"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENIN, YEGENIY VLADIMIROVICH

ZELENIN, Yevgeniy Vladimirovich; MEVSKIY, B.A., redaktor; TUMARKINA, N.A., tekhnicheskiy redaktor

[Mechanical drawing] Cherchenie. Moskva, Gos.izd-vo tekhniko-teoret.lit-ry, 1957. 388 p. (MLRA 10:9)
(Mechanical drawing)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENIN, YEVGENIY VLADIMIROVICH

ZELENIN, Yevgeniy Vladimirovich; RODIONOVA, Z.A., red.; NEVSKIY, B.A., red.; SMIRNOV, G.I., tekhn.red.

[Mechanical drawing in secondary schools; a manual for drawing teachers] Cherchenie v srednei shkole; v pomoshch' uchitelyu cherchenila. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1957. 510 p. (MIRA 11:1)
(Mechanical drawing--Study and teaching)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENIN, Ya. V.

First steps for acquiring drawing skill in school workshops. Politekh. obuch. no.1:65-70 Ja '57. (MLRA 10:4)
(Mechanical drawing--Study and teaching)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENIN, Yevgeniy Vladimirovich; SOLODKOV, V.A., red.; KOLESNIKOVA, A.P., tekhn. red.

[Course in projective geometry including problems and exercises] Kurs nachertatel'noi geometrii s zadachami i uprazhneniiami. Izd.2., dop. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 392 p. (MIRA 15:2)

(Geometry, Projective)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENIN, Yevgeniy Vladimirovich; LAPKO, A.F., red.; RYVKIN, A.Z., red.; BRUDNO, K.F.

[Elementary manual on mechanical drawing] Elementarnyi spravochnik po cherchheniiu. Moskva, Fizmatgiz, 1963. 254 p. (MIRA 16:10)

(Mechanical drawing)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, Ye.V.; VOLODIN, V.I.; ANTONOV, B.I., red.

[Machinery for the coal industry] Mashiny dlia ugol'noi promyshlennosti. Moskva, Nedra, 1964. 299 p.
(MIRA 17:12)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENIN, Yu. N. (Co-author)

See: PLEVAKO, Ye. A.

Plevako, Ye. A. and Zelenin, Yu. N. "Growing yeats in concentrated mashes," Pishch. prom-st' SSSR, Issue 12, 1949, p. 3-5

SO: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, A., tr.

KNAUSS, Robe rt. 1892- Translation of his: Luftkrieg 1936. Perevod s nemetskogo. Izd. 2. Moskva, Gos. voen. izd-vo, 1934. 160 p. maps. (43-31552)

UG630.K58 1934

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

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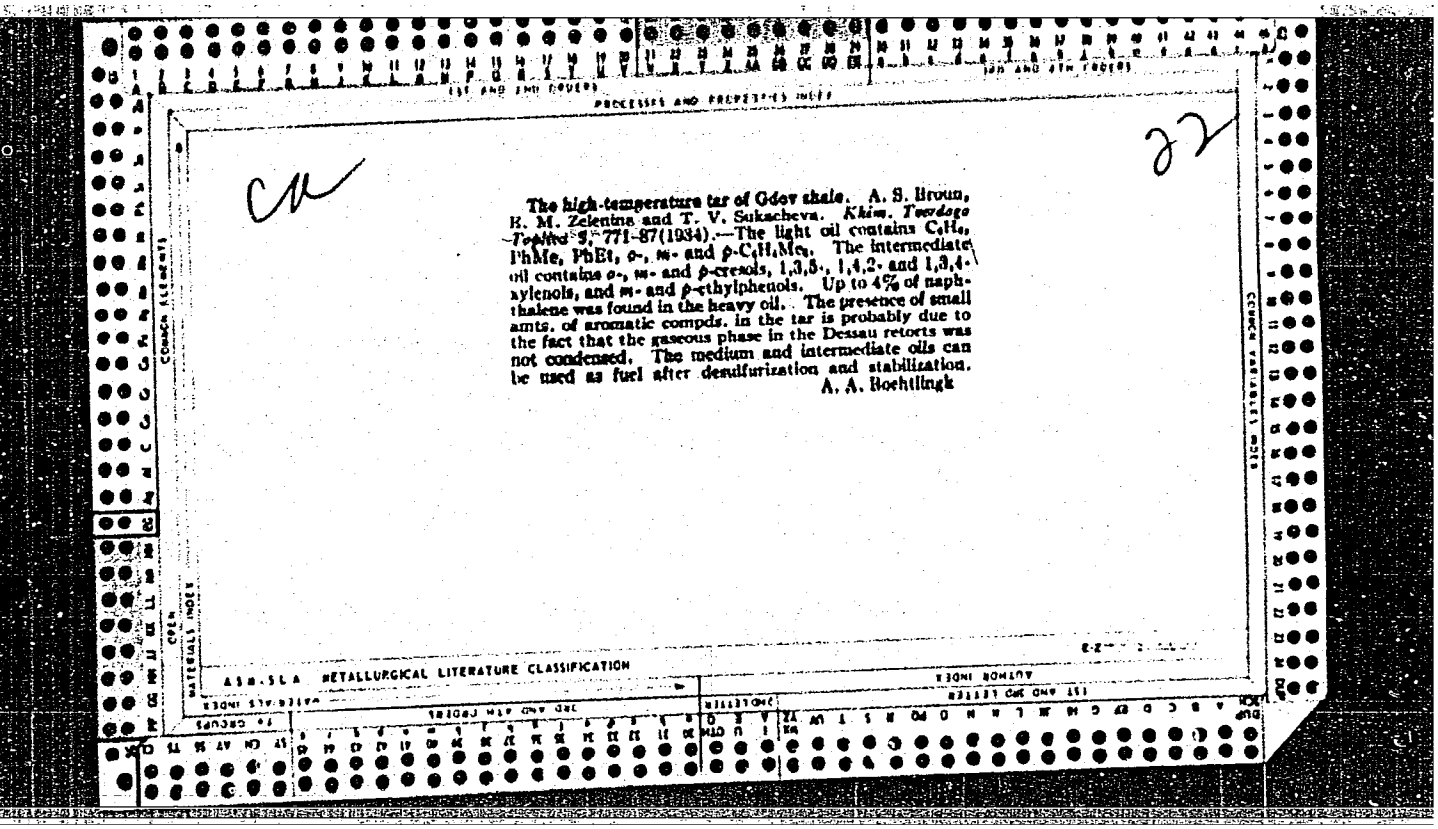
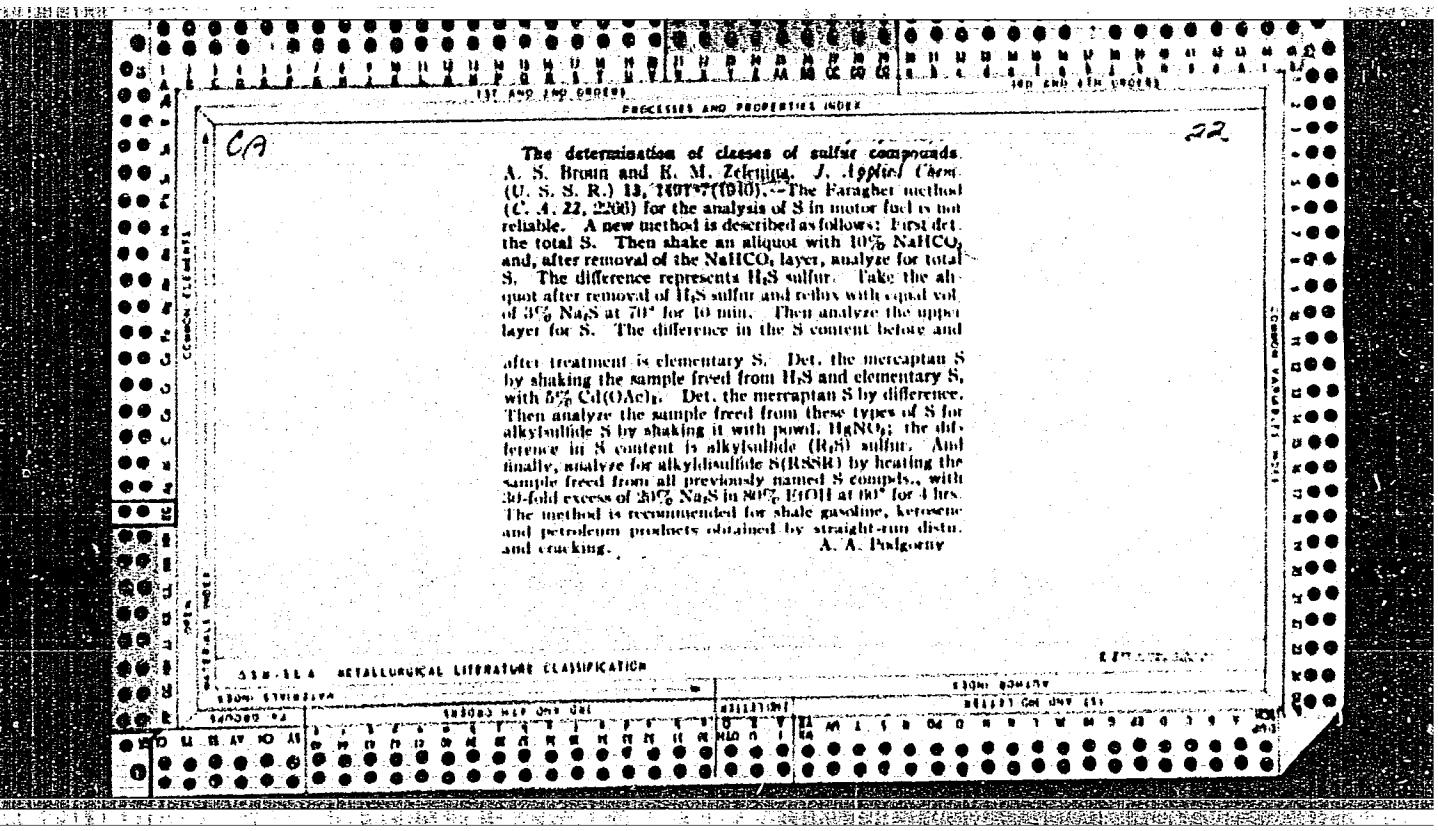


The high-temperature tar of Gdov shale. A. S. Broun, E. M. Zelentina and T. V. Sukacheva. *Khim. Tverdogo Topliva* 5, 771-87(1934).—The light oil contains C_6H_6, PhMe, PhEt, o-, m- and p-$C_6H_4Me_2$. The intermediate oil contains o-, m- and p-cresols, 1,3,5-, 1,4,2- and 1,3,4-xylenols, and m- and p-ethylphenols. Up to 4% of naphthalene was found in the heavy oil. The presence of small amts. of aromatic compds. in the tar is probably due to the fact that the gaseous phase in the Dessau retorts was not condensed. The medium and intermediate oils can be used as fuel after desulfurization and stabilization.
A. A. Boehtlingk

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

1ST AND 2ND ORDERS



PROCESSES AND PROPERTIES INDEX

CA

22

The determination of classes of sulfur compounds. A. S. Broun and E. M. Zelenina. *J. Applied Chem.* (U. S. S. R.) 13, 1491-7(1940).—The Faragher method (*C. A.* 22, 2266) for the analysis of S in motor fuel is not reliable. A new method is described as follows: First det. the total S. Then shake an aliquot with 10% $NaHCO_3$ and, after removal of the $NaHCO_3$ layer, analyze for total S. The difference represents H_2S sulfur. Take the aliquot after removal of H_2S sulfur and reflux with equal vol. of 3% Na_2S at 70° for 10 min. Then analyze the upper layer for S. The difference in the S content before and after treatment is elementary S. Det. the mercaptan S by shaking the sample freed from H_2S and elementary S, with 5% $Cd(OAc)_2$. Det. the mercaptan S by difference. Then analyze the sample freed from these types of S for alkylsulfide S by shaking it with powd. $HgNO_3$; the difference in S content is alkylsulfide (R_2S) sulfur. And finally, analyze for alkyldisulfide S(RSSR) by heating the sample freed from all previously named S compds., with 30-fold excess of 20% Na_2S in 80% EtOH at 60° for 4 hrs. The method is recommended for shale gasoline, kerosene and petroleum products obtained by straight-run distn. and cracking.

A. A. Podgorny

USM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

POLOZOVA, Ye.V., promyshlenno-sanitarnyy vrach; KAMALOV, A.K.;
ZELENINA, D.M., promyshlennyy laborant

Industrial noise in factories. Tekst.prom. 21 no.9:77 S '61.
(MIRA 14:10)

1. Glavnyy vrach medsanchasti Tashkentskogo tekstil'nogo kombinata (for Kamalov).

(Noise) (Industrial hygiene)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, E. S.

NAZAROV, F.V., inzhener; ZELENINA, E.S.

Conference of heavy-machinery industrial designers. Mashinostroitel' no.2:41-42 F '57. (MLRA 10:5)
(Machinery--Design)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

1. ZELENINA, I.N.

2. USSR (600)

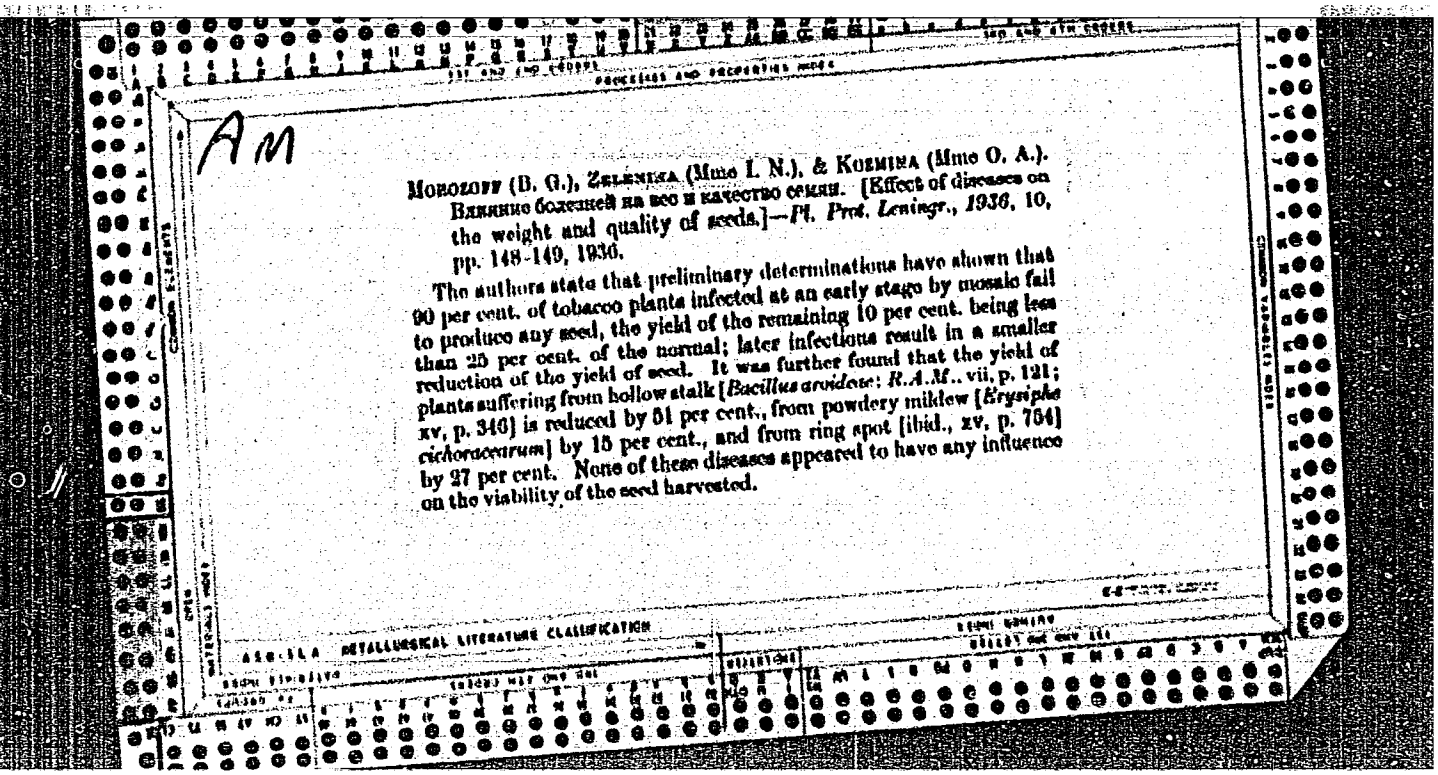
4. Wine and Wine making

7. Effect of alcohol concentration on activity of yeast. Vin. SSSR 12, No. 12, 1952.

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

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5



AM

Morozoff (B. G.), Zelenska (Mme L. N.), & Kuemina (Mme O. A.). Влияние болезней на вес и качество семян. [Effect of diseases on the weight and quality of seeds.]—*Pl. Prot. Leningr.*, *1936*, 10, pp. 148-149, 1936.

The authors state that preliminary determinations have shown that 90 per cent. of tobacco plants infected at an early stage by mosaic fail to produce any seed, the yield of the remaining 10 per cent. being less than 25 per cent. of the normal; later infections result in a smaller reduction of the yield of seed. It was further found that the yield of plants suffering from hollow stalk [*Bacillus aroideae*: *R.A.M.*, vii, p. 121; xv, p. 346] is reduced by 51 per cent., from powdery mildew [*Erysiphe cichoracearum*] by 15 per cent., and from ring spot [ibid., xv, p. 754] by 27 per cent. None of these diseases appeared to have any influence on the viability of the seed harvested.

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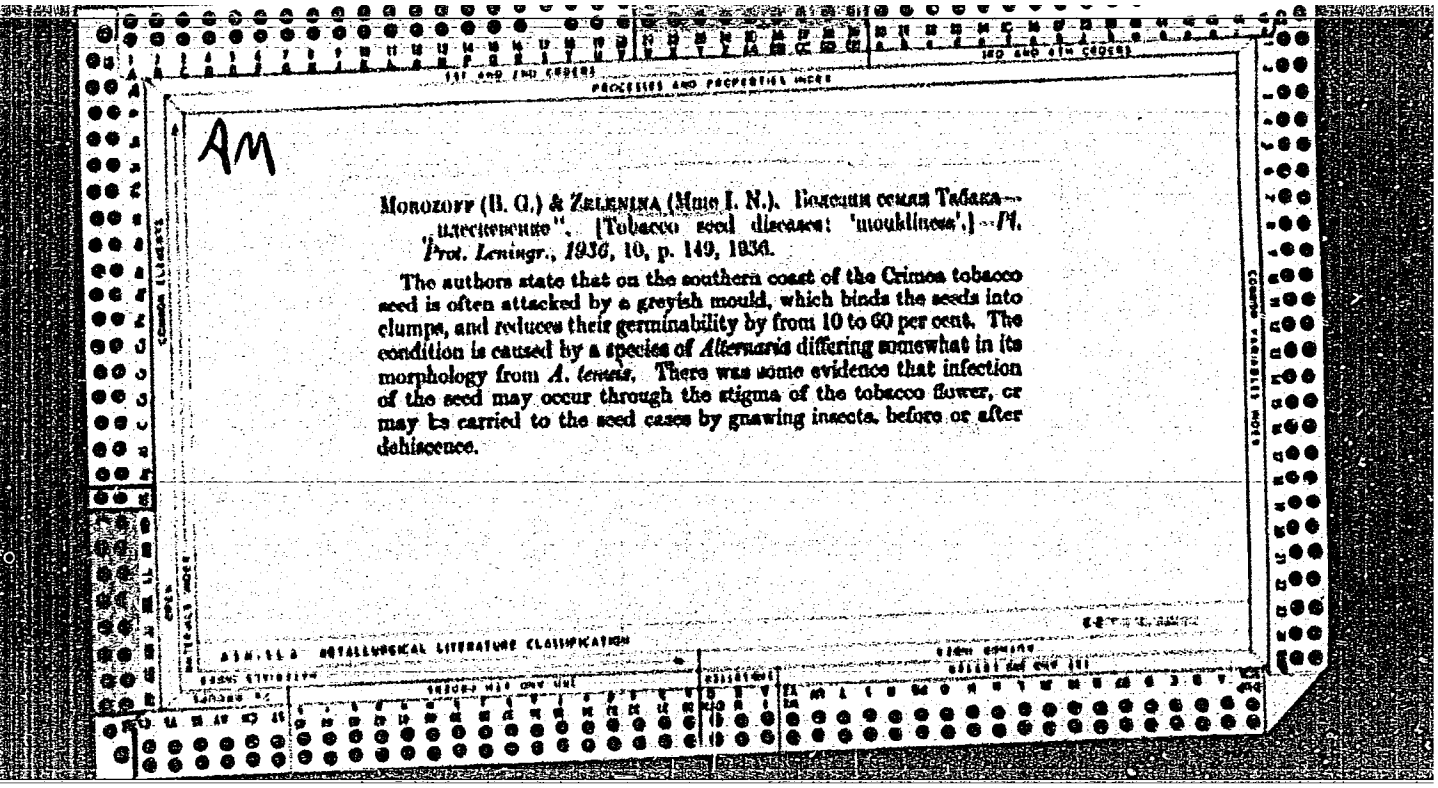

AM

Morozoff (B. G.) & Zelenina (Miss I. N.). Болезни семян Табака—"плесневение". [Tobacco seed diseases: 'mouldiness'.]—*Fl. Prot. Leningr.*, *1936*, 10, p. 149, 1936.

The authors state that on the southern coast of the Crimea tobacco seed is often attacked by a greyish mould, which binds the seeds into clumps, and reduces their germinability by from 10 to 60 per cent. The condition is caused by a species of *Alternaria* differing somewhat in its morphology from *A. tenuis*. There was some evidence that infection of the seed may occur through the stigma of the tobacco flower, or may be carried to the seed cases by gnawing insects, before or after dehiscence.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

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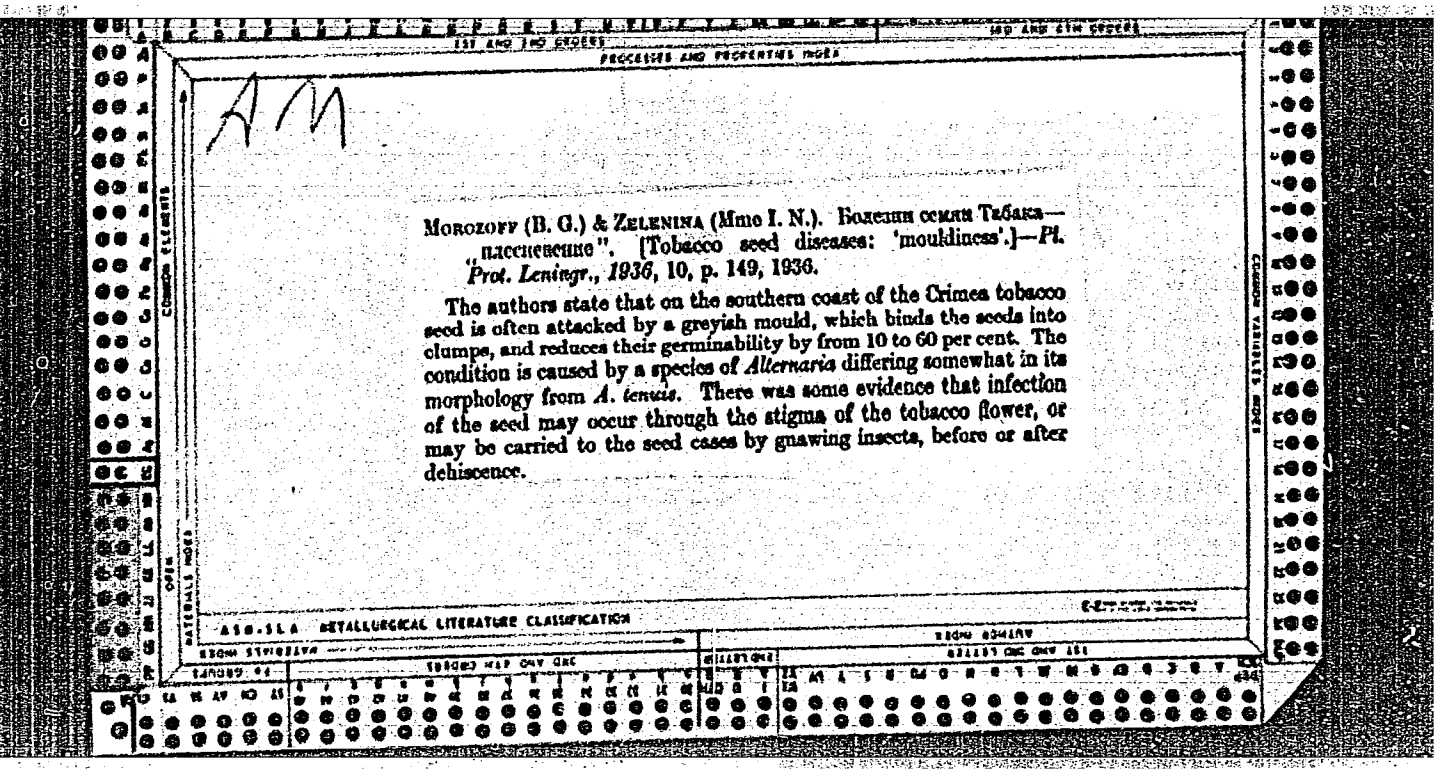

Morozoff (B. G.) & Zelenina (Mme I. N.). Болезни семян Табака—"плесневение". [Tobacco seed diseases: 'mouldiness'.]—*Pl. Prot. Leningr.*, *1936*, 10, p. 149, 1936.

The authors state that on the southern coast of the Crimea tobacco seed is often attacked by a greyish mould, which binds the seeds into clumps, and reduces their germinability by from 10 to 60 per cent. The condition is caused by a species of *Alternaria* differing somewhat in its morphology from *A. tenuis*. There was some evidence that infection of the seed may occur through the stigma of the tobacco flower, or may be carried to the seed cases by gnawing insects, before or after dehiscence.

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

L 31613-66 EWT(m) DS/RM

ACC NR: AP6026579 SOURCE CODE: UR/0191/66/000/002/0057/0059

AUTHOR: Kreshkov, A. P.; Yarovenko, A. N.; Zelenina, L. N. 33 B

ORG: none

TITLE: Swelling and absorption capacity of ion-exchange resins in nonaqueous media

SOURCE: Plasticheskiye massy, no. 2, 1966, 57-59

TOPIC TAGS: nonaqueous solution, ion exchange resin, methanol, acetone, temperature dependence, cation, anion exchange resin, titrimetry

ABSTRACT: The swelling and exchange capacity of ion-exchange resins (the strongly acidic cation-exchange resin SDV-3 in the H-form and the strongly basic anion-exchange resin AV-17 in the Cl-form) were studied in nonaqueous solvents at various temperatures. The temperature dependence of the swelling of the ion-exchange resins in methanol medium was characterized by a convex curve with a maximum corresponding to 16°C; it depended on many factors, including the individual properties of the resin and solvent. The process of swelling was accompanied by diffusion and adsorption of the solvent, which are influenced oppositely by temperature. The swelling behavior was also studied in acetone. The absorption capacity of the ion-exchange resins was determined under dynamic conditions, retaining a constant rate of flow in the column, uniformly filled with the ion-exchange resin. The temperature dependence of the absorption capacities of the cation and anion-exchange resins

Card 1/2 UDC: 661:183.123

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L 34613-66

ACC NR: AP6026579

0

was found to differ; there was also a difference in the dependence of their capacities on the swelling. It was hypothesized that in the case of cation exchange the absorbed solvent in the pores of the swollen ion-exchange resin interferes with the penetration of cations to the active groups, the dynamic exchange capacity therefore increasing with increasing temperature and the swelling decreasing. In the case of anion exchange the molecules of adsorbed solvent promote an increase in the rate of exchange. The exchange capacity of the anion-exchange resin and its swelling reach a maximum at 20°C. The behavior of the cation-exchange resin in nonaqueous media was also studied by potentiometric titration, in which the cation-exchange resin was found to behave as a strong acid, with an exchange capacity of three milligram equivalents per gram. Orig. art. has: 5 figures and 1 table. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 006

Card 2/2

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

KREshkov, A.P.; YAROVENKO, A.N.; SAYUSHKINA, Ye.N.; ZELENINA, L.N.

Using the method of differential titration in nonaqueous solutions for the determination of salts. Izv.vys.ucheb.zav.; khim. i khim. tekh. 8 no.2:196-202 '65. (MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva, kafedra analiticheskoy khimii.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, M. N.

DOMNIN, N.A.; ZELENINA, M.N.; OLEHOVSKAYA, N.S.

Studies in the field of polymethylene cycles. Part 28: Investigation of the products of reactions of acetonylacetone with hydrazine. Zhur. ob. khim. 27 no.8:2088-2093 Ag '57. (MLRA 10:9)

1. Leningradskiy gosudarstvennyy universitet.
(Hexanedione) (Hydrazine)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, M.N.

DOMNIN, N.A.; ZELENINA, M.N.; GLEBOVSKAYA, N.S.

Research in the field of polymethylene cycle. Part 27: Reactions and products of 1,4-cyclohexanedione and acetomylacetone with hydrazine and dimethylhydrazine. Zhur. ob. khim. 27 no.6:1516-1518 Je '57. (MLRA 10:8)

1. Leningradskiy gosudarstvennyy universitet.
(Cyclohexadione)(Hydrazine) (Hexanedione)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

81934
S/062/60/000/06/05/011
B020/B061

5.3700C

AUTHORS: Kropachev, V. A. Dolgoplosk, B. A., Geller, N. M., Zelenina, M. N.

TITLE: Reactions Between Organo-metallic Compounds and Heavy Metal Salts. II. Interaction of Lithium-ethyl With Cobalt and Titanium Halides

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniya khimicheskikh nauk, 1960, No. 6, pp. 1044 - 1048

TEXT: The reaction of ethyl-lithium with titanium tetrachloride and cobalt chloride is examined here at 20° in hydrocarbon solvents and in the presence of unsaturated hydrocarbons as free-radical acceptors. In the case of radical stages, the said reaction cannot lead to the formation of ethane and ethylene. Similarly, the reaction of organo-magnesium compounds with metal halides was examined earlier (Ref. 12). All reactions were carried out in solutions (in benzene, metaxylol) at 20°. In connection with the fact that α-methylstyrene polymerizes under reaction conditions on the

Card 1/3

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81934

Reactions Between Organo-metallic Compounds and Heavy Metal Salts. II. Interaction of Lithium-ethyl With Cobalt and Titanium Halides

S/062/60/000/06/05/011
B020/B061

action of the ethyl-lithium and $TiCl_4$, the α-methylstyrene was gradually introduced to the reaction mixture, thus maintaining a sufficient quantity of free olefin in the mixture at all times. The products of the reaction of ethyl-lithium with cobalt chloride (Table 1) and with $TiCl_4$ (Table 2) at 20° are given. On the reaction of ethyl-lithium with cobalt chloride, equimolar quantities of ethane and ethylene are liberated, whilst only ethane is liberated when reacting with $TiCl_4$, the ethylene being polymerized. The introduction of acceptors in no case affected the composition of the reaction products. The performance of the experiments is exactly described in the experimental part (Fig. 1, reaction vessel with mixer), and hints are given for carrying out the reaction of ethyl-lithium with $TiCl_4$ and cobalt chloride. The results obtained show that the formation of ethane and ethylene is not connected with radical interstages. There are 1 figure, 2 tables, and 13 references: 4 Soviet, 7 USA, and 2 German.

Card 2/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

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81934

Reactions Between Organo-metallic Compounds and Heavy Metal Salts. II. Interaction of Lithium-ethyl With Cobalt and Titanium Halides

S/062/60/000/06/05/011
B020/B061

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of High-molecular Compounds of the Academy of Sciences USSR)

SUBMITTED: December 1, 1958

Card 3/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

VILENSKIY, N.M.; LATS, V.M.; ZELENINA, N.Ya.; SERGEYEVA, A.G.; ZENOVA, N.N., red. izd-va; PAL'MIN, M.Z., tekhn. red.

[Establishing an efficient diagram for the power supply of a metallurgical combine] Opredelenie ratsional'noi skhemy energosnabzheniia metallurgicheskogo kombinata. Sverdlovsk, AN SSSR, 1963. 56 p. (MIRA 16:10)
(Iron and steel plants--Equipment and supplies)
(Power engineering)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, S., starshiy metodist

Nearer to life and to industry. Prom.koop. 14 no.9:5 S '60.
(MIRA 13:9)

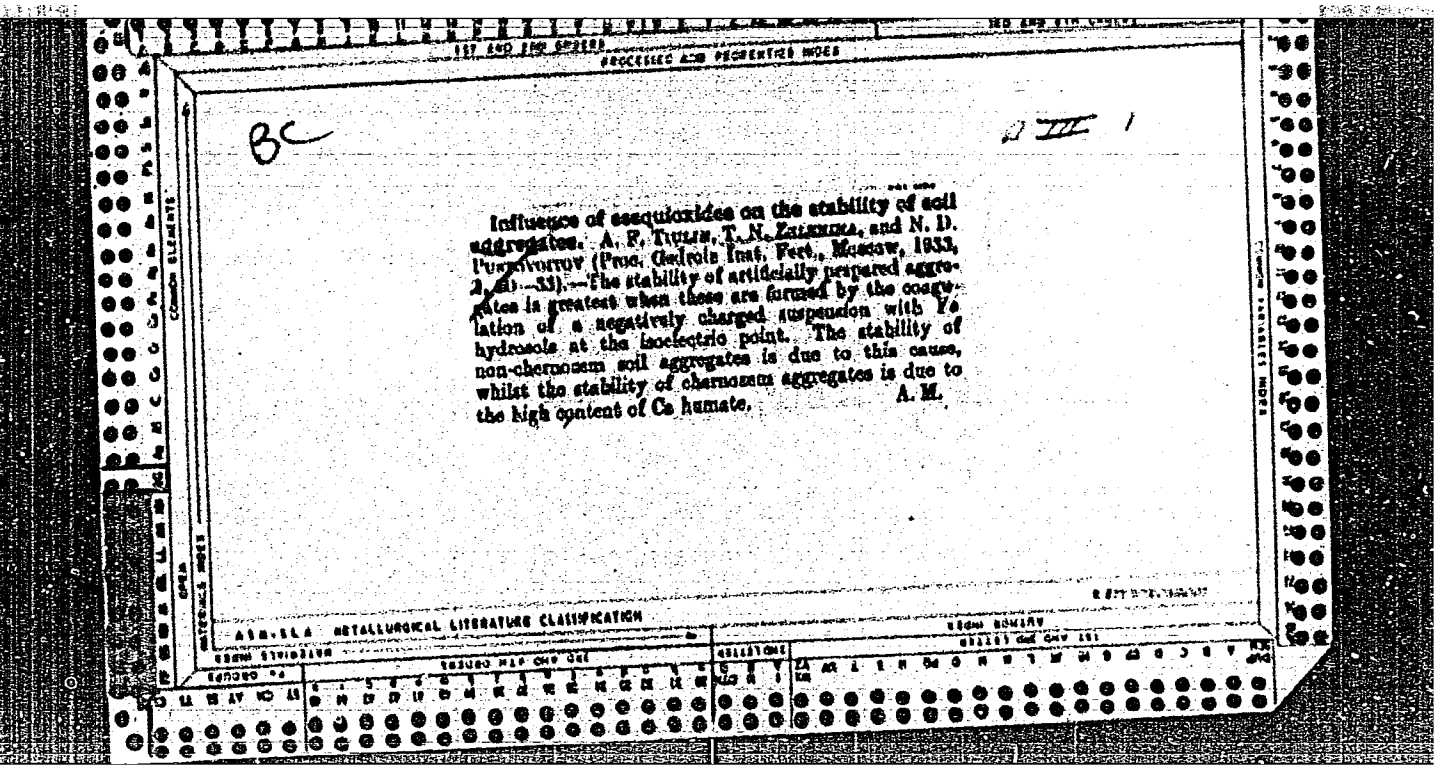
1. Metodkabinet upravleniya uchebnykh zavedeniy Rospromsoveta.
(Technical education)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

1ST AND 2ND ORDERS

PROCESSED AND PROPERTIES INDEX



BC

III 1

Influence of sesquioxides on the stability of soil aggregates. A. F. Tiulin, T. N. Zelenina, and N. D. Pustovoitov (Proc. Gedrois Inst. Fert., Moscow, 1933, 2, 30—33).—The stability of artificially prepared aggregates is greatest when these are formed by the coagulation of a negatively charged suspension with Fe hydrosols at the isoelectric point. The stability of non-chernozem soil aggregates is due to this cause, whilst the stability of chernozem aggregates is due to the high content of Ca humate. A. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

5 (3)
AUTHORS: Tinyakova, Ye. I., Dolgoplosk, B. A., Zelenina, T. P. SOV/79-29-7-61/83

TITLE: Redox Systems for the Initiation of Radical Processes (Okislitel'no-vosstanovitel'nyye sistemy dlya initsiirovaniya radikal'nykh protsessov). X. On the Mechanism of the Effect of Redox Systems With the Participation of SO_2 (X. O mekhanizme deystviya okislitel'no-vosstanovitel'nykh sistem s uchastiyem SO_2)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2377 - 2381 (USSR)

ABSTRACT: Sulfur dioxide, by reason of its duality, may be used in redox systems in combination with both oxidizing agents (peroxides, hydroperoxides) and reducing agents (mercaptans, H_2S, and dienols). As was shown by the authors (Refs 1,2) these systems may be used to induce radical reactions in hydrocarbon media (Refs 1,2). In the present paper experimental data is given which makes an interpretation of the mechanism of the effect of the above systems possible. The reaction of isopropylbenzene-hydroperoxide with SO_2 is extremely fast in hydrocarbon

Card 1/3

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

solutions and causes a rapid gel formation in rubber solutions. This reaction is accompanied by the formation of polysulfone if styrene is used as a solvent. Nitrogen monoxide prevents this process. Analysis of the reaction products obtained with and without NO proved the reaction to proceed via the radicals (SO_3H), which react with the monomer to give sulfonic acid. It was shown previously (Ref 2) that the reaction of trichlorothiophenol with SO_2 produces a vulcanization of rubber at low temperatures. Thus, this reaction leads to the formation of unsaturated polymers. Its mechanism is that of a chain reaction and the reaction proceeds accordingly, and is accompanied by the addition of trichlorothiophenol and SO_2 to the unsaturated polymer chain. NO prevents this process. There are 3 tables and 7 references, 4 of which are Soviet.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

Redox Systems for the Initiation of Radical Processes. X. On the Mechanism of the Effect of Redox Systems With the Participation of SO_2

SOV/79-29-7-61/83

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of High-Molecular Compounds of the Academy of Sciences, USSR)

SUBMITTED: June 16, 1958

Card 3/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, T.P.

Polarographic determination of cadmium and zinc in tellurium sponge. Sbor.trud. VNIITSVETMET no.9:75-77 '65.
(MIRA 18:11)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZINOV'IEVA, L.D.; GLADYSHEVA, K.F.; ZELENINA, T.P.

Sulfur determination with the use of ion exchange chromatography.
Sbor.trud. VNIITSVETMET no.9:118-119 '65.
(MIRA 18:11)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

GLADYSHEVA, K.F.; ZELENINA, T.P.

Rapid determination of zinc in cadmium containing materials with chromatographic separation. Sbor.trud. VNIITSVETMET no.9:120-123 '65. (MIRA 18:11)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, T.P.; GLADYSHEVA, K.F.; ZINOV'YEVA, L.D.

Determining tin in tungsten products. Sbor.trud. VNIITSVETMET no.9:124-126 '65. (MIRA 18:11)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

POGOSOVA, A.V.; RAPOPORT, E.A.; ZELENINA, V.P.

Synthesis of organic proteins in the presence of an active growth focus in the organism. Dokl. AN SSSR 154 no.5:1206-1209 F'64.
(MIRA 17:2)

1. Institut khirurgii im. A.V. Vishnevskogo AMN SSSR. Predstavleno akademikom A.N. Bakulevym.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

OSHCHEPKOVA, N.V.; KUVAKIN, M.A.; ZELENINA, V.V.

Microscopy of electrode materials. TSvet. met. 36 no.12:51-54 D '63.
(MIRA 17:2)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, Ye.N.; KALININA, L.S.; LYUBOMILOV, V.I.

Sulfite method for the quantitative determination of trioxane in aliphatic solvents. Plast. massy no.5:57-58 '65. (MIRA 18:6)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, Ye.N.; KALININA, L.S.

Method of quantitative analysis of aqueous and benzene solutions of trioxane. Plast. massy no.7:55-57 '65. (MIRA 18:7)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

GONCHAROVA, M.N., professor; KRYSHOVA, N.A., professor; LYANDERS, Z.A., doktor meditsinskikh nauk; LEVIN, I.M., kandidat meditsinskikh nauk; GOLOVINSKAYA, N.V., iandidat meditsinskikh nauk; POLONSKIY, M.N., kandidat meditsinskikh nauk; GLOTOVA, Ye.I., kandidat meditsinskikh nauk; ZELENINA, Ye.V., kandidat meditsinskikh nauk

Treatment of children with aftereffects of poliomyelitis. Vop.okh. mat. i det. 1 no.1:43-52 Ja-F '56. (MLRA 9:9)

1. Iz Nauchno-issledovatel'skogo detskogo ortopedicheskogo instituta imeni G.I.Turnera, Leningrad.
(POLIOMYELITIS)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, Ye. V.,

Zelenina, Ye. V., Kunevich, V. G., and Uflyand, Yu. M. "The status of the receptor functions of children suffering from the consequences of poliomyelitis", Sbornik nauch. trudov (M-vo zdravookhraneniya RSFSR. Resp. nauch.-issled. in-t vosstanovleniya trudosposobnosti fiz. defektivnykh detey im. prof. Turnera), Leningrad, 1948, p.19-39.

SO: U - 3042, 11 March 53, (Letopis "Zhurnal "nykh Statey, No. 7, 1949)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, YE. V.

Zelenina, Ye. V. "Chronaximetric characteristics of muscles of children in the acute period of poliomyelitis", Sbornik nauch. trudov (M-vo zdravookhraneniya RSFSR. Resp. nauch.-issled. in-t vosstanovleniya trudosposobnosti fiz. defektivnykh detey im/ prof. Turnera), Leningrad, 1948, p. 81-98.

SO: U - 3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 7, 1949).

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENINA, Z.N.

Clinical significance of the direct calibrated ballistocardiogram (acceleration, speed, displacement) for the diagnosis of coronary insufficiency. Terap. arkh. 35 no.9:24-26 S'63 (MIRA 17:4)

1. Iz kafedry fakul'tetskoy terapii (zav. - S.S. Pozdnov) Irkutskogo meditsinskogo instituta.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

CHERNYAVSKIY, M., inzh.; ZELENIS, P., inzh.; GAMOV, L., inzh.; BURYUKOVICH, D., inzh; OVSEYENKO, B., inzh.

Mesh-reinforced concrete goes into production. Stroitel' 8 no.5:5-6 My '62. (MIRA 15:7)
(Precast concrete)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

MANIN, Kuz'ma Vasil'yevich; ZELENITSKAYA, L.V., red.; SAYTANIDI, L.D., tekhn. red.

[Increasing the productivity of grain harvesting machinery] Povyshenie proizvoditel'nosti zernouborochnykh mashin. Moskva, Izd-vo M-va sel'.khoz.RSFSR, 1961. 79 p. (MIRA 14:12)
(Grain--Harvesting)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA

CZECHOSLOVAKIA/Microbiology - Industrial Microbiology. V-3

Abs Jour : Ref Zhur - Biol., No 5, 1958, 16465

Author : Zelenka
Inst :
Title : A Critical Evaluation of Commonly Accepted Methods of Introducing and Utilizing Yeast in Yeast Distillation.

Orig Pub : Kvasny prumysl, 1957, 3, No 1, 3-8

Abstract : No abstract.

Card 1/1

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Antonin, inz.

Vibration of vapor ventilators. Energetika Cz 15 no.3:144-145 Mr '65.

1. Elektrarna CSM Tusimice.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

JAROS, M.; ZELENKA, A.

Homoplastic cartilage cap in arthroplasty of the hip. Acta chir. orthop. traum. cech. 26 no.4:257-260 Aug 59.

1. I. klinika pro ortopedickou chirurgii v Praze, vedouci prof. dr. M. Janos.

(HIPS, surg.) (CARTILAGE, transpl.)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

JAROS, M.; ZELENKA, A.

Homoplastic cartilage cups in arthroplasty of the hip joint.
Ortop., travm.i protez. 21 no.1:41-44 Ja '60.
(MIRA 13:12)

(HIP JOINT--SURGERY) (CARTILAGE--TRANSPLANTATION)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, A. ; MAREK V.

Reconstruction of powdered coal equipment for the Ervenice Electric Power Plant p. 493.

ENERGETIKA. Praha. Czechoslovakia. Vol. 9. no. 10, Oct. 1959.

Monthly list of East European Accessions (EEAI) LC. Vol. 9 no. 2 Feb. 1960 Uncl.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Eduard

Minimum addendum of a hobbing cutter for spline shafts. Stroj vyr 13 no.1:42-43 Ja '65.

1. Prage National Enterprise, Automobilovy zavod Klementa Gottwalda, Prague.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

40292

S/081/62/000/014/016/039
B166/B144

11.2120

AUTHOR: Zelenka, František

TITLE: The production of noncaking and nonhygroscopic ammonium nitrate

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1962, 377, abstract 14K47 (Czechoslovak Patent 98596, February 15, 1961)

TEXT: $Al(OH)_3$ is suspended in a concentrated solution of NH_4NO_3 by mixing $Al_2(SO_4)_3$ and NH_4OH. During the NH_4NO_3 crystallization the suspension receives an addition of K or Na salts of the higher fatty acids, containing sufficient C atoms in the chain >12 for it to form 0.2-1.0% of the Al salts of these fatty acids (when it becomes the finished product). This quantity of the Al salts confers a nonagglutinating property on the crystalline NH_4NO_3 powder. To stabilize the suspension and the final product the quantity of NH_4OH introduced into the suspension is slightly higher than stoichiometric (as referred to $Al_2(SO_4)_3$). Example. A hot

Card 1/2

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B166/B144

The production of noncaking and ...

solution of NH_4NO_3, immediately before it begins to evaporate, receives an addition of 0.5% by weight $Al_2(SO_4)_3$ dissolved in the minimum quantity of water; whereupon an excess of a concentrated solution of NH_4OH (with respect to $Al_2(SO_4)_3$) is stirred in. After concentrating the solution by evaporation in the process of NH_4NO_3 crystallization, 0.25% by weight soap powder is introduced into the mother liquor, after which the NH_4NO_3 crystallization is carried to completion. A noncaking product is obtained.
[Abstracter's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

MARKVART, Josef; ZELENKA, Ivan

Increasing the efficiency of the IS type automatic vacuum impregnation machines. Kvasny prum 9 no.3:61-63 Mr '63.

1. Vyzkumne a vyvojove stredisko, Prazske cukrarny, n.p., Praha.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, J.

Quartz crystal resonators for wideband crystal filters.

P. 20. (SLABOPROUDY OBZOR) (Praha, Czechoslovakia) Vol. 19, no. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, J.

Measurements of some characteristic properties in the equivalent electrical network of Piezoelectric crystals.

P. 696. (SLABOPROUDY OBZOR.) (Praha, Czechoslovakia) Vol. 18, No. 10, Oct. 1957

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, 1958

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

CZECH/37-59-1-14/26

AUTHOR: Jiří Zelenka

TITLE: The Equivalent Circuit of Damped Longitudinally Oscillating Piezoelectric Bars with an Incomplete Electrode

PERIODICAL: Československý Časopis Pro Fysiku,1959,Nr 1,pp 94-98

ABSTRACT: The arrangement of the electrodes is shown in Fig 4. If ℓ is the length of the bar, ℓ-2c is the length of the electrodes, a is the thickness and b is the width of the bar, m/2 is the distance between the electrode and the bar. In such a case, we may use the equivalent circuit of Fig 3 (Refs 2, 3) with the values given by Eq (1). The function Φ (Eq (2)) for this case is given by Eq (4). By a suitable choice of the relation between the length of the electrodes and the length of the bar, one can exclude certain resonant frequencies. Table 1 gives several examples of this. The measured parameters (Tables 2 and 3) are in good agreement with the theory.
There are 4 figures, 3 tables and 5 references, of which 4 are Czech and 1 is English.

Card 1/2

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

CZECH/37-59-1-14/26

The Equivalent Circuit of Damped Longitudinally Oscillating Piezoelectric Bars with an Incomplete Electrode

ASSOCIATION: Výzkumný ústav elektrotechnické keramiky, Hradec-Králové
(Res. Institute for Electrotechnical Ceramics, Hradec-Králové)

Card 2/2

SUBMITTED: June 18, 1958

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

06626
CZECH/37-59-5-2/13

AUTHORS: Zelenka, Jiří and Tichý, Jan

TITLE: Experimental Confirmation of Relations Used for Designing Longitudinally Oscillating Piezoelectric Specimens

PERIODICAL: Československý časopis pro fysiku, 1959, Nr 5, pp 463 - 472

ABSTRACT: The electrical properties of a piezoelectric crystal oscillating with its k-th resonance frequency can be described by an equivalent circuit consisting of the dynamic capacity C_R in series with the ohmic resistance R_h and the induction L_h. Parallel to these is the static capacity C_o (see Figure 1). In some cases, it is possible to predict the electromechanical behaviour of a crystal, i.e. the values of the components of the equivalent circuit, from the knowledge of the dielectric properties of the bulk material and from the angle of cut of the piezoelectric crystal.
Cady (Ref 5), van Dyke (Refs 9, 10) and Dye (Ref 8) have derived equations for computing the equivalent circuit

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Experimental Confirmation of Relations Used for Designing Longitudinally Oscillating Piezoelectric Specimens

for the fundamental and the odd harmonic oscillations of piezoelectric crystals. Chaloupka, Tichý and Zelenka (Refs 13, 14, 19, 21) have dealt with even harmonics. Cady (Ref 6) has discussed the approximations involved in such derivations. Very few measurements to verify the theoretical relations have, however, been published (Refs 1,2).

The present authors have used three sets of quartz crystals, whose dimensions etc. are described. L_h and C_h were determined by measuring the change in the resonance frequency of the system due to the addition of a known capacity in series with the crystal (Refs 18, 20). The frequency was measured to an accuracy of 0.1 c/sec. R_h was measured by a substitutional method.

The following oscillations were studied: on the first set of crystals the fundamental and the third harmonic longitudinal oscillation. On the second set, the second harmonic longitudinal oscillation, on the third

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Experimental Confirmation of Relations Used for Designing Longitudinally Oscillating Piezoelectric Specimens

(unsilvered) set, only the fundamental longitudinal oscillation.
Except for the third harmonic, all resonance frequencies were in good agreement with the well-known equation (1). The lack of agreement with this equation of the third harmonic is probably due to coupling with other modes and to the finite thickness of the crystals.
For the theoretical calculation of L_h and C_h we have used equations (3) and (4) (Ref 14).
Figure 3 shows the dependence of L_h on the angle of cut of the crystal both for silvered and unsilvered samples. The frequencies were the fundamental frequency and the third harmonic. Figure 4 shows the same dependence for the second harmonic on a silvered sample. Agreement between theory and experiment is good for the fundamental and second harmonic, but not for the third harmonic oscillation.

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

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CZECH/37-59-5-2/13

Experimental Confirmation of Relations Used for Designing Longitudinally Oscillating Piezoelectric Specimens

The agreement between theory and experiment enables one to determine the piezoelectric coefficients from the equivalent circuit. The main advantage of the confirmed agreement is the possibility of designing crystal filters with well predictable characteristics.
There are 6 figures, 2 tables and 21 references, of which 7 are Czech, 9 English, 4 German and 1 Soviet.

ASSOCIATIONS: Tesla, Hradec Králové.
Katedra matematiky a fysiky Vysoké školy strojní v Liberci
(Faculty of Engineering, Liberec)

SUBMITTED: February 4, 1959

Card 4/4

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, J.

Piezoelectric resonators of artificial dipotassium-tartrate crystals. p. 538

SLABOPROUDY OBZOR (Ministerstvo vscobenibo strojirenstvi, Ministerstvo spoju a Ceskoslovenska vedecko-technicka spolecnost, sekce elektrotechnika) Praha, Czechoslovakia, Vol. 20, no. 9, Sept. 1959

Monthly List of East European Accessions (EEAI), LC. Vol. 9, no. 2, Feb. 1960

Uncl.

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, J.

Z/039/60/021/02/002/037
E192/E535

AUTHORS: Svoboda, Rudolf, Tichý, Jan and Zelenka Jiří

TITLE: Synthetic Piezoelectric Materials

PERIODICAL: Slaboproudý obzor, 1960, Vol 21, No 2, pp 66-72

ABSTRACT: A number of synthetic piezoelectrics have been developed since World War 2. The manufacture and the properties of most of these materials are reviewed in the article. Two tartrates EDT and DKT are employed as piezoelectric materials. The first tartrate has the following formula: $C_6H_{14}N_2O_6$; the formula for DKT is $K_2C_4H_4O_6 \cdot \frac{1}{2} H_2O$. The monocrystals of these substances crystallize in the sphenoidic system. The crystals are illustrated in Fig 1. In both cases the Z axis is identical with the crystallographic axis c and the Y axis is identical with b crystallographic axis. The angle between X axis and the crystallographic a axis is 15°30' for EDT crystals and only 51' for DKT crystals. Optically both crystals are bi-axial. Various physical and electrical parameters of these crystals are indicated in Table 1. The crystals

Card 1/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

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E192/E535

Synthetic Piezoelectric Materials

can be used in resonant circuits and give a quality factor up to 30 000. Lithium sulphate LSH having the formula $Li_2SO_4H_2O$ is also a useful piezoelectric material. The crystal of LSH has the form shown in Fig 3. The physical and the electrical constants of this material are indicated in Table 2. Sorbitol hexa-acetate, SHA having the formula $C_6H_8O_6(COCH_3)_6$ gives crystals which are soluble in water. The shape of the crystal is illustrated in Fig 4 and its piezoelectric coefficients are indicated in Table 3. This material can also be used in resonant circuits. Phosphates ADP and KDP can be used in electro-acoustics where Rochelle salt has been normally employed; the chemical formula of ADP is $NH_4H_2PO_4$ while that of KDP is KH_2PO_4. Both materials crystallize in a tetrogonal system (Figs 5 and 6). The basic properties of those materials are indicated in Table 4. The crystals of ADP and KDP do not contain any

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

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E192/E535

Synthetic Piezoelectric Materials

"crystallized" water and do not easily dissolve. Crystals of sodium chlorate and sodium bromate can also be used as piezoelectric materials. Elastic and piezoelectric coefficients of these substances are indicated in Table 5. A comparison of the above substances is given in Table 6 where the third column indicates the electromechanical coupling coefficient. There are 11 figures, 6 tables and 24 references. 8 of which are Czech, 3 Soviet, 1 German, 1 Swiss and 11 English.

ASSOCIATIONS: Vysoká škola strojní, Liberec (Technical University of Liberec) (Svoboda and Tichý) and TESLA Lanškroun n.p., závod 05, Hradec Králové (TESLA Lanškroun, State Factory 05, Hradec Králové) (Zelenka)

SUBMITTED: October 17, 1959

Card 3/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

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Z/037/60/000/04/009/014
E073/E535

24.7800

AUTHORS: Tichý, Jan and Zelenka, Jiří

TITLE: Longitudinal and Contour Shear Vibrating Piezoelectric Resonators from Synthetic Quartz

PERIODICAL: Československý časopis pro fysiku, 1960, No 4, pp 328-332

ABSTRACT: To verify their properties, measurements were made on longitudinally vibrating narrow $XYt_{-\varphi}$-cut rods (for φ = 0° to 5°) and square-shaped DT-cut plates ($YXl_{52°30'}$) Two sets of resonators were produced, one was made of natural and the other of synthetic quartz single crystals. All the synthetic quartz specimens were produced from a single monocrystal weighing 0.8 kg and grown from a germination in the form of a plate, with the thickness in the direction of the Z-axis, at a temperature of 300-350°C and a pressure of about 400 atm. Data of the resonators are given. The oscillations were generated by means of a Heegner oscillator for which it could be

Card 1/4

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

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E073/E535

Longitudinal and Contour Shear Vibrating Piezoelectric Resonators from Synthetic Quartz

assumed that it excited series resonance in the quartz crystal. Care was taken that in generating the oscillations the voltage of the resonator should be as low as possible and that it should have a purely sinusoidal characteristic. In measuring the temperature dependence the resonators were sealed into evacuated glass ampoules, which were placed into an airstream which could be heated or cooled as required; the measurements were carried out with an accuracy of $\pm$ 0.5°C for at least 20 mins. The results of the measurements are described and discussed. The results proved that the piezoelectric and the elastic properties of synthetic single quartz crystals grown from germinations of the Z cut are fully satisfactory and such crystals are suitable for generating longitudinal and "contour shear" vibrating piezoelectric resonators. The slight differences in the location of the peaks of the parabola of the temperature dependence of the frequencies of narrow

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E073/E535

Longitudinal and Contour Shear Vibrating Piezoelectric Resonators from Synthetic Quartz

longitudinally vibrating rods can be excluded by appropriate selection of the orientation of the cut used. For achieving an equal temperature dependence of the frequency of longitudinally vibrating rods of the cut $XYt_{-\varphi}$, it is necessary to apply in resonators with synthetic quartz crystals an angle φ smaller by about 1°. The dynamic inductance and the Q of resonators made of natural and synthetic quartz crystals are approximately equal. For contour shear vibrating DT-cut crystals made of synthetic quartz, the inductance is about 4% smaller and the Q is about one-third lower than it is for resonators with natural quartz crystals. Similarly, the temperature dependence curve is shifted and the zero temperature dependence of the frequency is achieved at temperatures approximately 7°C lower than for natural quartz crystals. There are 2 figures, 3 tables and 15 references, 2 of which are Czech, 4 Soviet, 2 German, 1 Swiss, 1 Polish and 5 English.

Card 3/4

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

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E073/E535

Longitudinal and Contour Shear Vibrating Piezoelectric Resonators from Synthetic Quartz

ASSOCIATIONS: Katedra matematiky a fysiky Vysoké školy strojní v Liberci (Chair of Mathematics and Physics, Mechanical Engineering, Technical University, Liberec) (Tichý) and Tesla Lanškroun, závod 05 v Hradci Králové (Tesla Lanškroun, Plant 05, Hradec Králové) (Zelenka)

SUBMITTED: January 28, 1960

Card 4/4

4

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Jiri, inz.

A piezoelectric resonator as an electric four-terminal network.
Slaboproudy obzor 21 no.7:387-392 Jl '60. (EEAI 10:1)

1. TESIA Lanskroun narodni podnik, zavod 05, Hradec Kralove.
(Electric resonators)
(Pyroelectricity and piezoelectricity)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Jiri, inz.

Piezoelectric resonators of synthetic quarts. Slaboproudy obzor 21 no.11:638-641 N '60. (EEAI 10:2)

1. TESLA Lanskroun, narodni podnik, zavod 05 Hradec Kralove.
(Electric resonators) (Quartz)
(Pyroelectricity and piezoelectricity)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

SVOBODA, Rudolf; TICHY, Jan; ZELENKA, Jiri

Synthetic piezoelectric materials. Slaboproudy obzor 21 no.2:66-72 '60. (EEAI 9:6)

1. Vysoka skola strojni, Liberec (for Svoboda, Tichy). 2. TESLA Lanskroun n.p., zavod Ot, Hradec Kralove (for Zelenka)
(Piezoelectric materials)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Jiri, inz.

Piezoelectric vibrators for very low frequencies. Slaboproudy obzor 22 no.2:66-70 '61. (EEAI 10:5)

1. TESLA Lanskroun, n.p. zavod 05 v Hradci Kralove.
(Oscillators, Crystal) (Vibrators)
(Piezoelectric crystals)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Jiri, inz.

Piezoelectric resonators from potassium tartrate. Slaboproudy obzor 22 no.7:387-391 '61.

1. TESLA Lanskroun, n.p., zavod 05, Hradec Kralove.

(Pyro- and piezoelectricity)
(Potassium tartrates)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

Z/039/61/022/009/005/005
D254/D303

AUTHOR: Zelenka, Jiří, Engineer

TITLE: Conference on piezoelectricity

PERIODICAL: Slaboproudový obzor, v. 22, no. 9, 1961, 573

TEXT: A conference on piezoelectricity was convened on July 10-13, 1961 in Liberec, organized by Strojní fakulta Vysoké školy strojní a textilní v Liberci (Machine Building Department of the Mechanical Engineering and Textile Institute in Liberec) and the Národní podnik TESLA Lanškroun (TESLA National Enterprise in Lanškroun). It was attended by 80 Czechoslovak, 5 Soviet, and 3 Hungarian experts; the Soviet delegation was headed by Academician A.V. Shubnikov, Director of the Institut Kristallografii (Institute of Crystallography) AS USSR. A total of 19 contributions dealt with the subjects of peizoelectric materials, their properties, measuring techniques, etc. The opening report on piezoelectric materials was held by A.V. Shubnikov; a report on synthetic Si single-crystals was held by V.P. Butuzov, USSR; a report on the influence of chem-

Card 1/3

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Conference on piezoelectricity

ical composition on the properties of piezoelectric ceramics was held by A. Koller of the Výzkumný ústav elektrotechnické keramiky (Research Institute of Electrotechnical Ceramics) in Hradec Králové; a report on measuring the frequency stability of etalons was held by Engineer J. Ptáček of the Astronomický ústav ČSAV (Institute of Astronomy, Czechoslovak AS); a report on frequency deviations of two precise crystal oscillators was held by Engineer J. Tolman of the Ústav radiotechniky a elektroniky ČSAV (Institute of Radio-Engineering and Electronic, Czechoslovak AS); reports on piezoelectric resonator measuring were held by Candidate of Sciences S. Hypius and J. Hanzl of the n.p. TESLA Lanškroun, závod 05 v Hradci Králové (TESLA Lanškroun, National Enterprise, Plant 05 in Hradec Králové); reports on the effect of internal influences on piezoelectric resonators were held by K. Hruska and K. Kratochvilova of the Ústav fyziky Vysoké školy strojní a textilní v Liberci (Physical Institute of the Mechanical Engineering and Textile Institute in Liberec); reports on grinding and polishing of piezoelectric cuts were held by Candidate of Sciences L. Šolc of the Výzkumný ústav pro mineraly

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

Conference on piezoelectricity

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D254/D303

(Research Institute of Minerals) in Turnov, and by L. Kyncl of the n.p. TESLA Lanškroun, závod 05 v Hradci Králové (TESLA Lanškroun, National Enterprise, Plant 05 in Hradec Králové); a brief report on frequency meauring with an Si ball was held by J. Kraus of the Výzkumný ústav pro minerály (Research Institute of Minerals) in Turnov; a report on the orientation of resonators with zero temperature coefficients was held by K. Dad'ourek of the Vysoká škola strojní a textilní v Liberci (Mechanical Engineering and Textile Institute in Liberec); and a report on various types of pressure gages was held by B. Šaroun of the Výzkumný ústav potravinářských a chladicích strojů (Research Institute of Food-Processing and Refrigerating Machines).

Card 3/3

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

89310

9.2181
9.9869
9.2583

Z/039/61/022/002/001/008
E192/E382

AUTHOR: Zelenka, Jiří, Engineer

TITLE: Piezoelectric Resonators for Very Low Frequencies

PERIODICAL: Slaboproudý obzor, 1961, Vol. 22, No. 2, pp. 66-70

TEXT: For the frequency band from 1 to 3 kc/s piezoelectric resonators are in the form of two crystal slabs attached to each other in such a way that the voltage applied to the electrodes results in the elongation of one of the slabs and the contraction of the other. For the resonators operating above 3 kc/s, the slabs are almost square in cross-section and the electrodes are attached to either 4 or 6 walls of the crystal. The frequencies above 8 kc/s are covered by the resonators, which are in the form of thin slabs. In this case, the flexural oscillations are produced by means of 4 electrodes situated on 2 parallel surfaces of the crystal. In general, the frequency range between 1 and 10 kc/s is based on the resonators which operate in the flexural oscillation mode. A resonator of this type can operate at its h-th

Card 1/5

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E192/E382

resonant frequency and it can be represented by an equivalent electrical circuit, having the form of a bipole, a tripole or a quadripole. In determining such a circuit it is necessary to know 4 parameters, namely, the series resonant frequency f_h, dynamic inductance L_h, ratio of the static and dynamic capacitances C_o/C_h and the equivalent series resistance R_h or the quality factor Q_h. The resonant frequency of flexural oscillations of rods or narrow slabs can be expressed by (Ref. 5):

$$f_h = \frac{m_h^2}{4\pi\sqrt{3}\,l}\; p\; \frac{1}{\sqrt{s'_{ii}\rho}} \qquad (3)$$

where s'_{ii} is the modulus of elasticity of the crystal in the direction of its length l, p is the ratio of the

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

crystal thickness t to its length (if the flexural oscillations occur in the direction of the thickness) or the ratio of the width b to the length if the slab oscillates in the direction of the width; ϱ is the density of the crystal and h denotes the order of the oscillation. The magnitude of the coefficient m_h, which is dependent on the ratio p, was theoretically derived by Mason (Ref. 4). The values of this coefficient taken from Mason's work were used to calculate the resonant frequency as a function of b/ℓ and the results are given in a figure together with corresponding experimental curves. Reasonably good agreement between theory and experiment can be observed. The inductance and the capacitance of the equivalent electrical circuit of a resonator operating in the vicinity of its principal flexural resonance can be evaluated from the formulae derived by Keller (Ref. 3). The quality factor Q of the resonators is dependent on the density of the medium in which the resonator oscillates. The effect of air pressure on Q was investigated experimentally and it is shown that it is desirable to keep the resonators

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in vacuum in order to achieve a high Q . The temperature-frequency dependence of the resonators was also investigated and it was found that a parabolic dependence of frequency on temperature could be achieved for all the types of resonator. The flexurally operating resonators for the frequencies from 1 to 10 kc/s are normally used as stable frequency sources. In general, the resonators are connected as bipoles or, more often, tripoles. A typical oscillator circuit with a resonator connected as a tripole is shown in Fig. 7. In this the piezoelectric element, which is connected between the anode and grid circuits of the tube, represents a narrow-band filter whose bandwidth can be adjusted by means of the variable capacitance C_s . In the extreme case, it is possible to obtain the bandwidth almost equal to the "distance" between the series and parallel resonances of the resonator. At the centre frequency of the filter the phase shift between the terminals 1-3 and 2-3 is 180° so that the condition necessary for the oscillation is achieved. The flexurally oscillating

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Z/039/61/022/002/001/008
E192/E382

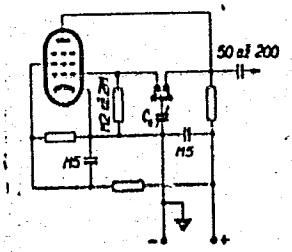
Piezoelectric Resonators ....

resonators are very useful at frequencies between 1 and 10 kc/s but their Q and long-term frequency stability are poorer than those of longitudinally or shear-type oscillating crystals. There are 9 figures, 2 tables and 11 references: 5 Czech and 6 non-Czech.

ASSOCIATION: Tesla Lanškroun, n.p., závod 05 v Hradci Králové (State Establishment Tesla Lanškroun, Factory 05 at Hradec Kralové)

SUBMITTED: August 16, 1960

Fig. 7:



Obr. 7. Schéma zapojení oscilátoru s ohybově kmitajícím rezonátorem v tříbólovém zapojení.

Card 5/5

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9,2180
9,2181

Z/037/62/000/002/007/015
E024/E135

AUTHORS: Kratochvílová, K., Tichý, J. and Zelenka, J.

TITLE: Influence of radiation on the properties of piezoelectric resonators

PERIODICAL: Československý časopis pro fysiku, no.2, 1962, 144-151

TEXT: The effect of radiation on piezoelectric oscillators is one of the environmental influences which are becoming important as demands on the accuracy and stability of crystal oscillators increase. The authors briefly review the field of radiation damage in solids in general and in piezoelectric crystals in particular, before describing their own experiments on oscillators from natural quartz and from DKT. The source of radiation was either Co-60 or X-rays from a copper target at 35 kV. No change was detected in the longitudinal vibrations of quartz oscillators cut in the XYa_5° direction due to irradiation by several hundred r units of X-rays and up to 10^5 r units of γ rays. This result is in agreement with published

Card 1/3

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results. On the other hand, the torsional vibrations of type BT quartz-crystal-oscillators with orientation YXℓ49°20' at about 13 Mc/s were influenced by irradiation. Irradiation by up to 105 x 10^3 r of X-rays gradually reduced the resonance frequency from over 13514 kc to under 13510 kc. The reduction in the resonance frequency tended to saturate. A similar oscillator with a resonance frequency of 10 Mc/sec was irradiated by up to 10^5 r of γ-rays. This irradiation reduced the resonance frequency only very slightly and barely influenced the temperature-dependence of the frequency. Similar results were obtained with oscillators of the type AT with orientation YXℓ-35°10' . The influence of X-rays on oscillators made from DKT was studied on samples cut in the XZa37°30' orientation at about 100 kc/sec. Irradiation with about 3 x 10^3 r reduced the resonance frequency by 4-5 cycles if the crystal was sealed in a glass envelope and by about 12 cycles when irradiated in the open. No change in the temperature-dependence of the frequency was detected. It appeared that irradiation

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Influence of radiation on the ... Z/037/62/000/002/007/015
E024/E135

was more effective if carried out while the crystal was vibrating. The theoretical interpretation of the above results has not yet been clarified.
There are 3 figures.

ASSOCIATION: Tesla Lanškroun, závod 05, Hradec Králové (J.Zelenka)
(Tesla Lanškroun, Factory 05, Hradec Králové)
Katedra matematiky a fysiky VŠST, Liberec (K.Kratochvílová and J. Tichý)
(Department of Mathematics and Physics, VŠST, Liberec)

SUBMITTED: November 30, 1961

Card 3/3

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9.21/81
9,21/80

Z/037/62/000/002/014/015
E024/E135

AUTHOR: Zelenka, J.

TITLE: The Q-factor of contour modes of vibration of piezoelectric resonators

PERIODICAL: Československý časopis pro fysiku, no.2, 1962, 182-185

TEXT: The use of piezoelectric resonators in high-precision oscillators often requires a high Q-factor and high stability of the resonance frequency of the resonator. The author considers frequencies between 60 and 150 kc/sec. The Q-factor of rod-shaped quartz resonators of orientation XYt-50 and thickness above 0.8 mm is usually about 130 000. The Q-factor can be increased by optically polishing the surfaces. With a resonator of dimensions 50 x 5 x 1.2 mm, at 22 °C, a Q-factor of up to 220 000 has been achieved. Quartz resonators of type DT, vibrating in contour shear modes, a Q-factor of 220 000 can be achieved even with ground faces. The highest values of Q are, however, attainable with GT-type resonators. An optically polished resonator of this type, with thickness 1.2 mm and

Card 1/2

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The Q-factor of contour modes ... Z/037/62/000/002/014/015
E024/E135

resonance frequency 100 kc/sec, can have a Q value up to 1.6×10^6 at 22 °C. The Q-factors for resonators cut from DKT are altogether lower. The Q-factor is usually rather dependent upon temperature. However, this dependence can be decreased by suitable methods of mounting. The high Q-values themselves can only be achieved if the crystals are correctly mounted.
There are 2 figures.

ASSOCIATION: Tesla Lanškroun, závod 05, Hradec Králové
(Tesla Lanškroun, factory 05, Hradec Králové)

SUBMITTED: November 14, 1961

Card 2/2

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

9,2181
9,2180

36317
Z/037/62/000/002/015/015
E073/E535

AUTHOR: Zelenka, J.

TITLE: Contribution to the equivalent circuit of piezo-electric resonators, taking into consideration the influence of secondary resonances

PERIODICAL: Československý časopis pro fysiku, no.2, 1962, 186-187

TEXT: A possible method of simplifying the equivalent circuit of a piezo-electric resonator in a certain, arbitrarily chosen, frequency range is presented. The equivalent circuit is considered in the form of a two-pole network consisting of a finite number of series resonance circuits, a frequency-dependent capacity and a frequency-dependent resistor connected in parallel. The individual series resonance circuits, the resonance frequencies of which are outside the frequency range under consideration, are substituted in the simplified equivalent circuit by an admittance, the real part of which can be considered as expressing the conductivity of the frequency-dependent resistance, whilst the imaginary part can be considered as the frequency-dependent capacitance. The high quality factor of the

Card 1/2

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piezo-electric resonator allows disregarding the real component of the admittance and taking into consideration the influence of distant resonances by means of the frequency-dependent capacitance. Depending on the position of the resonance, this capacitance will be positive or negative and will increase or lower the static capacitance of the resonator. The possibility of applying the here given interpretation of the natural resonances of the piezo-electric resonators in an equivalent circuit was experimentally verified for type GT quartz resonators.

ASSOCIATION: Tesla Lanškroun, závod 05, Hradec Králové
(Tesla Lanškroun, Plant 05, Hradec Králové)

SUBMITTED: November 14, 1961

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35397
Z/042/62/000/003/002/004
E140/E463

9.2181 (1040)
24.2800 (1063, 1145, 1153)

AUTHOR: Zelenka, Jiří, Engineer

TITLE: On the electrical equivalent circuit of a piezoelectric resonator

PERIODICAL: Elektrotechnický časopis, no.3, 1962, 142-154

TEXT: The author derives a simplified equivalent circuit valid in the neighbourhood of a resonance of a piezoelectric crystal, differing from the usual circuit in that the parallel capacitance is not the low-frequency shunting capacitance of the electrodes but a function of frequency, which may take on both positive and negative values. Formulae are given which follow measured curves very closely, employing a few parameters measured at fixed frequencies. There are 9 figures, 3 tables and 13 references: 8 Soviet-bloc and 5 non-Soviet-bloc. The four references to English language publications read as follows: Ref.2: Cady W.C., Piezoelectricity. McGraw-Hill Book Comp., New York-London, 1946; Ref.4: Mason W.P. Bell Syst. Tech. Journal, v.13, 1934, 405; Ref.5: Mason W.P., Electromechanical Transducers and Wave Filters. D. van Nostrand, New York, 1946; Ref.7: Piezoelectricity. General Post Office-Selected Engineering Reports. Post Office-

Card 1/2

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

Z/042/62/000/003/002/004
E140/E463

On the electrical equivalent ...

Research Station, London, 1957.

ASSOCIATION: TESLA Lanškroun, závod 05, Hradec Králové
(TESLA, Lanškroun, Works 05, Hradec Králové)

SUBMITTED: August 27, 1961

Card 2/2

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

KRATOCHVILOVA, K.; TICHY, J.; ZELENKA, J.

The effect of radiation on the properties of piezoelectric resonators. Cs cas fys 12 no. 2:144-151. '62.

1.Katedra matematiky a fysiky, Vysoka skola strojni a textilni, Liberec (for Kratochvilova, Tichy).

2.Tesla Lanskroun, zavod 05, Hradec Kralove (for Zelenka)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, J.

The Q factor of contour vibration of piezoelectric resonators.
Cs cas fys 12 no. 2:182-185. '62.

1. Tesla Lanskroun, zavod 05, Hradec Kralove.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, J.

A contribution to the study of electric equivalent circuit of piezoelectric resonators including the effect of secondary resonances. Cs cas fys 12 no. 2:186-187 '62.

1. Tesla Lanskroun, zavod 05, Kradec Kralove.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

ZELENKA, Jiri, inz.

A contribution to the determination of electrical equivalent circuit of piezoelectric resonator. El tech cas 13 no. 3:142-154 '62.

1. Vyvojovy pracovnik, Tesla Lanskroun, zavod 05, Hradec Kradec Kralove.

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

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D291/D303

9.2186

AUTHOR: Zelenka, Jiří, Engineer

TITLE: Determining the attenuation decrease of narrow-band quartz filters in the neighborhood of undesirable responses of resonators

PERIODICAL: Slaboproudý obzor, v. 23, no. 4, 1962, 201-207

TEXT: The article deals with an investigation on the influence of undesirable responses of piezoelectric crystals on the attenuation response of narrow-band quartz filters made up of crystal vibrators and capacitors. The author states that the influence of undesirable responses upon filter transfer characteristics constitute a serious problem in the design of filters with mechanical resonators. These resonances cause an attenuation decrease in the suppressed frequency range and an attenuation increase in the band-pass range. This problem is especially serious in the utilization of piezoelectric resonators, ground out of monocrystals with low symmetry, whose high degree of disturbing resonances was pointed out by

Card 1/3

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Determining the attenuation ...

E.G. Bronnikova (Ref. 1: O parazitnykh kolebaniyakh pezoelektricheskikh plastin s osnovnymi prodolnymi kolebaniyami. Izvestiya AS USSR, seriya fiz. XX (1956), p 251). The attenuation decrease within the suppressed frequency range is characterized by a limit value, below which the attenuation of the filter will not decrease under influence of undesirable response, in the piezoelectric vibrators and within a specified frequency range. The validity of this limit value was confirmed in experiments and calculated by a method described in a paper by J. Zelenka (Ref. 9: Slaboproudý obzor, no. 18 (1957), p 696); (Ref. 11: Elektrotechnicky casopis XIII (1962)). The limit value of attenuation can be determined from the parameters of the electrical equivalent circuit of the crystal vibrators and the values of the respective filter networks, thus permitting the creation of conditions which make the influence of undesirable resonances of piezoelectric resonators tolerable from a standpoint of attenuation characteristics. There are 11 figures; 4 tables and 11 references: 8 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: W.G. Cady: Piezoelectricity. McGraw-Hill Book Comp., New York, London 1946; Piezoelectricity (Selected Engineering Reports). London: Her Majesty's Stationery Office 1957.

Card 2/3

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220020-5

Z/039/62/023/004/002/010
Determining the attenuation ... D291/D303

ASSOCIATION: TESLA Lanškroun, n.p. závod 05, Hradec Králové (TESLA Lanškroun, National Enterprise, Plant 05, Hradec Králové)

SUBMITTED: December 13, 1961

Card 3/3

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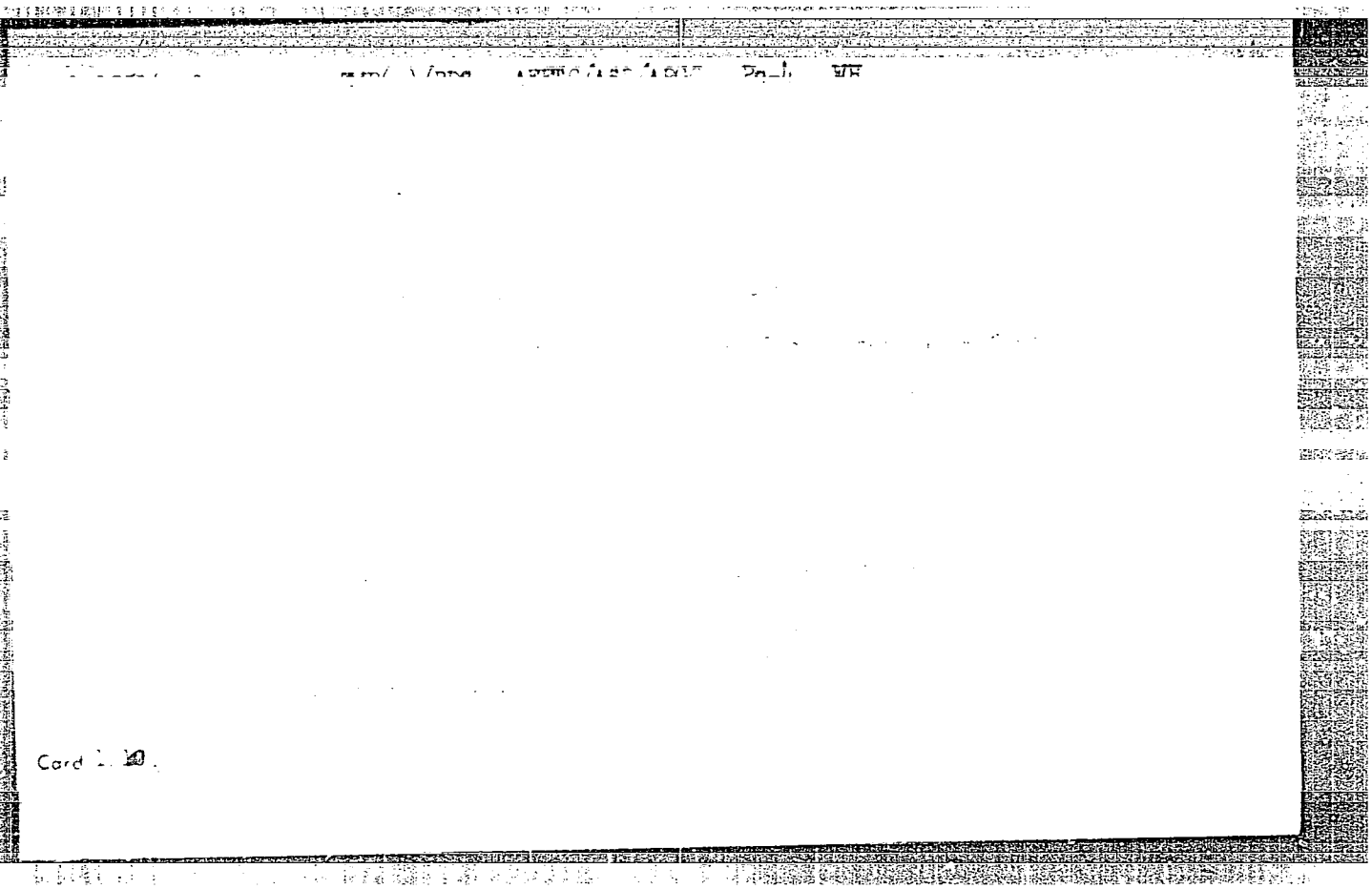

Card 1/10

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L 17516-63

ACCESSION NR: AP3001710

The relationship between the resonance frequency of GT-cut crystals and time is depicted in Figure 2 of Enclosure 4. The interpolated log curve is given by Equation 2 of Enclosure 2.

The relative daily stability of the resonance frequency of GT crystals was measured in specially prepared quartz crystals placed in a vacuum in [illegible] The relative stability was measured after [illegible] day [illegible]

[illegible]

and [illegible]$^{-10}$ respectively. It was concluded that shape essentially affects the long-term stability.

The quality factor Q_k of GT crystals was measured in relation to temperature. For GT crystals with a resonance frequency of 100 kc/sec, it was found [illegible] The results of this study are given in [illegible] The quality factor of a plano-convex AT crystal with a 30 mm-diameter and 3.384 mm-depth, and of another which was [illegible] diameter and 1.192 mm deep, was measured in terms of their resonance frequencies when the radius of the curvature in both cases was 100 mm. The results are presented in Figure 7 of Enclosure 6.

The article is supplemented by photographs of the resonators

Card 2/10

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