholodnaia Obrabotka Metalla Uprochniaiusche-Kalibruiuschim Instrumentom
(Cold Finishing of Metals with Hard-Calibrating Tools)

81 p. 50¢

SO: Four Continent Book List, April 1954

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOISHKO, V. O.

Author: Voishko, V. O.

Title: Cold Working of Metals by Strengthening-Sizing Tools. 84 pp., illus., bibliography.

Date: 1950. Moscow

Subject: Metals-finishing.

Available: Library of Congress, Call No: TS213.V63

Source: Lib. of Cong. Subj. Cat., 1951

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOISHKO, V. O.

CIA

Author: Voishko, V. O.

Title: Cold Working of Metals by Strengthening-Sizing Tools, 84 pp., illus., bibliography.

Date: 1950. Moscow

Subject: Metals-Finishing.

Publication: Library of Congress, Call No: [illegible]

Source: Lib. of Cong. Surg. Cat., [illegible]

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOISHKO, V. O.

3931 **Kholodnaia Obrabotka Metalla Uprochnialushche-Kalibrulushchim Instrumentom.** (Cold Working of Metals by Means of a Hardening and Calibrating Tool.) V. O. Voishko. 83 pages. 1950. Government Scientific-Technical Publishing House for Machine Construction Literature, Moscow and Leningrad, U.S.S.R.

Describes a method of finishing the surface of parts without removing chips, by knurling and flattening with rollers. Basic processes taking place in the metal during its deformation, influence of temperature, and of geometry of the rolls, and their influence on the worked surface are analyzed. Special attention is given to the problem of increasing fatigue strength and finish, treatment under compression, increased wear resistance, and measurement of forces during knurling. In the first chapter, mention is made of behavior of several nonferrous metals. After this, attention is largely confined to various steels. Graphs, tables, diagrams, and illustrations. 38 ref.

See also:
3900 (heat transfer in hot-working of steel)
3909 (extrusion of nonferrous metals)

3915 (noise reduction in metalworking)
4191 (strain aging of patenated steel wire)
4193 (maching Ti)
4755 (plastic tooling in aircraft production)
5001 (economic evaluation of parts fabrication)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOISHKO, V. O.

Author: Voishko, V. O.

Title: Cold processing (working) of metals with hardening calibrating tools. Kholodnaia obrabotka metalla uprochniaiushche-kalibruiushchim instrumentom. 83 p.

City: Moscow
Publisher:
~~Publication~~ The Gov. Sci-Tech. Pub. Est. for machine construction lit.

Date: 1950

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 4, No. 4, July 1951

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOISHKO, V.O.

USSR/Miscellaneous - Industrial Processes

Card 1/1

Author : Voishko, V. O.

Title : Final treatment with plastic deformation

Periodical : Stan. i Instr., No. 5, 31 - 32, May 1954

Abstract : A method is described for the machining of rings and lamellas without the necessity of removing the shavings through plastic deformation. This method completely eliminated the use of abrasives. The characteristics of this abrasiveless treatment method and the advantages derived therefrom are outlined. Illustrations, drawings.

Institution : ...

Submitted : ...

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

BTK

3931 **Kholodnaia Obrabotka Metalla Uprochnialushchei Kalibrulushchim Instrumentom.** (Cold Working of Metals by Means of a Hardening and Calibrating Tool.) V. O. Vokhko. 83 pages. 1950. Government Scientific-Technical Publishing House for Machine Construction Literature, Moscow and Leningrad, U.S.S.R.

Describes a method of finishing the surface of parts without removing chips, by knurling and flattening with rollers. Basic processes taking place in the metal during its deformation, influence of temperature, and of geometry of the rolls, and their influence on the worked surface are analyzed. Special attention is given to the problems of increasing fatigue strength and finish treatment under compression, increased wear resistance, and measurement of forces during knurling. In the first chapter, mention is made of behavior of several nonferrous metals. After this, attention is largely confined to various steels. Graphs, tables, diagrams, and illustrations. 38 ref.

See also:
3900 (heat transfer in hot-working of steel)
3909 (extrusion of nonferrous metals)

3915 (noise reduction in metalworking)
4191 (strain aging of patented steel wire)
4193 (maching Ti)
4755 (plastic tooling in aircraft production)
5001 (economic evaluation of parts fabrication)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHKO, V.O.

VOYSHKO, V.O.

Final finishing by means of plastic deformation. Stan. i instr. 25 no.5:31-32 My '54. (MLRA 7:6)
(Metals--Finishing)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHKO, V. O.

VOYSHKO, V.O.

Grinding the closed surface of a cylinder section. Stan. i instr. 25 no.5:31 My '54. (MLRA 7:6)
(Grinding and polishing)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHKO, V. O.

20747. Voyshko, V. O. O nekotorykh konstruktivnykh nedostatkakh tokarno-nakatnogo stanka tipa 1835-MX177. Stanki i instrument, 1949, No. 6, s. 24-25.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.

Biasing networks with silicon stabilizers. Radio no.8:53 Ag '62. (MIRA 15:8)

(Electric networks) (Electron tubes)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, Georgiy Valerianovich; NIKIFOROV, N.D., otv.red.

[Methodological manual for the design of audio frequency transistor amplifiers as a course requirement] Metodicheskoe rukovodstvo po kursovomu proektirovaniiu tranzistornykh usilitelei zvukovoi chastoty; uchebnoe posobie. Leningrad, Leningr. elektrotekhn. in-t sviazi im. M.A.Bonch-Bruevicha, 1964. 126 p. (MIRA 17:11)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.V.; POROSHIN, N.D.

Analysis of a low-frequency capacitive amplifier. Radiotekhnika 20 no.8:44-51 Ag '65. (MIRA 18:8)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni A.S. Popova.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

TSYKIN, Georgiy Sergeyevich; VOYSHVILLO, G.V., prof., retsenzent; VENGRENYUK, L.I., red.

[Electronic amplifiers] Elektronnye usiliteli. Izd.3., dop. Moskva, Sviaz', 1965. 510 p. (MIRA 18:8)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.V.

Internal and external feedback in transistor amplifiers. Radiotekhnika 17 no.9:24-34 S '62. (MIRA 15:9)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Transistor amplifiers)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, Georgiy Valerianovich; CHISTYAKOV, N.I., retsenzent; TSYKIN, G.S., otv. red.; TSEYTLIN, F.G., red.; ROMANOVA, S.F., tekhn. red.

[Electron-tube low frequency amplifiers] Usiliteli nizkoi chastoty na elektronnykh lampakh. Izd.2., dop. Moskva, Sviaz'izdat, 1963. 759 p. (MIRA 16:9)
(Amplifiers, Electron-tube)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

S/108/63/018/001/006/011
D201/D308

AUTHORS: Voyshvillo, G.V. and Poroshin, N.D., Members of the Society (see Association)

TITLE: Generalized theory of frequency spectrum converters

PERIODICAL: Radiotekhnika, v. 18, no. 1, 1963, 35-39

TEXT: The authors show that the relationships between currents and voltages in the input and output circuits of frequency changers may be reduced to a single system of linear equations. The generalization is based on the theory of linear 2n-terminal networks and may be applied to a wide range of radio and electronic circuits, such as frequency changers, modulators and parametric amplifiers. There is 1 figure.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov) [Abstracter's

Card 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

S/108/63/018/001/006/011
D201/D308

Generalized theory of frequency ...

note: Name of Association taken from first page of journal_/

SUBMITTED: April 12, 1962

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

PHASE I BOOK EXPLOITATION SOV/3780

Voyshvillo, Georgiy Valerianovich

Usiliteli nizkoy chastoty na elektronnykh lampakh (Audio-Frequency Electron-Tube Amplifiers) Moscow, Svyaz'izdat, 1959. 756 p. Errata slip inserted. 20,000 copies printed.

Resp. Ed.: G.S. Tsykin; Tech. Ed.: F.S. Karabilova; Ed.: A.A Kokushkin.

PURPOSE: This monograph is intended for use in engineering courses on audio amplifiers.

COVERAGE: The first chapters of the monograph contain descriptive material, including classification of amplifiers, basic amplifier indices, principles of circuit diagrams and a considerable amount of theoretical material (theory of circuits, theory of transients, connection between frequency and phase characteristics, etc.). Other chapters deal with feedback and pulse signal amplifiers, with one chapter devoted to the general theory of feedback. The author's aim of creating an engineering course on audio-amplifiers is reflected in comparative evaluation of

~~Card 1/16~~

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properties of various amplifier circuits, in discussion of various possibilities of their application, and in examination of design procedure and technique of separate stages of various types of audio amplifiers and audio transformers. The author illustrates his text with many examples and material data. The author thanks reviewer N.I. Chistyakov and editor G.S. Tsykin. There are 97 references: 92 Soviet and 5 English.

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2. Classification of amplifiers 7
1. Types of electric amplifiers 7
2. Harmonic and pulse signal amplifiers 8
3. D-c and a-c amplifiers 10
4. Audio- and radio-frequency amplifiers 10
5. Narrow- and wide-band amplifiers 11
6. Voltage, current, and power amplifiers 12
3. Types of amplifier stages 12

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.V.; POROSHIN, N.D.

Analysis of a reactive capacitive amplifier. Radiotekhnika 18 no.10:43-53 O '63. (MIRA 16:12)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S.Popova.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G. V.

A General Course in Radio Engineering, 2d Revised Edition (Obshchiy kyrs radiotekhniki), Voyennoye izd, 1950, 456 pp.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

TSYKIN, Georgiy Sergeyevich; VOYSHVILLO, G.V., red.; VORONIN, K.P., tekhn. red.

[Signal amplifiers] Usiliteli elektricheskikh signalov. Moskva, Gos. energ. izd-vo, 1961. 422 p. (Massovaia biblioteka. Uchebnaia seriia, no.414) (MIRA 14:9)
(Amplifiers, Electron tube) (Transistor amplifiers)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.V.; DAVYDOV, V.S.; SOLOV'YEV, N.V.

Passage of pulse signals through an amplifier with a low Q-factor. Radiotekhnika 15 no.10:35-40 O '60. (MIRA 14:9)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S. Popova.
(Amplifiers (Electronics))

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

S/108/62/017/009/002/003
D288/D308

92520

AUTHOR: Voyshvillo, G. V., Member of the Society (see Association)

TITLE: Internal and external feedback in transistor amplifiers

PERIODICAL: Radiotekhnika, v. 17, no. 9, 1962, 24 - 34

TEXT: Basic definitions connected with feedback are given. The choice of Z and Y, H and G parameters with the aid of equivalent circuits is discussed. It is pointed out that the use of two-generator equivalent circuits for H and G parameters in internal feedback gives wrong formulas for loop gain. The choice of parameters is considered for internal and external feedback respectively. Interaction of internal and external feedback and conditions of neutralization of internal feedback are considered. Several papers by other authors are reviewed and it is pointed out that certain inaccuracies in them are due to lack of distinction between internal and external feedback. There are 12 figures and 3 tables.

Card 1/2

1/B

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

Internal and external feedback ... S/108/62/017/009/002/003
D288/D308

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications, imeni A.S. Popov) [Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: December 28, 1961

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

23610
S/108/61/000/006/006/008
D201/D305

9,2572

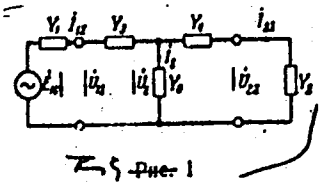
AUTHORS: Voyshvillo, G.V., Poroshin, N.D., Members of the Society (See Association)

TITLE: On the theory of the parametric amplifier

PERIODICAL: Radiotekhnika, no. 6, 1961, 45 - 50

TEXT: The authors consider a parametric amplifier as a non-linear dipole Y_0 with additional admittances Y_3 and Y_4 due to coupling of the dipole to the signal source and the load; and admittances Y_1 and Y_2 representing the internal source admittance and load admittance respectively, all connected in the cct as shown in Fig. 1.

Fig. 1.



Card 1/6

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

On the theory of the ...

Solving this system coefficients Y_{11} .... Y_{66} are found permitting the determination of the relationship between voltages and currents in the cct of Fig. 1 in the form of matrix

$$\begin{bmatrix} \dot{I}_{1S} \\ \dot{I}_{2S} \\ \dot{I}_{1P} \\ \dot{I}_{2P} \\ \dot{I}_{1F} \\ \dot{I}_{2F} \end{bmatrix} = \begin{bmatrix} Y_{11} & Y_{12} & Y_{13} & Y_{14} & Y_{15} & Y_{16} \\ Y_{21} & Y_{22} & Y_{23} & Y_{24} & Y_{25} & Y_{26} \\ Y_{31} & Y_{32} & Y_{33} & Y_{34} & Y_{35} & Y_{36} \\ Y_{41} & Y_{42} & Y_{43} & Y_{44} & Y_{45} & Y_{46} \\ Y_{51} & Y_{52} & Y_{53} & Y_{54} & Y_{55} & Y_{56} \\ Y_{61} & Y_{62} & Y_{63} & Y_{64} & Y_{65} & Y_{66} \end{bmatrix} \begin{bmatrix} \dot{U}_{1S} \\ \dot{U}_{2S} \\ \dot{U}_{1P} \\ \dot{U}_{2P} \\ \dot{U}_{1F} \\ \dot{U}_{2F} \end{bmatrix}. \quad (9)$$

The notation within the matrix is as follows: $\dot{U}_{1S}$, $\dot{U}_{1P}$, $\dot{U}_{1F}$, $\dot{I}_{1S}$, $\dot{I}_{1P}$, $\dot{I}_{1F}$ - components of voltages and currents at frequencies f_S, f_P, f_F, of voltages $\dot{U}_{1\Sigma}$ and of current $\dot{I}_{1\Sigma}$ respectively, f_S being

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the signal frequency, $f_p = /f_{LO} - f_S/$, $f_F = f_{LO} + f_S$ where f_{LO} is the frequency of the local oscillator and $\dot{U}_{1E}$ and $\dot{I}_{1\Sigma}$ being voltages and currents respectively at all frequencies except f_{LO}, $2f_{LO}$, ... The expression (9) shows that a parametric amplifier, amplifying small signals, is equivalent to a 2n - pole, the properties of which in the Y-parameter system of notation are determined by the coefficients Y_{11} .... Y_{66}. In particular the amplifier of Fig. 1 is equivalent to a twelve-pole. Matrix (9) can be used to find various parameters of an amplifier such as gain, input admittance etc. The authors do it for the case of a low-frequency parametric amplifier for which $f_S \ll f_{LO}$. Thus the gain is derived as

$$\dot{K}_p = \frac{\dot{U}_{2p}}{\dot{U}_{1S}} = -\frac{Y_{41}}{Y_{44} + Y_{2p}}, \qquad K_F = \frac{\dot{U}_{2f}}{\dot{U}_{1S}} = -\frac{Y_{61}}{Y_{66} + Y_{2f}} \qquad (14)$$

the input admittance as

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On the theory of the ...

$$Y_{in} = \frac{\dot{I}_{1S}}{\dot{U}_{1S}} = Y_{11} - \frac{Y_{14}Y_{41}}{Y_{44} + Y_{2p}} - \frac{Y_{16}Y_{61}}{Y_{66} + Y_{2f}}; \qquad (16)$$

the output admittance as

$$Y_{p\ out} = Y_{44} - \frac{Y_{14}Y_{41}}{Y_{11} + Y_{1S} - \frac{Y_{16}Y_{61}}{Y_{66} + Y_{2f}}} \qquad (19)$$

and

$$Y_{f\ out} = Y_{66} - \frac{Y_{16}Y_{61}}{Y_{11} + Y_{1S} - \frac{Y_{14}Y_{41}}{Y_{44} + Y_{2p}}};$$

the power gain as

$$K_p = \frac{P_2}{P_1} = \frac{K_p^2\, g_{2p} + K_F^2\, g_{2F}}{Re(Y_{in})} \qquad (22)$$

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where g_{2p} and g_{2F} - conductances of load Y_{2p} and Y_{2F}. If the load consists of a resonant circuit tuned to one of the output frequencies, which is normal for frequency changers, the gain at frequency f_p becomes

$$K_{pp} = \frac{f_p}{f_s} = \frac{f_{LO} - f_s}{f_s} \qquad (25)$$

and at frequency f_F would become

$$K_{pF} = \frac{f_F}{f_s} = \frac{f_{LO} + f_s}{f_s} \qquad (26)$$

If both output frequencies are present at the output of the amplifier then, for $f_{LO} \gg f_{s1}$

$$K_p \approx \frac{f_{LO}}{f_s} . \qquad (27)$$

The relationships (25) and (26) have been obtained by quite diffe-

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rent methods by J. Manley and H. Rowe (Ref. 2: PIRE, v. 44, no. 7, 1956) and also by B. Salzberg (Ref. 3: PIRE, v. 45, no. 11, 1957). It is pointed out in conclusion that the proposed method of analysis could also be applied to other passive systems, such as to a diode mixer working into any kind of load and to other similar circuits. There are 3 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: J. Manley, H. Rowe, PIRE, v. 44, no. 7, 1956; B. Salzberg, PIRE, v. 45, no. 11, 1957.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Radio Engineering and Electrical Communications Society im. A.S. Popov). [Abstractor's note: Name of association taken from first page of journal]

SUBMITTED: August 29, 1960

Card 6/6

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

RAMM, Grigoriy Samoylovich; VOYSHVILLO, G.V., otv.red.; GAL'CHINSKAYA, V.V., tekhn.red.

[Electronic amplifiers; study aid] Elektronnye usiliteli; uchebnoe posobie. Leningrad, Leningr.elektrotekhn.in-t sviazi im. M.A.Bonch-Bruevicha, 1959. 320 p. (MIRA 13:10)
(Amplifiers (Electronics))

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.V.; POROSHIN, N.D.

Concerning the theory of a parametric amplifier. Radiotekhnika 16 no.6:45-50 Je '61. (MIRA 14:6)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi.
(Amplifiers(Electronics))

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

SOV/120-58-6-16/32

AUTHORS: Voyshvillo, G. V. and Davydov, V. S.

TITLE: A Spectrum Analyzer for Audio Frequencies (Analizator spektra zvukovykh chastot)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 82-84 (USSR)

ABSTRACT: The equipment is an auxiliary unit which should be used in conjunction with an external generator and an external vacuum-tube voltmeter. The block schematic of the device is given in Fig.2 and a detailed circuit diagram in Fig.3. The instrument is based on the principle of heterodyning and consists of a low-pass filter, a balanced mixer, a transformerless quartz crystal filter and a resonant output stage. The input filter has a flat amplitude characteristic from 0 to 8.5 kc/s and has a maximum attenuation at 12.5 kc/s. The quartz filter has a resonance also at 12.5 kc/s, so that it is protected from direct interaction of the input frequency which would be equal to 12.5 kc/s. The mixer is in the form of a balanced circuit which is characterised by the minimum number of the combination frequencies at its output. The quartz filter consists of two elements. Each element

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A Spectrum Analyzer for Audio Frequencies

consists of a resistive phase inverter, whose one output contains the crystal while the second output is furnished with a trimmer capacitor which neutralises the parasitic capacitance of the crystal. The effective bandwidth of the filter is 4 c/s. The overall bandwidth of the analyzer is practically uniform from 20 c/s to 8 kc/s, as can be seen from Fig.3. The paper contains 3 figures.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optics Institute)

SUBMITTED: December 30, 1957.

Card 2/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

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B012/B077

9,3230 (also 1031)

AUTHORS: Voyshvillo, G. V., Member of the Society, Davydov, V. S., Member of the Society, Solov'yev, N. V., Member of the Society

TITLE: Passage of Impulse Signals Through a Low-quality Amplifier

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 10, pp. 35-40

TEXT: This is an investgation of the passage of impulse signals consisting of steplike and linear increasing components through a low-quality resonance amplifier. The latter consists of equal rheostat or single-circuit cascades with 1 to 3 cascades. The investigation of the passage of impulse signals is limited to those which can easily be divided into components of the following type:

$$u_1(t) = 1(t-t_0) \quad (2) \quad \text{and}$$

$$u_1(t) = a(t-t_0)\cdot 1(t-t_0) \quad (3)$$

The present investigation is based on finding the transitional amplification factor

$$\varkappa(t) = \left[u_2(t)\right]_{u_1(t)=0} \quad (5)$$

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and the voltage at the amplifier output with a linearly increasing input voltage $u_2(t) = [u_2(t)]_{u_1(t)=at.1(t)}$ (6).

In order to determine these two voltages, the operator-method based on the Laplace transformation is employed. Fig. 2 shows the equivalent-circuit diagram for the rheostat amplifier, for this case the equations for the parameters K_0, Q, and ω_0 are written. Here, the functions (5) and (6) are of the form

$$v_2(p) = K_0/p \left\{1+Q(p/\omega_0+\omega_0/p)\right\}^N \quad (8) \text{ or}$$

$$u_2(p) = aK_0/p^2 \left\{1+Q(p/\omega_0 + \omega_0/p)\right\}.$$

Figs. 3 to 8 show the curves of the functions for N=1, 2, or 3. N represents the number of cascades. The output voltages of amplifiers with any resonance frequencies ω_0 at different slopes of the input signal a can be determined from these curves. Using these curves it is also possible to find the output voltage produced under the influence of input signals formed by components (2) and (3). The results of this investigation make it possible to find the largest instantaneous values of the output

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Passage of Impulse Signals Through a Low-quality Amplifier

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voltage as a function of the quality Q and the resonance frequency ω_0. The studies of V. G. Vol'pyan (Refs. 5,6) are mentioned. There are 12 figures, 2 tables, and 6 Soviet references.

SUBMITTED: November 30, 1959 (initially)
May 23, 1960 (after revision)

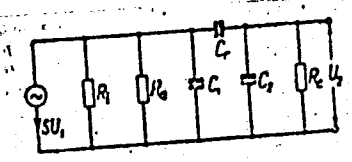

Рис. 2

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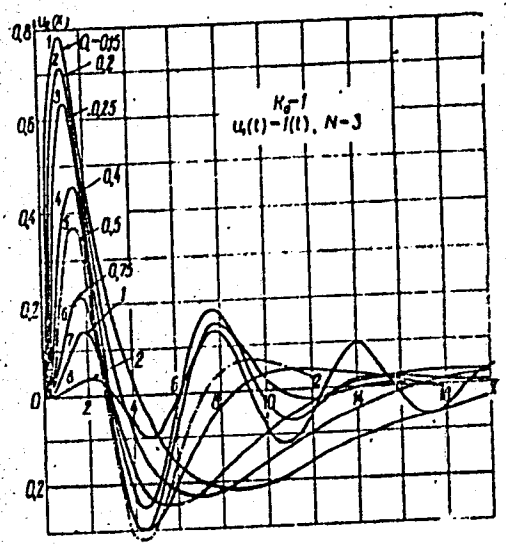

Рис. 5

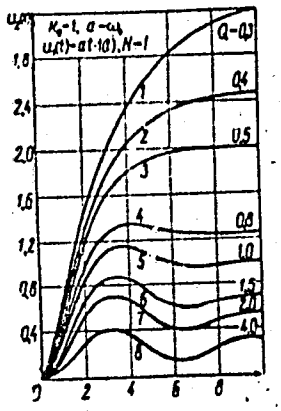

Рис. 6

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B012/B077

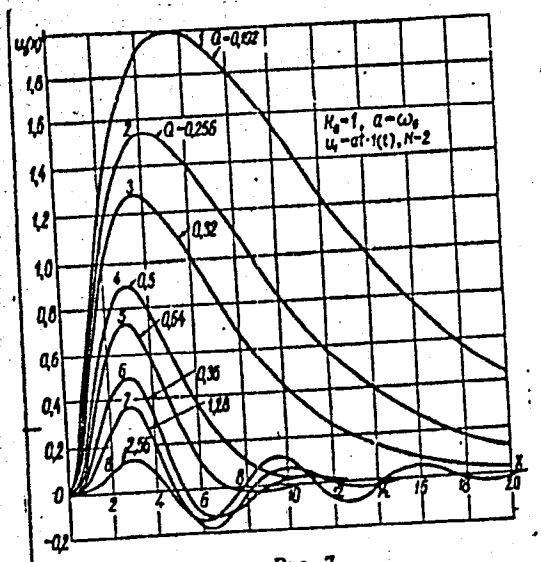

Рис. 7

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B012/B077

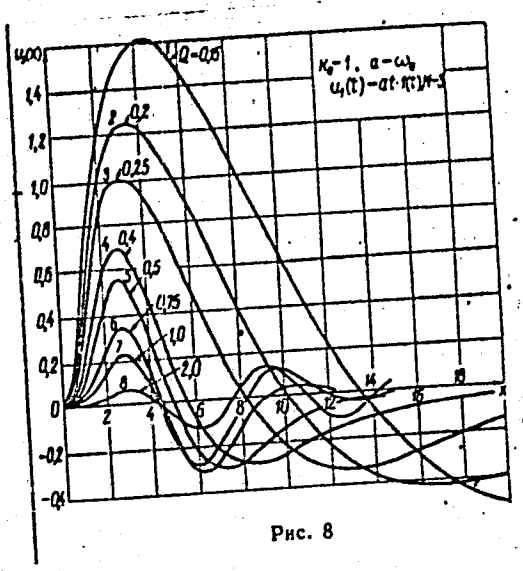

Рис. 8

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39350

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D288/D308

9,2572 (also 4003)

AUTHORS: Voyshvillo, G. V., Poroshin, N. D., Members of the Society (see Association)

TITLE: Parameters of a semiconductor diode acting as a non-linear capacitor

PERIODICAL: Radiotekhnika, v. 17, no. 7, 1962, 55-57

TEXT: It is shown that the differential capacitance of a semiconductor diode chosen for applications like parametric amplifier or modulator is accurately given by $C = dq/du = C_0 + a_1u + a_2u^2$, where u is the applied d.c. voltage. Mean capacitance values change with frequency. A useful parameter is the active conductance $g = \omega C/Q$, and the easiest measurement to undertake is that of Q. Four curves are reproduced, plotting C and Q vs. voltage and frequency and showing good agreement

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

between calculated and measured values. There are 4 figures. The English-language reference reads as follows: S. Sensiper, R. D. Weglein, Proc. IRE, v. 48, no. 8, 1960.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A. S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications im. A. S. Popov) [Abstracter's note: Name of Association taken from first page of journal.]

SUBMITTED: July 11, 1961 (initially)
February 9, 1962 (after revision)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, G.V.; DAVYDOV, V.S.; SOLOV'YEV, N.V.

Passing of white noise and frequency dependent noise through an amplifier with a low factor of merit. Radiotekhnika 15 no.12: 21-24 D '60. (MIRA 14:9)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Amplifiers (Electronics)--Noise)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

TSYKIN, Georgiy Sergeyevich; VOYSHVILLO, G.V., otv.red.; VENGRENYUK, L.I., red.; MARKOCH, K.G., tekhn.red.

[Electronic amplifiers] Elektronnye usiliteli. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1960. 486 p. (MIRA 14:3)

(Amplifiers (Electronics))

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

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B010/B059

6.9400

AUTHORS: Voyshvillo, G. V., Member of the Society, Davydov, V. S., Member of the Society, Solov'yev, N. V., Member of the Society

TITLE: Transmission of White and Frequency-dependent Background by an Amplifier With a Low Q-Value

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 12, pp. 21 - 24

TEXT: The mean square background voltage at the output of a one- to three-stage selective amplifier as depending on the amplifier quality is calculated, considering white and 1/f-background only. The frequency response of an amplifier with N identical stages is described by (1) $K = K_0/\left\{\sqrt{1+\left[Q(f/f_0 - f_0/f)\right]^2}\right\}^N$, where K and K_0 denote the amplification factors at the frequencies f and f_0, respectively, and Q the quality of each stage. $d(\overline{U_{r1}^2}) = W(f)df$ with W(f) denoting the spectral density of the background efficiency, and U_r the background voltage. $W(f) = W_0$ for white

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Transmission of White and Frequency-dependent S/108/60/015/012/005/009
Background by an Amplifier With a Low Q-Value B010/B059

background, and therefore $\bar{U}^2_{r2} = \int_0^\infty W_0 K^2 df$, where K has to be substituted from (1). The results of integration are compiled in Table 1. The first column gives the number of amplifier stages, the second the mean square output voltage of white background, $\bar{U}^2_{r2}$. For 1/f-background, $W(f) = W_1 f_1/f$, where W_1 is the background density at f_1, and therefore $\bar{U}^2_{r2} = \int_0^\infty \frac{f_1}{f} W_1 K^2 df$, where K is to be substituted from (1). The results of this integration are shown in Table 2; the number of amplifier stages is given in the first column, the Q-values in the second, and the mean square output voltage of the frequency-dependent background, $\bar{U}^2_{r2}$, in the third. Graphs illustrate the relation between $\bar{U}^2_{r2}$ and Q, e.g., Fig.2 for N = 2 (upper curve for white, lower curve for 1/f-background). Finally, the authors point out the possibility of determining the ratio between instantaneous

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86883

Transmission of White and Frequency-dependent Background by an Amplifier With a Low Q-Value

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B010/B059

signal amplitude and mean square background by means of the formulas given. There are 4 figures, 2 tables, and 3 Soviet references.

SUBMITTED: November 30, 1959 (initially), May 23, 1960 (after revision)

(Table 1) *Таблица 1*

Число каскадов усилителя N	Средний квадрат выходного напряжения белого шума $\overline{U^2_{ш2}}$
1	$\frac{\pi f_0}{2Q} W_0 K_0^2$
2	$\frac{\pi f_0}{4Q} W_0 K_0^2$
3	$\frac{3\pi f_0}{16Q} W_0 K_0^2$

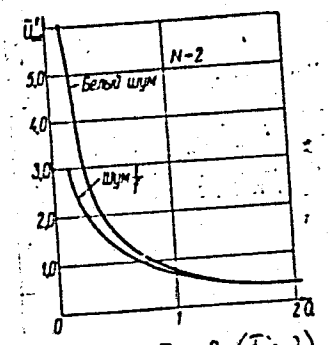

Рис. 2 (Fig. 2)

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(Table 2) Таблица 2

Число каскадов усилителя N	Значение добротности Q	Средний квадрат выходного напряжения частотно-зависимого шума $\overline{U^2_{ш2}}$
1	$Q<0,5$	$\frac{W_1 f_1 K_0^2}{\sqrt{1-4Q^2}} \operatorname{ar\,th} \frac{\sqrt{1-4Q^2}}{1-2Q^2}$
1	$Q>0,5$	$\frac{W_1 f_1 K_0^2}{\sqrt{4Q^2-1}} \operatorname{arc\,ctg} \frac{1-2Q^2}{\sqrt{4Q^2-1}}$
2	$Q<0,5$	$\frac{W_1 f_1 K_0^2}{1-4Q^2} \left(\frac{1-2Q^2}{\sqrt{1-4Q^2}} \operatorname{ar\,th} \frac{\sqrt{1-4Q^2}}{1-2Q^2} - 1 \right)$

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2	$Q>0,5$	$\frac{W_1 f_1 K_0^2}{4Q-1}\left(1-\frac{1-2Q^2}{\sqrt{4Q^2-1}}\operatorname{arc\,ctg}\frac{1-2Q^2}{\sqrt{4Q^2-1}}\right)$
3	$Q<0,5$	$\frac{W_1 f_1 K_0^2}{2(1-4Q^2)^2}\left[3(2Q^2-1)+\frac{2(6Q^4-4Q^2+1)}{\sqrt{1-4Q^2}}\operatorname{ar\,th}\frac{\sqrt{1-4Q^2}}{1-2Q^2}\right]$
3	$Q>0,5$	$\frac{W_1 f_1 K_0^2}{2(4Q^2-1)^2}\left[3(2Q^2-1)+\frac{2(6Q^4-4Q^2+1)}{\sqrt{4Q^2-1}}\operatorname{arc\,ctg}\frac{1-2Q^2}{\sqrt{4Q^2-1}}\right]$

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, Georgiy Valerianovich; CHISTYAKOV, N.I., retsenzent; TSYKIN, G.S., otv.red.; KOKUSHKIN, A.A., red.; KARABILOVA, F.S., tekhn.red.

[Low frequency amplifiers using electron tubes] Usiliteli nizkoi chastoty na elektronnykh lampakh. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1959. 754 p. (MIRA 13:3)
(Amplifiers, Electron-tube)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSVILLO, G.V.

CARD 1 / 2 PA - 1592

SUBJECT USSR / PHYSICS
AUTHOR VOJSVILLO,G.V., DAVYDOV,V.S.
TITLE The Graphical Method of Computing Thermocompensation of Rheostat Amplifiers on Semiconductor Triodes.
PERIODICAL Radiotechnika, 11, fasc.10, 18-24 (1956)
Issued: 11 / 1956

As the thermostabilization number the derivation of the collector current with respect to I_{ko} (loss current between collector and base), which is known as coefficient of thermostabilization, is introduced. The quantity $\frac{\partial I_k}{\partial I_{ko}}$ makes it possible to judge the stability of the location of the place of operation, but it does not determine the gradient of the coefficient of cascade amplification. In a cascade with a common emitter the thermostabilization coefficient may change from 1 to $\frac{1}{1-\alpha}$. The analytical computation of the conditions on which the necessary dependence of the amplification coefficient on temperature is obtained is very complicated, and no such method of computation can be found in literature. The present work describes the graphical method of computing the thermocompensation of amplifiers on plane triodes as well as the method for the determination of the amplification coefficient of a cascade without thermostabilization.

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Radiotechnika, 11, fasc.10, 18-24 (1956) CARD 2 / 2 PA - 1592

For the computation of the dependence of the amplification coefficient on temperature in the case of a cascade without thermostabilization for the two temperatures, in one case 20° C and then for the t-value the maximum working temperature corresponding to the greatest modification of the triode values and its properties, is taken. The first is taken, because the properties of the triode, including the current I_{ko}, undergo the greatest modifications within the domain of t $\geqslant$ 20° C. The graphical method explained here is best employed in the inverse order, in which case the location of the place of operation is assumed to be at 50° C, and it is sought for 20° C. In this way it is easy to determine the conditions at which amplification will continue to grow with rising temperature. The graphical method of computing the amplifier with thermocompensation elements is demonstrated on the basis of an example in connection with which the amplification coefficient of the cascade is supposed to remain constant from -50° C to + 50° C.

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VOYSHVILLO, N.A.

Coherent scattering of light in glass. Opt. i spektr. 12 no.3: 412-418 Mr '62. (MIRA 15:3)
(Light--Scattering) (Glass)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, N.A.

Spectrophotometric and photometric characteristics of MS 14 opal glass. Opt. i spektr. 12 no.3:443-445 Mr '62. (MIRA 15:3)
(Spectrophotometry) (Glass)

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GLOZMAN, L.P., inzh.; VOYSHVILLO, V.I., inzh.; TKACHENKO, P.Z., inzh.

New design of an oil deflector for compressors. Khim.mashinostr. no.5:35 S-O '63. (MIRA 16:10)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSKOVSKAYA, M. G.

USSR/ Chemistry - Petroleum 21 Oct 51

"Transformation of Esters Under the Influence of Aluminosilicates," R. D. Obolentsev, Yu. N. Usov, M. G. Voyskovskaya, Saratov State U imeni N. G. Chernyshevskiy

"Dok Ak Nauk SSSR" Vol LXXX, No 6, pp 889-892

Natural clays act as catalysts in a way similar to aluminosilicates on the following esters: ethyl formate, ethyl acetate, ethyl benzoate, methyl benzoate, and isoamyl acetate, transforming them in part into unsatd hydrocarbons. Transformations of this type under the catalytic action of clay and the effect of high temps may have played a role in the formation of natural petroleum occurrences.

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ACCESSION NR: AP4035483 S/0051/64/016/005/0905/0907

AUTHOR: Voyshvillo, N.A.; Smolkin, M.N.

TITLE: Concerning the use of opal glass as the standard in measuring reflection coefficients

SOURCE: Optika i spektroskopiya, v.16, no.5, 1964, 905-907

TOPIC TAGS: light reflection, opal glass, milky glass, MS-14 glass, pyroceramic

ABSTRACT: The reflection of different substances is usually measured with reference to some standard, whose reflection coefficient is known. Compressed white powders and magnesium oxide coatings have commonly been employed as such standards, but recently increasing use has been made of opal (milky) glass, produced and sold under the designation MS-14 (MC-14). The advantages and some of the characteristics of MS-14 glass as a reflection standard are discussed in the present paper. Among its advantages is stability in time. Measurements of samples over a period of two and a half years showed no noticeable change in the reflection. In view of variations in founding technology and the raw materials there is some scatter of the reflection characteristics of MS-14 produced at different times (from different batches). By

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ACCESSION NR: AP4035483

now there have been established two grades, as determined by measurement against a permanent master standard, which has a reflection coefficient of 93.5% for radiation from a source with a color temperature of 3000°K. According to specifications, grade I MS-14 glass should have a reflection coefficient of 98%; grade II a coefficient of 96% (for all wavelengths in the visible region). Measurements by the authors showed, however, that the coefficients of different samples, from batches founded at different times, vary in the range of 4%. Hence, where high accuracy is important, grade I should be specified in ordering. Other measurements in the 0.8 to 2.8 μ region indicate the MS-14 glass can also be used as a standard in the near infrared. Other suitable materials for this purpose are opaque pyroceramics (reflection versus infrared wavelength curves are shown for several different samples of MS-14 glass and two pyroceramics [Abstractor's note: no designation or specifications given]). "L.I.Pavlova, A.M.Nikiticheva and N.N.Novopl'skiy participated in the measurements of the reflection coefficients of the MS-14 glass samples and pyroceramics; the authors take this opportunity to thank them." Orig.art.has: 2 figures.

ASSOCIATION: none

SUBMITTED: 06Jul63 DATE ACQ: 22May64 ENCL: 00

SUB CODE: OP NR REF SOV: 002 OTHER: 000

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Voyshvillo, N.A.

S/072/60/000/03/021/025
B003/B008

AUTHOR: Syritskaya, Z. M.

TITLE: 3rd All-Union Conference on the Vitreous State

PERIODICAL: Steklo i keramika, 1960, Nr 3, pp 43-46 (USSR)

ABSTRACT: The 3rd All-Union Conference on the Vitreous State was held in Leningrad at the end of 1959. It was organized by the Institut khimii silikatov AN SSSR (Institute of the Chemistry of Silicates AN USSR), Vsesoyuznoye khimicheskoye obshchestvo imeni D. I. Mendeleyeva (All-Union Chemical Society imeni D. I. Mendeleyev) and Gosudarstvennyy opticheskiy institut imeni S. I. Vavilova (State Optical Institute imeni S. I. Vavilov). More than 100 reports on the structure of glass, investigation methods of the vitreous state, the mechanism of vitrification and physicochemical and technical properties of glasses were delivered. The Conference was opened by Academician A. A. Lebedev. Fundamental investigation methods and results concerning the glass structure were discussed at the 1st meeting. Academician A. A. Lebedev reported on possibilities and results of optical methods, Ye. A. Poray-Koshits on the diffraction method, K. S. Yevstrop'yev on general problems concerning structure and properties of glasses. The 2nd meeting produced 5 reports on the problem of the vitreous state: R. L. Mueller, "Chemical Peculiarities of Polymeric Vitreous Materials and the Nature of Vitrification"; N. A. Gurynova and B. T. Kolomiyets, "On the Problems of Conformities of the Vitrification"; V. V. Tarasov, "Glass as a Polymer"; A. N. Dauval'ter, "Theory of Glass Structure"; A. G. Vlasov, "Natural Oscillations of the Glass Lattice". The 3rd meeting produced 9 reports on investigation results of silicate melts and on problems of the mechanism of vitrification: A. I. Avgustinik, "On the Problem of the Formation of the Crystalline Phase From the Silicate Melt"; O. K. Botvinkin, "Process of Vitrification and the Structure of Glass"; B. M. Leninskikh, O. A. Yesin and V. I. Mosikhin, "On the Structure of Melts"; I. T. Sryvalkin and O. A. Yesin, "Thermodynamic Properties of the Silicate Systems FeO - CaO - SiO_2 and CaO - Al_2O_3 - SiO_2"; G. M. Bartenev, "Mechanical and Structural Vitrification"; M. W. Vol'kenshteyn, "Mechanism of Vitrification". At the 4th meeting, 13 reports dealt with problems of the glass structure and optical investigation methods: V. A. Florinskaya, "Infrared Reflection Spectra of Sodium Silicate Glasses and Their Relations to the Structure"; Ya. S. Bobovich and T. P. Tulub, "Smekal-Raman Dispersion of Light and the Structure of Some Silicate Glasses"; V. A. Kolesova, "Investigation of the Vibrational Spectra of Aluminosilicate Glasses"; N. N. Sobolev reported on the work of the Fizicheskiy Institut AN SSSR (Institute of Physics AN USSR) with glasses from one component, with the help of infrared spectrophotometry and the Smekal-Raman dispersion; T. A. Sidorov reported on the molecular structure and the properties of the crystalline quartz; S. M. Brekhovskikh and V. P. Cheremisinov reported on structural investigations of lead- and bismuthborate glasses with the aid of infrared spectroscopy; A. G. Vlasov, "The Quantitative Relation of the Orderly and Irregular Phase in Glass"; G. O. Pavlyk'yante and A. G. Alekseyev, "Electronographic Investigation of the Structure of Glasses"; N. A. Voyshvillo, "On the Structure of a Sodium-boron-silicate Glass Submitted to Enduring Thermal Treatment"; N. S. Andreyev, V. I. Aver'yanov, N. A. Voyshvillo, "Structural Interpretation of the Anormal Dispersion of the Visible Light in Sodium-boron-silicate Glasses". At the 5th meeting, 9 reports dealt with the investigation results of sodium-boron-silicate glasses. A. A. Appen and Can' Fu-Si, "Boron and Aluminoboron Anomaly of the Properties of Silicate Glasses"; Ye. I. Calant, "On the Coordination Numbers of Aluminum and Boron in Some Glasses"; S. P. Khdanov reported on structural changes in boron-silicate glasses; Ye. A. Poray-Koshits and S. P. Khdanov reported on some controversial problems concerning the structure of boron-silicate glasses and their porous products; Ye. A. Poray-Koshits and N. S. Andreyev, "Submicroscopic Inhomogeneities in the Structure of Complex Glasses". The 15 reports at

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Voysavilla, N.A.

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Vsesoyuznoye soveshchaniye po steklookhrannomu sostoyaniyu. 3d, Leningrad, 1959.

Stekloobraznoye sostoyaniye; trudy Tret'yego vsesoyuznogo soveshchaniya Leningrad, 16-20 noyabrya 1959 (Vitreous State; Transactions of the Third All-Union Conference on the Vitreous State, Held in Leningrad on November 16-20, 1959) Moscow, Izd-vo AN SSSR, 1960. 554 p. Errata slip inserted. 3,200 copies printed. (Series: Its: Trudy)

Sponsoring Agencies: Institut khimii silikatov Akademii nauk SSSR. Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva and Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I. Vavilova.

Editorial Board: A.I. Avgustinik, V.P. Bartenevskiy, M.A. Bezborodov, O.K. Botvinkin, V.V.Vargin, A.G. Vlasov, K.S. Yevstrop'yev, A.A. Lebedev, M.I. Matveyev, V.S. Molchanov, R.L. Myuller, Ye.A. Poray-Koshits, Chairman, N.A. Toropov, V.A. Florinskaya, A.K. Yakhkind; Ed. of Publishing House: I.V. Savarov; Tech. Ed.: V.T. Bochever.

PURPOSE: This book is intended for researchers in the science and technology of glasses.

COVERAGE: The book contains the reports and discussions of the Third All-Union Conference on the Vitreous State, held in Leningrad on November 16-19, 1959. They deal with the method and results of studying the structure of glasses, the relation between the structure and properties of glasses, the nature of the chemical bond and glass structure, and the crystallochemistry of glass. Fused silica, mechanism of vitrification, optical properties and glass structure, and the electrical properties of glasses are also discussed. A number of the reports deal with the dependence of glass properties on composition, the tinting of glasses and radiation effects, and mechanical, technical, and chemical properties of glasses. Other papers treat glass semiconductors and some borosilicate glasses. The Conference was attended by more than 300 delegates from Soviet and East German scientific organizations. Among the participants in the discussions were N.V. Solomin, Ye. V. Kuvshinskiy, Ye.A. Gastev, V.P. Pryanishnikov, Yu. Ya. Gotlib, O.P. Mchedlov-Petrosyan, G.P. Mikhaylov, S.M. Petrov, A.N. Lazarev, D.I. Levin, A.V. Shatilov, N.T. Ploshchinskiy, A.Ye. Kuznetsov, E.V. Degtyareva, G.V. Byurganovskaya, A.A. Kulenov, M.M. Skoryatov, P.Ya. Ponis, E.K. Keller, Ya.A. Kuznetsov, V.P. Pozdsev, R.S. Shevelevich, Z.G. Pinsker, and O.S. Molchanova. The final session of the Conference was addressed by Professor I.I. Kitaygorodskiy, Honored Scientist and Engineer, Doctor of Technical Sciences. The following institutes were cited for their contribution to the development of glass science and technology: Gosudarstvennyy opticheskiy institut (State Optical Institute), Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry, AS USSR), Fizicheskiy institut AN SSSR (Physics Institute AS USSR), Fiziko-tekhnicheskiy institut AN SSSR (Physicotechnical Institute AS USSR), Institut fiziki AN BSSR, Minsk (Institute of Physics, Academy of Sciences, Belorusskaya SSR, Minsk), Laboratory of Physical Chemistry of Silicates of the Institut obshchey i neorganicheskoy khimii AN SSSR, Minsk (Institute of General and Inorganic Chemistry, Academy of Sciences, Belorusskaya SSR, Minsk), Institut vysokomolekulyarnykh soyedineniy AN SSSR(Institute of High Molecular Compounds, AS USSR), Gosudarstvennyy institut stekla (State Institute for Glass), Gosudarstvennyy institut elektrotekhnicheskogo stekla (State Institute for Glass Fibers), Gosudarstvennyy institut elektrotekhnicheskoy institut (State Institute for Electrical Glass), Sibirskiy fiziko-tekhnicheskiy institut, Tomsk (Siberian Physicotechnical Institute, Tomsk), Leningradskiy gosudarstvennyy universitet (Leningrad State University), Moskovskiy khimiko-tekhnologicheskiy institut (Moscow Institute of Chemical Technology), Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institut imeni Lensovet), Belorusskiy politekhnicheskiy institut Minsk (Belorussian Polytechnic Institute, Minsk), Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnic Institute), and Sverdlovskiy politekhnicheskiy institut (Sverdlovsk Polytechnic Institute). The Conference was sponsored by the Institute of Silicate Chemistry AS USSR (Acting Director - A.S. Gotlib), the Vsesoyuznoye khimicheskoye obshchestvo im. D.I. Mendeleyeva (All-Union Chemical Society imeni D.I. Mendeleyev), and the Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I. Vavilova (State "Order of Lenin" Optical Institute imeni S.I. Vavilov). The 15 resolutions of the Conference include recommendations to organize a Center for the purpose of coordinating the research on glass, to publish a new periodical under the title "Fizika i khimiya stekla" (Physics and Chemistry of Glass), and to join the International Committee on Glass. The Conference thanks A.A. Lebedev, Academician, Professor, and Chairman of the Organization of Committee; Ye.A. Poray-Koshits, Doctor of Physics and Mathematics, Member of the Organizational Committee; and R.L. Myuller, Doctor of Chemical Sciences, Member of the Organizational Committee. The editorial board thanks G.M. Bartenev, M.V. Vol'kenshteyn, L.I. Demkina, D.P. Dobychin, S.K. Dubrovo, V.A. Ioffe, and B.T. Kolomiyets. References accompany individual reports.

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AUTHOR: Voyshvillo, N. A.

TITLE: Coherent scattering of light in glass

PERIODICAL: Optika i spektroskopiya, v.12, no.3, 1962, 412-418

TEXT: Light scattering is discussed taking into consideration the interference interactions of rays scattered by various heterogeneities present within the glass. A similar theory to that of the scattering of X-rays is adopted, and a correlating radial function $\gamma(r)$, characteristic of glass is calculated, using a Fourier transformation and measuring the relation between the scattered light and the indicatrix of scattering at a fixed wavelength. Two sodium borosiiicate glass samples of different scattering indexes were used and the values of the correlating function calculated from the experimental scattering indicatrices for λ 475 mμ, using graphical integration. The resulting curves were oscillating with a rapidly decreasing amplitude giving regions of negative $\gamma(r)$. Purely mathematical function which corresponded to the

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experimental $\gamma(r)$, was also found, viz:

$$\gamma(r)_{(theor.)} = \sum c \frac{\sin qr}{qr} e^{-ar} \qquad (3)$$

and the experimental and theoretical indicatrices compared. Parameter q in the above formula defines the periodicity of the function, and a the interval at which the $\gamma(r)_{(theor.)} \neq 0$. Hence, the smaller the a, the higher the internal order within the structure of a body. With large values of a, $\gamma(r)_{(theor.)}$ degenerates to a case of non-coherent scattering. There are 6 figures.

SUBMITTED: March 15, 1961.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, N.A.

Effect of thermal treatment on the indicatrix of diffusion of light in sodiumborosilicate glasses. Opt.i spektr. 3 no.3:281-288 S '57. (MLRA 10:9)

(Glass, Optical)

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VOYSHVILLO, N.A.

51-3-12/14

AUTHOR: Voyshvillo, N. A.

TITLE: Effect of Thermal Treatment on the Scattering Indicatrix of Sodium Borosilicate Glasses. (Vliyaniye teplovoy obrabotki na indikatrisy rasseyaniya natrovoborosilikatnogo stekla.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.281-288. (USSR)

ABSTRACT: In an earlier paper (Ref.1) the author discussed spectral distribution of scattering of light in sodium borosilicate glasses subjected to various thermal treatments. The scattering coefficient for opalescent glass was found to be $\sigma = K/\lambda^m$, where K is a constant which depends on the scattering medium and λ is the wavelength of the scattered radiation. If in the range 550-720°C temperature or duration of annealing of glass is increased, then increase of opalescence (σ increases from 0.04 to 4.8 mm^{-1}) is accompanied by a fall of m from 8-9 at weak opalescence to 2-3 when the glass is almost milky in

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Effect of Thermal Treatment on the Scattering Indicatrix of Sodium Borosilicate Glasses.

appearance. A suggestion was put forward in Ref.1 that the increase in opalescence is due to an increase of dimensions of the scattering particles. The present paper reports a method and results of measurement of the scattering indicatrix of sodium borosilicate glasses of various degrees of opalescence. Samples were in the form of layers 0.05 mm thick fixed to thick plates of K3 glass. Each sample with its base of K3 glass was placed between two half-cylinders of K3 glass (Fig.1). Complete apparatus used is shown in Fig.2. The main components were the source of light L, a polarizing prism 4 and a deflecting prism 6. After passing through the sample 8 the light was focussed on to the entrance pupil 10 of a visual photometer. In front of the exit pupil 13 of the photometer a color filter 12 was placed to separate out a narrow spectral region. The experiment consisted of measurement of brightness of the light scattered in various directions making an angle γ with the direction of the incident beam (Fig.2). All the samples measured were annealed at 645°C but they were treated for different

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Effect of Thermal Treatment on the Scattering Indicatrix of Sodium Borosilicate Glasses.

lengths of time. Measurements were made for two mutually perpendicular directions of the plane of polarization of the incident light beam. Distribution of the scattered light was investigated in two spectral regions, and for each spectral region measurements were made for normal and oblique positions of the sample with respect to the incident beam (Fig. 1). In this way each sample was measured 8 times. Fig. 3 gives dependence of the relative scattering coefficient on angle γ for samples annealed for 6, 103 and 215 hours at 645°C. Results of Fig. 3 refer to polarization of the incident beam in the scattering plane. Fig. 4 gives similar results for the case when the incident beam is polarized in a plane perpendicular to the scattering plane. Results of Figs. 3 and 4 show that glass annealed for 6 hours scatters most of the incident light in a backward direction. As duration of annealing is increased, i.e., as opalescence increases, the amount of energy scattered forward increases. Curves showing scattering of strongly opalescent samples exhibit a sharp

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Effect of Thermal Treatment on the Scattering Indicatrix of Sodium Borosilicate Glasses.

maximum for a certain direction (about 45° in Figs. 3 and 4). Fig. 5 gives further curves of the scattering indicatrix of samples annealed at 645°C for various lengths of time. The numbers near the curves of Fig. 5 denote duration of annealing in hours. All curves shown in Figs. 3, 4 and 5 refer to illumination by blue light. Fig. 6 gives similar results for red incident light. It can be seen that blue light is scattered backwards more strongly than red light. Comparison of scattering curves in blue and red light leads to the conclusion that with increase of the duration of annealing at 645°C, i.e., with increase of opalescence, the rate of growth in size of the scattering particle slows down. At annealing temperatures higher than 645° structural changes in glass occur faster. The shape of the scattering curves indicates that the scattering particles have a refractive index not very different in value from the refractive index of transparent glass. The author calculates effective ratio of the scattering particles produced by annealing at 645°C and finds them to be 0.26-0.43 μ for annealing durations 72 to 215 hours.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

51-3-12/14

Effect of Thermal Treatment on the Scattering Indicatrix of Sodium Borosilicate Glasses.

The author thanks M. M. Gurevich for directing the work, and K. S. Shifrin for advice. There are 7 figures, 1 table and 7 references, 3 of which are Slavic.

SUBMITTED: January 11, 1957.

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

S/058/61/000/007/034/086
A001/A101

AUTHORS: Andreyev, N.S., Aver'yanov, V.I., Voyshvillo, N.A.

TITLE: On the role of interparticle interference in anomalous optical phenomena in sodium-boron-silicate glasses

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 163, abstract 7G17 (V sb. "Stekloobrazn. sostoyaniye", Moscow-Leningrad, AN SSSR, 1960, 234 - 238, Discus., 238 - 242)

TEXT: With the aim of explaining anomalous scattering in sodium-boron-silicate glasses (abstract 7G16), the scattering of optical light at large angles is compared with scattering of X-rays at small angles taken into consideration the data on the structure of glasses investigated. The course of curves of scattering intensity, qualitatively the same for optical light and X-rays, leads to a conclusion that the cause of anomalous scattering is interference of rays scattered from different particles which are packed sufficiently densely with some order in their arrangement. A simple model of particle arrangement is adopted for qualitative description, which is characterized by the most prob-

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S/058/61/000/007/034/086
A001/A101

On the role of interparticle interference ...

able separation between the centers of the particles. It is shown by calculations that taking into account interparticle interference permits explanation of all observed phenomena in the framework of the existing theories, in spite of the crudeness of the model.

O. Girin

[Abstracter's note: Complete translation]

Card 2/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

28032
S/081/61/000/015/093/139
B104/B110

15 2510

AUTHOR: Voyshvillo, N. A.

TITLE: Structure of sodium borosilicate glass subjected to protracted heat treatment

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1961, 367, abstract 15K276 (Sb. "Stekloobrazn. sostoyaniye". M.-L., AN SSSR, 1960, 511-514, Diskus., 522-524)

TEXT: Non-lixiviated glass of the following composition (in mole%) was examined: Na_2O 6.9, B_2O_3 23.9, SiO_2 69. A study of the light scattered by this glass provided information on the glass structure. This method is based on the ability of Na-B silicate glass to opalize after a heat treatment between 550 and 730°C. This opalizing is caused by inhomogeneous regions in the glass. The effective radius (R_{eff}) of the scattering inhomogeneities was determined. It was regarded as a parameter characterizing the glass structure at a given heat treatment. Protracting the heat

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B104/B110

Structure of sodium borosilicate...

treatment at a constant temperature (645°C) causes R_{eff} to change within 0.20 - 0.48μ. An empirical formula, which describes the change of R_{eff} as a function of the time of heat treatment is presented. The total volume of the scattering particles of a phase remains constant in samples heat-treated for different times. A number of very turbid glass samples was examined under a phase microscope, and conclusions were thus reached regarding the character of glass separation into two phases, the particle size in either phase, and changes in size under heat treatment. 9 references. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, N.A.

Scattering of light by porous glass. Inzh.-fiz.zhur. no.4:40-45 Ap '58. (MIRA 11:7)

(Light--Scattering)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

51-3-13/24

AUTHOR: Voyshvillo, N.A.

TITLE: Effect of thermal treatment on the scattering properties of sodium-borosilicate glass. (Vliyaniye teplovoy obrabotki na rasseivayushchiye svoystva natrovoborosilikatnogo stekla).

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy), 1957, Vol.2, No.3, pp.371-376 (U.S.S.R.)

ABSTRACT: Glass of the composition: 7% Na_2O, 23% B_2O_3, 70% SiO_2 was first studied by M. M. Gurevich (Zh. Tekh. Fiz., Vol.23, p.986, 1953). This glass becomes opalescent at 550 to 730 C. Increase of the thermal-treatment duration and increase of temperature of the treatment both enhance the opalescent scattering of light by this glass. The scattering coefficient is given by $\sigma = k\lambda^{-m}$, where λ = wavelength, k and m are constants which depend on λ (for small spectral intervals k and m can be taken to be independent of λ). Gurevich found $m \sim 8$, which is twice the value of m (~ 4) for the Rayleigh scattering. The present author studied the effect of thermal treatment on the scattering properties of the same glass. Three groups of samples (flat plates) were used: I (9 samples) heated for 6 hours at various temperatures from 600 C to 735 C; II (13 samples) heated at 645 C for from 6 to 215 hours; III (9 samples) heated at 600 C for from 6 to 215 hours.

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Effect of thermal treatment on the scattering properties of sodium-borosilicate glass. (Cont.) 51-3-13/24

Transmission of samples in visible light (400 to 740 mμ) was measured by a spectro-photometer, and the scattering coefficient σ and the value of m were calculated. The results show that σ, i.e. the opalescence, increases with temperature for the same duration of the heat treatment and it increases with the duration of treatment at the same temperature. In both cases this increase of σ is accompanied by a fall of m from 8-9 to about 2.5 for the highest temperatures and the longest durations of treatment. At the same time as m falls the angular distribution of the scattered light alters. From predominantly backward scattering for m = 8-9 it changes to forward scattering at $m \sim 2.5$. These effects are explained by precipitation of larger scattering particles by the heat treatment of the glass. The work was done under Prof. M. M. Gurevich. There are 7 figures and 6 references, all of which are Slavic.

Card 2/2

SUBMITTED: July 6, 1956.

AVAILABLE:

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHVILLO, N.A.; SMOLKIN, M.N.

Use of milky glass for reflection standards. Opt. i spektr. 16 no.5:905-907 My '64. (MIRA 17:9)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

ANDREYEV, N.S.; AVER'YANOV, V.I.; VOYSHVILLO, N.A.

Structural interpretation of anomalous diffusion of visible light in sodium borosilicate glasses. Fiz. tver. tela 2 no.5:1011-1021 My '60. (MIRA 13:10)

1. Institut khimii silikatov AN SSSR, i Gosudarstvennyy opticheskiy intitut im. S.I. Vavilova.

(Glass--Optical properties)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

KOGAN, Leonid M.; VOYSHVILLO, N.Ye.; SKRYABIN, G.K.; TORGOV, I.V.

Hydroxylation of steroids - a new reaction for actinomycetes. Dokl. AN SSSR 160 no.2:346-348 Ja '65.

(MIRA 18:2)

1. Institut khimii prirodnykh soyedineniy AN SSSR. Submitted August 28, 1964.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

KOGAN, L.M.; VOLKOVA, I.M.; VOYSHVILLO, N.Ye.; TORGOV, I.V.; SKRYABIN, G.K.

Transformation of estradiol into estrone by actinomycetes. Izv. AN SSSR. Ser. biol. no.2:285-287 Mr-Ap '65.

(MIRA 18:4)

1. Institute of Chemistry of Natural Compounds and Institute of Microbiology, Academy of Sciences of the U.S.S.R., Moscow.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

KOGAN, Leonid,M.; YELIN, E.A.; VOYSHVILLO, N.Ye.

Substrate specificity of microbiological transformations of steroids induced with the help of Actinomyces albus 3006. Dokl. AN SSSR 159 no.4:926-927 D '64 (MIRA 18:1)

1. Institut khimii prirodnykh soyedineniy AN SSSR. Predstavleno akademikom M.M. Shemyakinym.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

YEMEL'YANOV, P.S., prof.; VOLCHVILO, V.V., inzh.

Causes of the contamination of flotation concentrates by finely dispersed minerals. Izv. vys. ucheb. zav.; gor. zhur. 8 no.7: 197-200 '65. (MIRA 18:9)

1. Khar'kovskiy institut gornogo mashinostroyeniya, avtomatiki i vychislitel'noy tekhniki. Rekomendovana kafedroy obogashchaniya poleznykh iskopayemykh.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120007-5

VOYSHILLO, V.V.; LEV, A.L.; SHEBANOV, V.A.

Coal flotation. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst. nauch.i tekh.inform. no.2:84-85 '63. (MIRA 16:2)
(Flotation)

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