"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

FEDOROV, V.I.; SHVETS, I.T.; SHEL'MENKO, N.N.

Experimental investigation of temperature distribution in a rotor of drum design subject to nonsteady heat exchange. Trudy Inst.tepl. AN URSR no.13:53-59 '56. (MLRA 10:5)

(Turbines)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

S/021/61/000/006/008/009
D247/D301

26.2120

AUTHORS: Minyaylenko, M.O., Fedorov, V.I., and Shel'menko, N.N.

TITLE: Temperature measurement of turbine elements

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR, Dopovidi, no. 6, 1961, 759 - 762

TEXT: The authors, after discussing the importance of the temperature conditions in different parts of steam and gas turbines, describe experimental methods at exact temperature measurements in turbine rotors or housings, worked out in the department of thermal motors of the Institute of Heat and Power Engineering at the Academy of Sciences UkrSSR. A chromel-alumel thermocouple was prepared from an 0.5 mm wire, plaited with a glass thread impregnated with a silicone fire-proof cement. In the tested rotors a central opening was bored out with radial holes at chosen points, intersecting the central one. In the holes thermocouples were inserted by means of wires, the former being coated with a glass fabric pre-

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Temperature measurement of ...

serving them from mechanical damage. When the thermocouples were pulled through the holes, they were held fast in their place by a special device and welded to a chosen point; after welding, holes were filled with heat resistant cement and a metallic stopper was fixed on the top, its object being to withstand the cement pressure during the turbine high speed revolutions, and thus prevent dislocation of the thermocouples. A schematic drawing of the fixing device is given. For determining the exact temperature range in working and stationary turbine elements a special apparatus has been developed, permitting the recording of the variable EMF of thermocouples in a few seconds, within 2 %. The thermocouple EMF was conducted through a rotary contact, an automatic switch and through an amplifier to a recording oscillograph. Thermocouples from stationary elements were directly connected with the automatic switch. For evaluating the equipment operation, a method of comparison of the oscillograph readings of the tested thermocouples with those of standard ones was used, one of the control thermocouples being connected with its ends crossed, thus permitting the determination of

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Temperature measurement of ...

the amplifier background (Hb.g.). The evaluation proceeded as follows: (1) The difference between the oscillograph readings for two standard thermocouples was taken - $H_{st2} - H_o$, where H_{st2} - reading of the non-crossed standard thermocouple, H_o - reading of the crossed one. (2) The value of the background was determined:

$$H\ bg = \frac{H_{st2} - H_o}{2} .$$

(3) The difference $H_{st2} - H_3$ was determined, H_3 being the width of the light-ray tip taken from the oscillograph m. (4) To the value $H_{st2} - H_3$, the value of the background was added or subtracted,

$$H = H_{st2} - H_3 \pm H_f$$

(subtracted when $H_{st2} > H_o$, added when $H_{st2} < H_o$). The value "H" corresponds to the temperature difference: $t_{hj} - t_{cj}$ that of the

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hot and cold junctions of the standard thermocouples. (5) The correction scale for the oscillograph records was calculated:

$$K = \frac{t_{hl} - t_{cj}}{H}.$$

(6) The temperature of the investigated point was calculated:

$$t = (H_t - H_3 \pm H_f) K + t_{cj},$$

where H_t is the deflection of the light ray on the oscillograph under the effect of the EMF of the investigated thermocouple. The methods and equipment mentioned were used in the Institute of Heat and Power Engineering to determine local temperatures in turbine rotors and housings and for evaluating thermal stresses in these installations, and were found in practice to be very valuable. This report was presented by I.T. Shvets (Member of the Academy of Sciences UkrSSR). There are 3 figures.

Card 4/5

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25167

S/021/61/000/006/008/009
D247/D301

Temperature measurement of ...

ASSOCIATION: Instytut teploenergetyky AN URSR (Institute of Heat and Power Engineering, AS UkrSSR)

SUBMITTED: October 8, 1960

X

Card 5/5

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHEL'MIN, Nikolay Antonovich

[Mathematics] Matematika. Moskva, Vysshaia shkola.
Pt.1. 1963. 137 p. (MIRA 17:10)

1. Russia (1923- U.S.S.R.) Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

S[illegible]SYN, V.N.; SHEL[illegible], [illegible].V.

Our experience in prepa[illegible]ory [illegible] for a surveying team. Geod. i kart. no.1:19[illegible] [illegible] [illegible]

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELNIN, G.

The constancy of altitude marks at the leveling system of the city of Tallinn. p. 198.

PUBLIKATSIOONID. PUBLIKATSII. (Tartu. Ulikool. Tahetorn.)
Tartu, Estonia. Vol. 33, no. 3, 1958.

Monthly list of East European Accessions (EEAI) Vol. 9, no. 1, Jan. 1960.

Uncl.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[redacted], Aleksandr Kirillovich

[Senegal; its economy and foreign trade] Senegal; ekonomika i vneshniaia torgovlia. Moskva, Vneshtorgizdat, 19[illegible]. 83 p. (MIRA 17:8)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

KILIGINA, M.L. (Kazan'); KRUPIN, V.I. (Kazan'); SHEL'NOVA, A.K. (Kazan');
SHISHKIN, A.V. (Kazan'); KHALYMBADZHA, V.G. (Kazan')

Stratigraphy of coal deposits in Tatarstan and southern Udmurt
A.S.S.R. Uch.zap.Kaz.un. 115 no.10:94-98 '55. (MLRA 10:5)
(Tatar A.S.S.R.--Coal geology)
(Udmurt A.S.S.R.--Coal geology)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

KRUPIN, V.I.; PILIGINA, M.L.; SHEL'NOVA, A.K.; KHALYMBADZHA, V.G.

Carboniferous sediments of the western, northern, and northeastern Tatar A.S.S.R. and southern Udmurtia. Uch. zap. Kaz. un. 121 no.2:3-94 '61. (MIRA 14:9)
(Tatar A.S.S.R.--Geology, Stratigraphic)
(Udmurt A.S.S.R.--Geology, Stratigraphic)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

POZNER, Viktor Mikhaylovich; KIRINA, Tamara Il'inichna; PORFIR'YEV, Gleb Sergeyevich. Uchastvovali: AFRODOVA, A.A.; VISSARIONOVA, A.Ya; ZAKHAROVA, M.M.; KILIGINA, M.L; KOVYAZINA, N.M.; LUN'YAK, I.A.; MUSINA, K.K.; ORLOVA, I.N.; SAVINOVA, S.I.; TAZLOVA, Ye.N.; TERENT'YEVA, V.D.; FADEYEVA, M.I.; CHERNOVA, Ye.I.; SHEL'NOVA, A.K. TIKHIY, V.N.,red.; DAYEV, G.A.,ved.red.; GENNAD'YEVA, I.M.,tekhn.red.

[Volga-Ural oil-bearing region; Carboniferous sediments] Volgo-Ural'skaia neftenosnaia oblast'. Kamennougol'nye otlozheniia. Leningrad, Gos.nauchn.tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1957. 287p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy no.112) (MIRA 11:12)
(Volga Valley--Geology, Stratigraphic)
(Ural Mountain region--Geology, Stratigraphic)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

KILIGINA, M.L.; SHEL'NOVA, A.K.

Boundary between the Devonian and Carboniferous in the Tatar A.S.S.R. and the age of the terrigenous formation in the lower Carboniferous. Trudy VNIGNI no.14:97-103 '59. (MIRA 12:10)

1.TSentral'naya nauchno-issledovatel'skaya laboratoriya tresta Tatneftegazrazvedka.
(Tatar A.S.S.R.--Geology, Stratigraphic)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

GOLIKOV, S.N.; SELIVANOVA, A.T.; SHELOKHANOVA, V.Ye.

Pharmacology of 1,3-aminopropanol derivatives. Farm. i toks. 23 no.1:8-12 Ja-F '60. (MIRA 14:3)

1. Laboratoriya toksikologii (zav. - doktor med.nauk V.Ye.Shelokhanova) Sanitarno-khimicheskogo instituta AMN SSSR.
(ALCOHOLS)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SEMICHASTNOV, V.

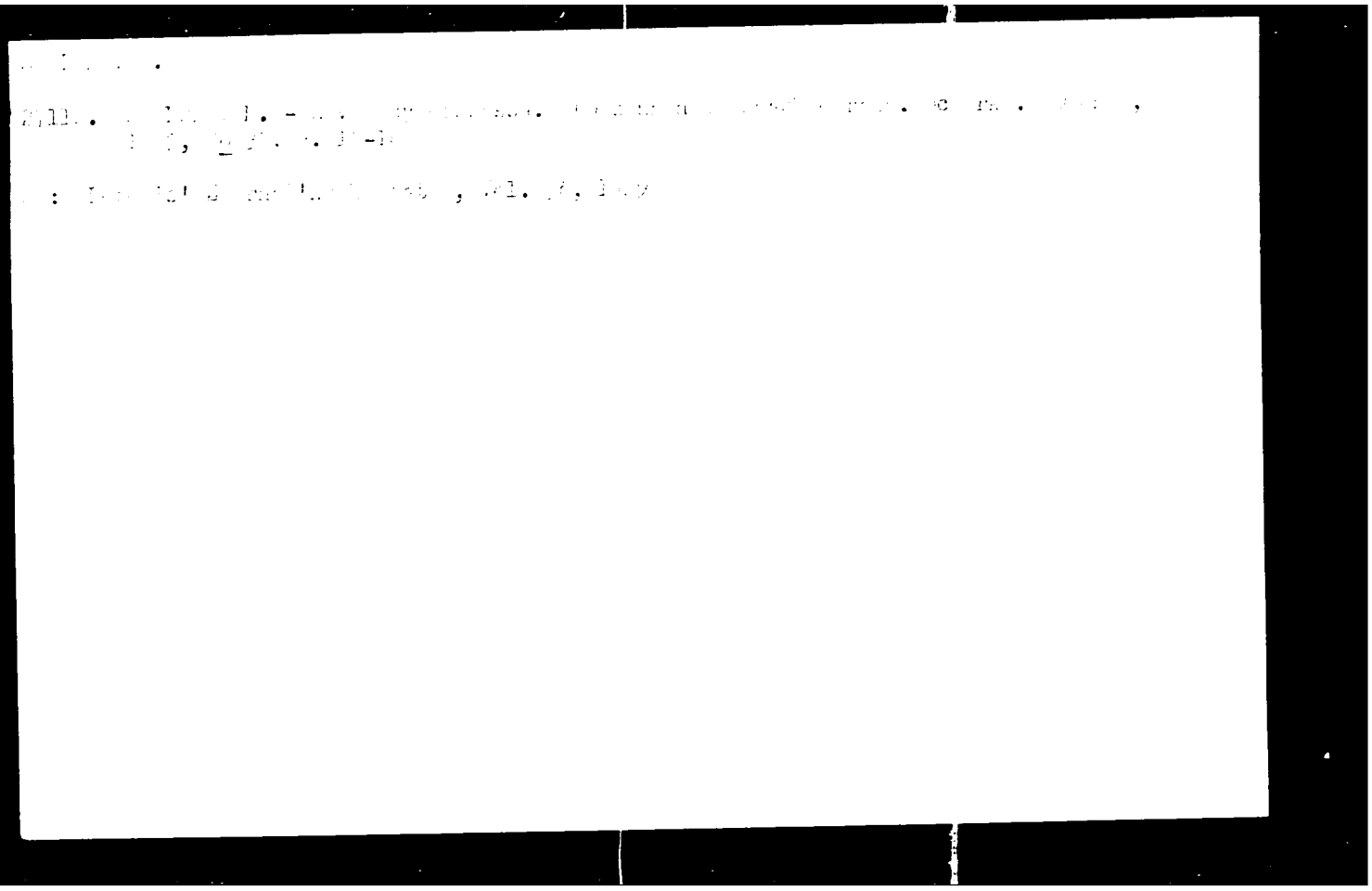
Farm Machinery.

Mechanization of production is growing. Kolkh. proizv., 12 , No. 4, 1952.

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

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[redacted], E. V. (and I. I. Chernyayev, N. A. Solovyna, F. F. Illert, N. D. Zhelekov and V. P. Markov)

"[redacted] UKRAINE [redacted] UNION".

by I. I. Chernyayev, N. A. Solovyna, F. F. Illert, N. D. Zhelekov and V. P. Markov.

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept. 1958.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELEKOVA, Z.I.

USSR/Agriculture - Maize

Card 1/1

Pub. Jour : Referat. Zhur. - Biol., No 3, 1958, 11.

Author : Shelekova, Z.I.

Inst : Krymskaya selektsionnaya stantsiya.

Title : Obtaining hybrid corn seed by [illegible] pollination.

Orig Pub : Selektsiya i semenovodstvo, 1956, No 4, 24-28.

Abstract : Methods of acquiring hybrid corn seed without removing the panicles from the maternal plants have been developed by the Crimean Selection Station. Some questions of the impregnation of self-pollinating lines and simple hybrids have been studied. When a self-pollinating line is used as the maternal form, it is possible to develop hybrids without removing the panicles [illegible] from the maternal plant.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

Problem concerning the stability of an adoptive control system of a certain class. Trudy Inst. avtom i elektrometr. SO AN SSSR no.2:18-35 '64. (MIRA 17:11)

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMANOV, I.

Our support. NTO 2 no.4:26-27 Ap '60. (MIRA 13:6)

1. Direktor L'vovskoy khlopkopryadil'noy fabriki.
(Lvov--Cotton spinning--Technological innovations)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[redacted], N.P.

Injury of the common bile duct during a gastric resection due to peptic ulcers. Trudy SMI 16:74-79 '63. (MIRA 18:2)

1. Iz kafedry gospital'noy khirurgii (zav. - prof. A.N.Kartavenko) Smolenskogo gosudarstvennogo meditsinskogo instituta.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHEROMANOV, N.P.

General and circumscribed peritonitis following a stomach resection for peptic ulcers. Trudy SMI 1:80-89 '63. (MIRA 18:1)

Analysis of the causes of lethality following a stomach resection for peptic ulcers according to clinical materials of hospital surgery of the Smolensk Medical Institut during 1942-1961. Ibid.:90-97

1. Iz kafedry gospital'noy khirurgii (zav. - prof. A.N.Kartavenko) Smolenskogo gosudarstvennogo meditsinskogo instituta.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[illegible], [illegible].

Disorders of anastomotic [illegible] following a stomach resection for peptic ulcers. Trudy [illegible] 17:1[illegible]-134 '63. (MIRA 18:1)

1. Iz kafedry gospital'noy khirurgii (zav. kafedroy - prof. [illegible] Bartavenko) [illegible] gosudarstvennogo meditsinskogo instituta.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

CHELGAEV, Yu. V.

Opyt ratsionalizatsii protsessov kovki i shtampovki. (Vestn. Mash., 1948, no. 7, p. 37-40)

(Rational forging and stamping operations.)

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMEV, Yu. V.

Tipizatsiia protsessov kovki kolenchatykh valov. (Vestn. Mash., 1948, no. 9, p. 44-45)

(Standardized operations of forging crankshafts.)

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHILOVSKIY, Ye. T.

O prochnosti kovanogo kolenchatogo vala v razlichnykh ego chastiakh. (Vestn. Mash., 1951, no.7, p. 15-14)

Strength of various parts of a forged crankshaft.

DLC: TN4.M

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMAYEV, YU. V., ENG.

Steel Forgings

Influence of forging operations on the quality of forged steel, Vest. mash., 32 no. 3, 1952.

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

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

122-5-15/35

AUTHOR: Shelomayev, Yu. V. (Engineer)

TITLE: The Manufacture of Large Crankshafts from the Billet by means of Progressive Die Stamping (Izgotovleniye krupnykh kolenchatykh valov iz slitka sposobom posledovatel'noy shtampovki)

PERIODICAL: Vestnik Mashinostroyeniya, 1957, Nr 5, pp.33-36 (USSR)

ABSTRACT: Four currently used forging processes for crankshafts are enumerated, none of which ensures the absence of traces of liquation zoning at the finally machined crank pin surfaces. The use of hot die stamping instead of flame cutting and forging has been developed recently. Two new procedures are mentioned, namely the progressive semi-die stamping without flash in special cast dies, developed by the Research Institute of the Ministry for the Defence Industry (NII Ministerstva Oboronnoy Promyshlennosti) and sectional progressive stamping with flash (developed by the "Uralmashzavod" jointly with VPTI MTM). Both methods are briefly described with sketches including the dies. In the first method, after pressing between a V and a flat to a diameter of 500 mm the shaft is necked-in by a progressive die. The cranks are then drawn out and each pair is stamped in a die. The shaft is finished by drawing out the ends and straightening. Compared with the earlier forging the weight of the blank is reduced from 6.5 to

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The Manufacture of Large Crankshafts from the Billet by means of Progressive Die Stamping.

5.5 tons, the forging time reduced by eight hours (from 15). In the second method, after drawing out the shaft, it is necked-in and the cranks are drawn out. After a preparatory die stamping operation of the whole shaft, using all the sections of the upper part of the die, finish stamping is applied progressively to three sections. Finally, the flash is cut off. The billet weight has been reduced from 9 to 2.5 tons and the forging weight from 5150 to 1300 kg. The stamping time is 3 hours and the forging press of 30 000 tons capacity has been replaced by a 10 ton press. The scrap percentage has been reduced from 35% to 3%. There are 6 figures.

AVAILABLE: Library of Congress.

Card 2/2

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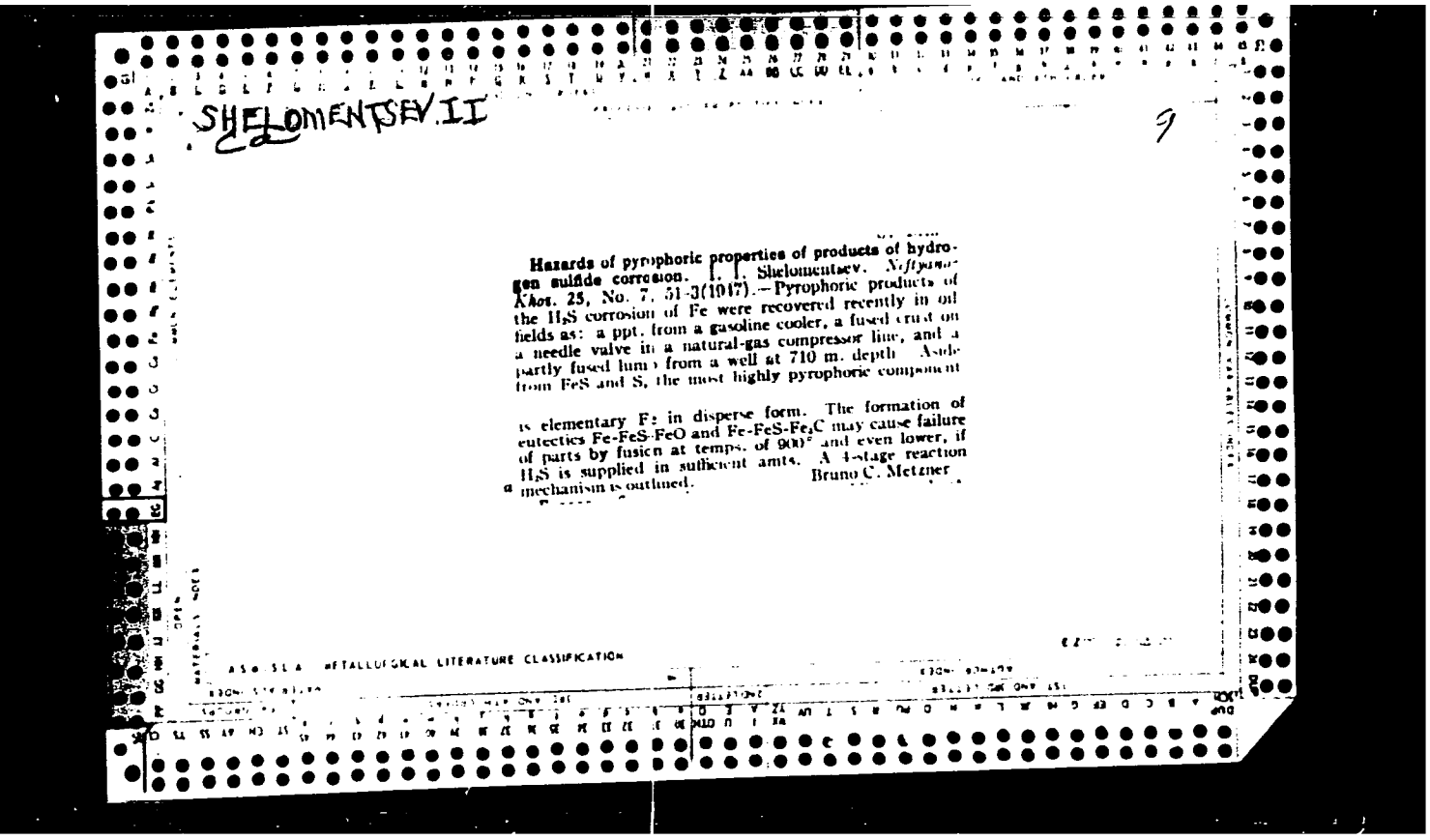

SHELOMENTSEV, I.I

9

Hazards of pyrophoric properties of products of hydrogen sulfide corrosion. I. I. Shelomentsev. *Neftyanoe Khoz.* 25, No. 7, 51-3(1947).—Pyrophoric products of the H_2S corrosion of Fe were recovered recently in oil fields as: a ppt. from a gasoline cooler, a fused crust on a needle valve in a natural-gas compressor line, and a partly fused lump from a well at 710 m. depth. Aside from FeS and S, the most highly pyrophoric component is elementary Fe in disperse form. The formation of eutectics Fe-FeS-FeO and Fe-FeS-Fe_3C may cause failure of parts by fusion at temps. of 900° and even lower, if H_2S is supplied in sufficient amts. A 4-stage reaction mechanism is outlined.
Bruno C. Metzner

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

CHLOVTSEV, I. I.

"Combating Corrosion in the Oil Fields of the Second Baku," published by Gostoptekhizdat (State Scientific and Technical Publishing House of Petroleum and Mined-Fuel), Moskva, 1948, 40 p.

Translation of pages 4-8, D-506514, 19 Aug 1955.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMENTSEV, T.

Under favorable industrial conditions. Prom. koop. 14 no.5:32 My '60.
(MIRA 13:12)

1. Predsedatel' pravleniya arteli invalidov im. 3-go veresnya, L'vov.
(Lvov--Invalids--Occupations)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

MINYAYEV, V.A.; SHELOMENTSEVA, K.A.; DEMIDOV, V.A.

Concerning the articles, "Medical care without registration in outpatient institutions of Tashkent" and "Distribution of surgical beds in a city." Zdrav. Ros. Feder. 5 no.5:39-41 My '61. (MIRA 14:5)

1. Zaveduyushchiy Leningradskim gorodskim otdelom zdravookhraneniya (for Minyayev). 2. Glavnyy vrach ob"yedinennoy bol'nitsy imeni V.I.Lenina, Leningrad (for Shelomentseva). 3. Glavnyy vrach polikliniki No.37, (for Demidov).
(TASHKENT--HOSPITALS--OUTPATIENT SERVICES)
(PENZA--HOSPITAL BEDS)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

CHERNOVA, I.V.; KOZLOVA, A.A.; SAGITOVA, R.G.; SHELOMENTSOVA, N.I.

Epidemiologic effectiveness of enteroparenteral vaccination against dysentery. Zhur. mikrobiol. epid. i immun. no.11:58-60 N '54. (MLRA 8:1)

1. Iz Ufimskogo instituta vaktsin i syvorotok (dir. U.S.Yenikeyeva, nauchnyy rukovoditel' prof. N.I Mel'nikov)

(DYSENTERY, BACILLARY, prevention and control, vacc., enteroparenteral technic)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[illegible], V. A.

[illegible] an energy analysis of the Bowen's reaction series. Geokhimiia no.12:1313-1317 D '64. (MIRA 18:8)

1. Verkhne-Ural'skaya kompleksnaya geologo-razvedochnaya partiya Chelyabinsk ao geologo-razvedochnogo tresta Ural'skogo geologicheskogo upravleniya, g. Verkhne-Ural'sk.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SMAL', S.I., izhener; SHELOMOV, B.Ye., inzhener.

Using trolley wires as a power supply for gantry crane motors.
Mekh.stroi. 13 no.10:23-24 O '56. (MLRA 9:11)
(Cranes, derricks, etc.)
(Electric lines--Overhead)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

GOROZHANINOV, N.Ye., inzh.; SHELOMOV, B.Ye., inzh.

Submerged-melt welding of crane rails. Mov.tekh.mont.i spets.rab.v stroi. 21 no.12:19-22 D '59. (MIRA 13:3)

1. Nauchno-issledovatel'skiy institut promyshlennykh zdaniy i sooruzheniy Akademii stroitel'stva i arkhitektury SSSR.
(Cranes, derricks, etc.) (Electric welding)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

GALAKTIONOV, A.T.; DENISOV, Yu.A.; KOPYTOV, G.T.; MASLOV, Yu.A.; NIKONOV, I.P.; PETUNIN, I.V.; KOCHEVA, G.N.; KUZNETSOV, A.P.; LELEKO, N.M.; RAZIKOV, M.I.; SPESHKOV, V.V.; STEPANOV, B.V., STEPANOV, V.V., kand. tekhn. nauk; SHELOMOV, B.Ye.; YUNYSHEV, G.P.; YES'KOV, K.A., dots., retsenzent; BAKSHI, O.A., dots., retsenzent; BEREZKIN, P.N., dots., retsenzent; PATSKEVICH, I.R.,dots., retsentzent; RUDAKOV, A.S., dots., retsenzent; FIZHBEYN, N.B., inzh., retsenzent; KHRUSTALEV, L.Ya., inzh., retsenzent; KRUTIKHOVSKIY, V.G., inzh., red. BOBROV, Ye.I., kand. tekhn. nauk, red. DUGINA, N.A., tekhn. red.

[Welding handbook] Spravochnik rabochego-svarshchika. Pod red. V.V.Stepanova. Moskva, gos. nauchno-tekhnizd-vo mashinostroit. lit-ry, 1960. 640 p. (MIRA 14:6)
(Welding)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOKOV, B.Ye., inzh.

Stand for automatic welding with stageless regulation of the speed of rotating products. Mov.tekh.mont.i spets.rab.v stroi. 22 no.1:24-25 Ja '60. (MIRA 13:5)

1. Trest Uralstal'konstruktsiya.
(Electric welding---Equipment and supplies)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOV, I. K.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
General and Physical Chemistry

8

(3)

The reactions between nitrates and nitrites of metals of the first and second group of the periodic system in the molten state. VII. Investigation of the ternary system of lithium, potassium, and thallium nitrates. P. I. Protsenko and I. K. Shelomov (State Univ., Rostov on Don) *Zhur. Obshchei Khim.* 23, 1433–7(1953); cf. *C.A.* 48, 1788i.—Relations within the ternary system were investigated by observing the behavior and by measuring the m.p. of various mixts. The binary system of Tl and Li nitrates has one eutectic at 132° analyzing 70.5% $TlNO_3$ and 29.5% $LiNO_3$. The ternary system consists of systems having one common lowest melting eutectic at 94° which analyzes KNO_3 34, $LiNO_3$ 33, and $TlNO_3$ 33%. $TlNO_3$ behaves similarly to nitrate of Li and K and does not react in melts. It forms, however, eutectics in binary and ternary systems.

M. O. Holowaty

11-5-54

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOV, I. K.

Chem Chemistry

4/

464

Peculiarities of the phase interface of solutions during boiling. V. G. Glelm and I. K. Shelomov (Inst. Railroad Transportation Engrs., Rostov-on-Don). *Zhur. Prikład. Khim.*, 30, 32–8 (1957); cf. *C.A.* 49, 10014*b*.—The surface tension σ of 1 and of 2 mole % solns. of NaCl, NaOH, Na_2SO_4, Na_2CO_3, and $MgSO_4$ was detd. in the range of 20–90 ± 0.05°. The difference in σ of these solns. was slight. Hence, the desorption of these salts from the surface of their solns. could not be selective, i.e. the relative proportions of these salts at the surface and in the bulk of the soln. was the same and independent of the temp. The difference $\sigma_{soln.} - \sigma_{H_2O} = \text{const.}$ and $\sigma_{soln.} = \sigma'_{soln.} (\partial\sigma_{soln.}/\partial T)(T - T_1) = \sigma'_{soln.} + (\partial\sigma_{H_2O}/\partial T)(T - T_1)$, where $(\partial\sigma_{H_2O}/\partial T)(T - T_1)$ is independent of the concn. C and on differentiation becomes $\partial\sigma_{soln.}/\partial C = f(T)$ (σ' is σ at some specific temp. T). The temp. coeff. of σ is independent of the electrolyte and the compn. of the soln. and is equal to that of H_2O. The surface activity, however, is a function of the concn., the nature of the solute, and the temp. I. Bencowitz

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

OSIPOV, O.A.; SHELOMOV, I.K. (Rostov-na-Donu)

The relation between the dipole moment and surface tension [with summary in English]. Zhur.fiz.khim.31 no.8:1756-1761 Ag '57. (MIRA 10:12)

(Dipole moments) (Surface tension)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

9(4) SOV/20-122-3-23/57

AUTHORS: Osipov, O. A., Shaionov, I. K.

TITLE: On the Problem of the Hydration of Ions in Aqueous Solutions (K voprosu o gidratatsii ionov v vodnykh rastvorakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 3, pp 428-430 (USSR)

ABSTRACT: D. Bernal and R. Fauler (Ref 1) and also O. Ya. Samoylov (Ref 2) showed that in aqueous solutions different ions act in a different manner upon the translatory motion of the nearest water molecules. The multi-charged and the small singly charged ions diminish the intensity of this motion, but the large singly charged ions intensify it, i.e. the small ions intensify the orientation of the dipoles in water, but the large ions cause a desorientation of such dipoles. This phenomenon is called "orientation dehydration"; it can be discussed according to the electrostatic theory of the liquid state. The authors deduced an approximate expression for the internal field E in any point of the polar liquid. At room temperature, $E \sim 4,2.10^5$ CGS. If one water molecule is exchanged for an ion, the energy state of the liquid remains

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On the Problem of the Hydration of Ions in Aqueous Solutions

unchanged only in the following case: The force with which the ion acts upon the surrounding molecules, is equal to the force with which the surrounding molecules (naturally without changing the degree of their orientation) act upon the ion (this means an equilibrium of the forces). In other words, the field strength caused by the ion in the centers of the surrounding molecules must be equal to the internal field strength E. For $E_{ion} > E$ there will be a positive hydration, and for $E_{ion} < E$, a negative one. E_{ion} denotes the field strength of the ion. A formula is deduced for the critical radius of the ion where the positive hydration becomes negative. An expression is given also for the effective radius of the water molecule. Finally, the authors calculate the additional energy of the orientation which is transmitted by the ion to the nearest molecules. The values of Δu (additional energy of the orientation of the molecule in the field of the ion) agree well with the experimental data. There are 1 table and 11 references, 11 of which are Soviet.

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SOV/20-122-3-29/57

On the Problem of the Hydration of Ions in Aqueous Solutions

ASSOCIATION: Rostovskiy-na-Donu gosudarstvenyy universitet (Rostov-na-Donu State University)

PRESENTED: May 17, 1958, by A. N. Frumkin, Academician

SUBMITTED: December 13, 1957

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SOV/80-59-1-37/44

AUTHOR: Gleym, V.G., Shelomov, I.K. and Chidlovskiy, B.K.

TITLE: On the Processes Leading to Drop Formation During Disruption of Bubbles on the Surface of Liquid - Gas Separation (O protsessakh, privodyashchikh k generatsii kapel' pri razryve puzyrey na poverkhnosti razdela zhidkost'-gaz)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 218-222 (USSR)

ABSTRACT: The study of phenomena occurring between the liquid and gas phases in the processes of boiling and bubbling necessitated the consideration of the geometry of bubbles in connection with the problems of their stability on the separation surface and generation of moisture during their bursts. The authors investigated the phenomenon theoretically and then carried out experiments for determination of the weight of drops in dependence on the bubble radius. The conclusions drawn are as follows: 1. The bubble on the surface, which separates liquid from gas, consists of two segments, the upper of which can be approximately considered as a hemisphere; 2. The formation of drops from the surface of liquid can take place only up to a certain critical value of the bubble radius; 3. There are definite relations between the kinetic energy of the formed

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

On the Processes Leading to Drop Formation During Disruption of Bubbles on the Surface of Liquid - Gas Separation

drops, its mass, the height of its lift, and the radius of the bubble: 4. The formation of drops in alkaline media is energetically less probable than in neutral ones under the same other conditions.
There are 4 graphs, 1 set of photos, 1 table, and 5 references, 4 of which are Soviet and 1 English.

ASSOCIATION: Kafedra khimii Rostovskogo-na-Donu instituta inzhenerov zheleznodorozhnogo transporta (Chemistry Chair of the Rostov-na-Donu Institute of Railroad Transport Engineers)

SUBMITTED: July 19, 1957

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

5(4)
AUTHORS: Osipov, O. A., Shelomov, I. K.

SOV/156-59-2-8/46

TITLE: The Determination of the Instability Constant of Complex Compounds by Means of the Polarization Method (Opredeleniye konstanty nestoykosti kompleksnykh soyedineniy metodom polyarizatsii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 253-255 (USSR)

ABSTRACT: The quantitative relationship between the degree of dissociation of complex, of electrically nonconductive compounds and their orientation polarization is investigated. The equations for the orientation polarization are derived and found for the instability constant

$$k = \frac{1 - \alpha'}{\alpha' \left[1 - x_B(2 - \alpha')\right]}$$

(x_B = concentration of the component B). The polarization equations and the value of the instability constant were tested on binary systems yielding complex compounds by hydrogen bonds. Table 1 shows the values for chloroform diethyl ether,

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

The Determination of the Instability Constant of Complex Compounds by Means of the Polarization Method

table 2 for chloroform - methyl acetate. The calculated instability constant amounts to 4.20 ± 0.2 for the first system, to 3.92 ± 0.12 for the second. There are 2 tables and 7 references, 5 of which are Soviet.

PRESENTED BY: Kafedra fizicheskoy i kolloidnoy khimii Rostovskogo-na-Donu gosudarstvennogo universiteta
(Chair of Physical and Colloid Chemistry, Rostov-na-Donu State University)

SUBMITTED: October 23, 1958

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SOV/80-32-4-12/47

5(4)

AUTHORS: Gleym, V.G., Shelomov, I.K.

TITLE: The Physical Chemistry of Foams (K fiziko-khimii pen)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 778-785 (USSR)

ABSTRACT: The effect of temperature, pressure and physical-chemical properties on the stability and average life of foam films is investigated. It is shown that the rupture energy of the film depends directly on the surface tension and on the square of the film thickness. For solutions the same mechanism is effective, but the connection between the equilibrium values of the coefficient of surface tension and the forces of intermolecular cohesion is more complicated. The rupture energy of the film is determined by the ratio of adsorption to the value of the surface tension of the solutions. The stability of the film in solutions is higher than in pure liquids. Experimental results correspond to the calculated values as well as to results obtained by Venstrem and Rebinder [Ref 5]. The maximum stability of the foam corresponds to the maximum value of the film stability. The length of the hydrocarbon chain increases the film stability to a certain value but surface activity increases continuously with the length of the hydro-

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

carbon chain. Foam dampers are characterized by a high adsorption potential and low film rupture energy. Trapeznikov, Pozin, D'yakonov, Zel'dovich, Kornfel'd and Yerchikovskiy are mentioned in the text.
There are 5 graphs, 3 tables and 14 references, 13 of which are Soviet and 1 German.

ASSOCIATION: Kafedra khimii Rostovskogo instituta inzhenerov zh.-d. transporta (Chair of Chemistry of the Rostov Institute of Engineers of Railroad Transportation)

SUBMITTED: September 20, 1957

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

5(4) SOV/80-32-5-20/52

AUTHORS: Gleym, V.G., Shelomov, I.K., Shidlovskiy, B.R.

TITLE: The Stability of Electrolyte Foam

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1046-1050 (USSR)

ABSTRACT: The present article is based on /Refs 1, 2/. The value of absorption of diluted solutions of electrolytes is based on Gibbs' equation in the form proposed by Semenchenko /Ref 3/. In the surface-inactive field the stability of films increases in direct proportion with the coefficient of surface tension. A method has been proposed by Shidlovskiy ensuring the generation of a single bubble at the liquid-gas interface at a time. The apparatus for the method is shown in Figure 1. The mean time of existence of the bubbles was determined for NaCl, Na_2SO_4, NaOH, Na_2CO_3 and $MgSO_4$. The stability of the bubbles increases with the concentration to a value of about 500 mg-equ./l. At this point the decrease of the film thickness starts, which has been established by Deryagin /Ref 4/. The highest stability is produced by substances causing an alkaline reaction of the solution, like NaOH and Na_2CO_3. This is explained by the interaction of the

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hydroxyl ions with the water molecules.
There are: 4 graphs, 2 tables, 1 diagram and 5 Soviet references.

ASSOCIATION: Kafedra khimii Rostovskogo-na-Donu instituta inzhenerov zh.-d. transporta (Chair of Chemistry of the Rostov-na-Donu Institute of Engineers of Railroad Transportation)

SUBMITTED: October 7, 1957

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHVLOKOV, I. N., Cand Chem Sci -- (diss) "Some problems in the physico-chemistry of dielectrics." Novocherkassk, 1960. 20 pp; (Ministry of Higher and Specialist Education RSFSR, Novocherkassk Order, Red Banner Polytechnic Inst im S. Ordzhonikidze); 150 copies; price not given; (KL, 18-60, 147)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

GLEYM, V.G., doktor tekhn.nauk; SHELOMOV, I.K., inzh.; SHIDLOVSKIY, B.P., inzh.

The effect of suspended matter on the stability of elementary foam and carry-over of moisture. Teploenergetika 7 no.3: 17-20 Mr '60. (MIRA 13:5)

1. Rostovskiy institut inzhenerov zheleznodorozhnogo transporta. (Chemical engineering) (Foam) (Bubbles)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOV, I.K.; SPICHAK, M.K.

Reservoir influence on hydrological and hydrochemical conditions in the lower course of rivers. Dokl.AN SSSR 133 no.2:457-458 Jl '60. (MIRA 13:7)

1. Azovskiy nauchno-issledovatel'skiy institut rybnogo khozyaystva, Rostov-na-Donu. Predstavleno akademikom N.M. Strakhovym.
(Don River--Water--Composition)
(Don River--Hydrology)
(Tsimlyansk Reservoir)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

OSIPOV, O.A.; PANINA, M.A.; KASHIRENINOV, O.Ye.; NEMIROV, G.V.; SHELOMOV, I.K.

Dielectric constant of binary liquid systems consisting of polar components. Zhur.ob.khim. 31 no.10:3153-3160 O '61. (MIRA 14:10)

(Systems (Chemistry)) (Dielectrics)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOV, I.K.; OSIPOV, O.A.; KASHIRENINOV, O.Ye.

Complex formation in diluted solutions by the method of molecular polarizations. Zhur.ob.khim. 33 no.4:1056-1059 Ap '63. Zhur.ob.-khim. 33 no.4:1056-1059 Ap '63. (MIRA 16:5)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.
(Complex compounds--Dipole moments)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[redacted], A.K., [redacted], S...

Flow of biogenic elements in the Don River. Trudy AzNIIRKH no.4:7-16 '63. (MIRA 17:8)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[redacted]

[illegible] (VTRA 17:8)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

135-58-4-13/19

AUTHORS: Lekanov, A.G., and Shelomov, M.I., Engineers

TITLE: New Design of Roller Support With Independent Drive (Novaya konstruktsiya rolikoopory s nezavisimym privodom)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 4, pp 39-40 (USSR)

ABSTRACT: In 1957, new roller supports came into use at the Podol'skiy zavod (Podol'sk Plant) for the automatic welding of annular seams on large cylindrical objects. The machine is described and illustrated by a schematic drawing. The device is simple to manufacture and can be applied in all production operations.
There is 1 figure.

ASSOCIATION: VPTI tyazhëlogo mashinostroyeniya (VPTI of Heavy Machine-Building)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOVA, I.N., red.; ZAYTSEVA, L.A., tekhn. red.

[Along tourist routes; tourist bases and routes of the Moscow Council of Tourism of the Moscow City Council of Trade Unions] Po turistskim marshrutam; turistskie bazy i marshruty Moskovskogo soveta po turizmu MGSPS. Moskva, Profizdat, 1963. 197 p. (MIRA 17:2)

1. Moskovskiy sovet po turizmu.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

ARKHANGEL'SKAYA, L.A.; [illegible] V. I.; [illegible], V.N.; SHELIKOV, I.N., red.

[Translation of current topics] Aktual'nye temy professiza. Moskva, Profizdat, 1955. 4[illegible] p. (MLRA 18:3)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

LO[illegible]A, N. A.

SHELOMOVA, N.A.

Nature of plants which do not shoot during alteration. Uch.zap. Len.un. no.165:100-111 '53. (MLRA 7:7)

1. Laboratoriya genetiki rasteniy kafedry genetiki i selektsii (zaved.yushchiy kafedroy professor N.V.Turbin)
(Botany--Variation) (Plant breeding)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SH LO VA, N. A.

SHELOMOVA, N.A.

Relation of the progress of alteration of winter wheats to spring varieties to the degree of wintering of the original varieties. Uch.zap.Len.un. no.165:125-134 '53. (MLRA 7:7)

1. Laboratoiya genetiki rasteniy kafedry genetiki i selektsii (zaveduyushchiy kafedroy professor N.V.Turbin)
(Wheat)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

S/147/62/000/003/007/007
E199/E488

AUTHOR: Shelomov, N.A.

TITLE: On stresses existing in a thin-walled (single cell) beam in the region of a cut-out or discontinuity

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Aviatsionnaya tekhnika, no.3, 1962, 122-130

/D

TEXT: The usual thin-walled structures assumptions are taken. The problem is based on the method of Professor Yu.G.Odinokov (Trudy KAI, no.18, 1946)

$$G\sum_{k=1}^{k=n_p} a_{ik}W_{kp} - Ef_i\ddot{W}_{ip} = R_{ip}(z) \qquad i = 1, 2, \ldots, n_p, \qquad (1)$$

where $W_{ip}(z)$ - unknown axial displacement of stringers, n_p - number of stringers in p bay, E, G - elastic moduli, f_i - cross-sectional width of the stringer plus skin. Solution of this equation involves determination of 1) characteristic roots $\lambda^{(k)}$; 2) multipliers $b_{ip}^{(k)}$ which reduce it to a standard form; 3) p standard coordinates

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

On stresses existing in ...

$$\varphi_p^{(k)} = \sum_{l=1}^{l=n_p} Ef_l b_{lp}^{(k)} \cdot W_{lp}(z),$$

$$\psi_p^{(k)} = -\sum_{l=1}^{l=n_p} b_{lp}^{(k)} \cdot R_{lp}(z) \qquad (3)$$

($E \cdot f_i \cdot b_{ip}^{(k)} = h_{ip}^{(k)}$ represents some matrix H_p)

4) general integral

$$\left.\begin{aligned} \varphi_p^{(k)}(z) &= C_{1p}^{(k)} \cdot z + C_{2p}^{(k)} + \bar{\varphi}_p^{(k)}(z) \\ \bar{\varphi}_p^{(k)}(z) &= \int_0^z (z-t)\,\psi_p^{(k)}(t)\,dt \end{aligned}\right| \quad k=1, 2, \ldots, \nu, \qquad (4)$$

$$\left.\begin{aligned} \varphi_p^{(k)}(z) &= C_{1p}^{(k)} \operatorname{sh} \lambda_p^{(k)} z + C_{2p}^{(k)} \operatorname{ch} \lambda_{pz}^{(k)} + \bar{\varphi}_p^{(k)}(z) \\ \bar{\varphi}_p^{(k)}(z) &= \frac{1}{\lambda_p^{(k)}} \int_0^z \operatorname{sh} \lambda_p^{(k)} (z-t)\,\psi_p^{(k)}(t)\,dt \end{aligned}\right| \quad k=(\nu+1) \ldots n_p,$$

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

On stresses existing in ...

5) $d_p^{(k)}$ - elements of H_p transposed;

6) general integral

$$W_{ip} = \sum_{k=1}^{k=n_p} c_{ip}^{(k)} \cdot \varphi_p^{(k)}(z), \qquad (5)$$

The method developed by the author can be applied to a single cell of an arbitrary cross-section loaded by any system of forces. It can be seen, from the included examples, that: 1) stringer stresses in a built-in beam, calculated by the above method, compare better with the experimental results than the stresses obtained by conventional equations; 2) width of the cut-out α and the original number of stringers n have a strong influence on the stress in a beam with a short cut-out.

$\alpha = \frac{m+1}{n} 2\pi$, m - number of cut away stringers.

There are 6 figures and 6 tables.

SUBMITTED: October 19, 1961

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

S/879/62/000/000/073/088
D234/D308

AUTHOR: Shelomov, N. A. (Khar'kov)

TITLE: Stressed state of thin-walled systems of variable cross section

SOURCE: Teoriya plastin i obolochek: trudy IIVsesoyuznoy konferentsii, L'vov, 15-21 sentyabrya 1961 g. Kiev, Izd-vo AN USSR, 1962, 404-407

TEXT: The author describes an approximate method for a system of zero Gauss curvature, having a plane of symmetry and subject to bending in a plane normal to that of symmetry. He uses the new static hypothesis of coincidence of the planes of action of internal and external forces propcsed by L. P. Vinokurov. The calculation scheme is as follows: the middle surface is referred to a system of curvilinear coordinates; differential connection is established between the forces T_1 and S using the condition of equilibrium of a surface element; T_1 is assumed as a finite series,

Card 1/2

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Stressed state of ...

then S is found from the differential relation mentioned above, and algebraic equations are formulated for determining the constants. A circular conical shell with closed edge, loaded by a force P_y and a moment M_z, is taken as an example, the result being

$$T_1 = \frac{M_z + P_y(\alpha - \alpha_1)\cos\theta}{\pi\alpha^2 \sin^2\theta \cdot \cos\theta}\left[C_1 \sin\beta + C_2 \sin 2\beta\right] \qquad (10)$$

$$S = \frac{P_y\alpha_1 \cos\theta - M_z}{\pi\alpha^2 \sin\theta \cdot \cos\theta}\left[C_1 \cos\beta + \frac{C_2}{2}\cos 2\beta\right] + \frac{P\alpha_1 \cos\beta_0}{2\pi\alpha^2 \sin\theta} \qquad (11)$$

$$C_1 = 1; \quad C_2 = \frac{3}{2}\cos\beta_0$$

There are 3 figures.

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

L 22503-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/EWA(h) Pf-4/Peb EM
ACCESSION NR: AR4046884 S/0124/64/000/009/V008/V008

SOURCE: Ref. zh. Mekhanika, Abs. 9V49

AUTHOR: Shelomov, N. A.

TITLE: Basic stressed state of conical shells, as caused by torque applied along the generatrices

CITED SOURCE: Tr. Khar'kovsk. aviats. in-ta, vy*p. 22, 1963, 87-91

TOPIC TAGS: conical shell, stressed conical shell, shell loading finite resolution technique

TRANSLATION: The author considers a zero-spin stressed state of a conical shell, when a force N is applied along one of its generatrices. The normal meridional stress resulting in the shell is written in the form of a finite resolution, while shear is expressed through this resolution by reference to the balanced state

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

L 22503-65
ACCESSION NR: AR4046884

equation. Some assumptions are introduced and the author arrives at ratios determining the terms of the resolution. A numerical example is presented.
I. I. Trapezin

SUB CODE: AS ENCL: 00

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

ACCESSION NR: AP4040972 S/0147/64/000/002/0057/0067

AUTHOR: Shelomov, N. A.

TITLE: Design of closed cylindrical and slightly conical shells of arbitrary cross section

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 2, 1964, 57-67

TOPIC TAGS: shell, cylindrical shell, conical shell, arbitrary cross section shell, stress distribution, state of stress, stress computation algorithm

ABSTRACT: The stress distribution in cylindrical and slightly conical constructionally orthotropic "semimembrane" shells under an arbitrary surface loading is analyzed by the method of forces using Castigliano's variational principle, and assuming: 1) the validity of the Kirchhoff-Love hypothesis on preservation of normals, 2) a given expression for specific energy of shell deformation, and 3) resistance to moments only along the circumference. The state of stress of the shell is treated as the sum of a basic (equilibrium) and a supplementary

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ACCESSION NR: AP4040972

(self-balanced) state. The first can be determined by previously developed methods. The analysis of the self-balanced stresses is facilitated by introduction of an even, self-conjugate differential operator which provides a denumerable set of eigenvalues with a corresponding complete orthogonal system of chains of eigenfunctions. An algorithm for computing the eigenvalues and eigenfunctions of the operator by a method of successive approximations is given, and a method of applying this algorithm to stress analysis of arbitrary-cross-section cylindrical and slightly conical shells by adapting the previously obtained solutions for circular cylindrical shells is discussed. A block diagram is presented for a convenient process of calculating (with a prescribed accuracy on an electronic computer) the stress distribution in "semimembrane" shells the cross section of which can be given in tabular form. Orig. art. has: 3 figures and 36 formulas.

ASSOCIATION: none

Card 2/ 3

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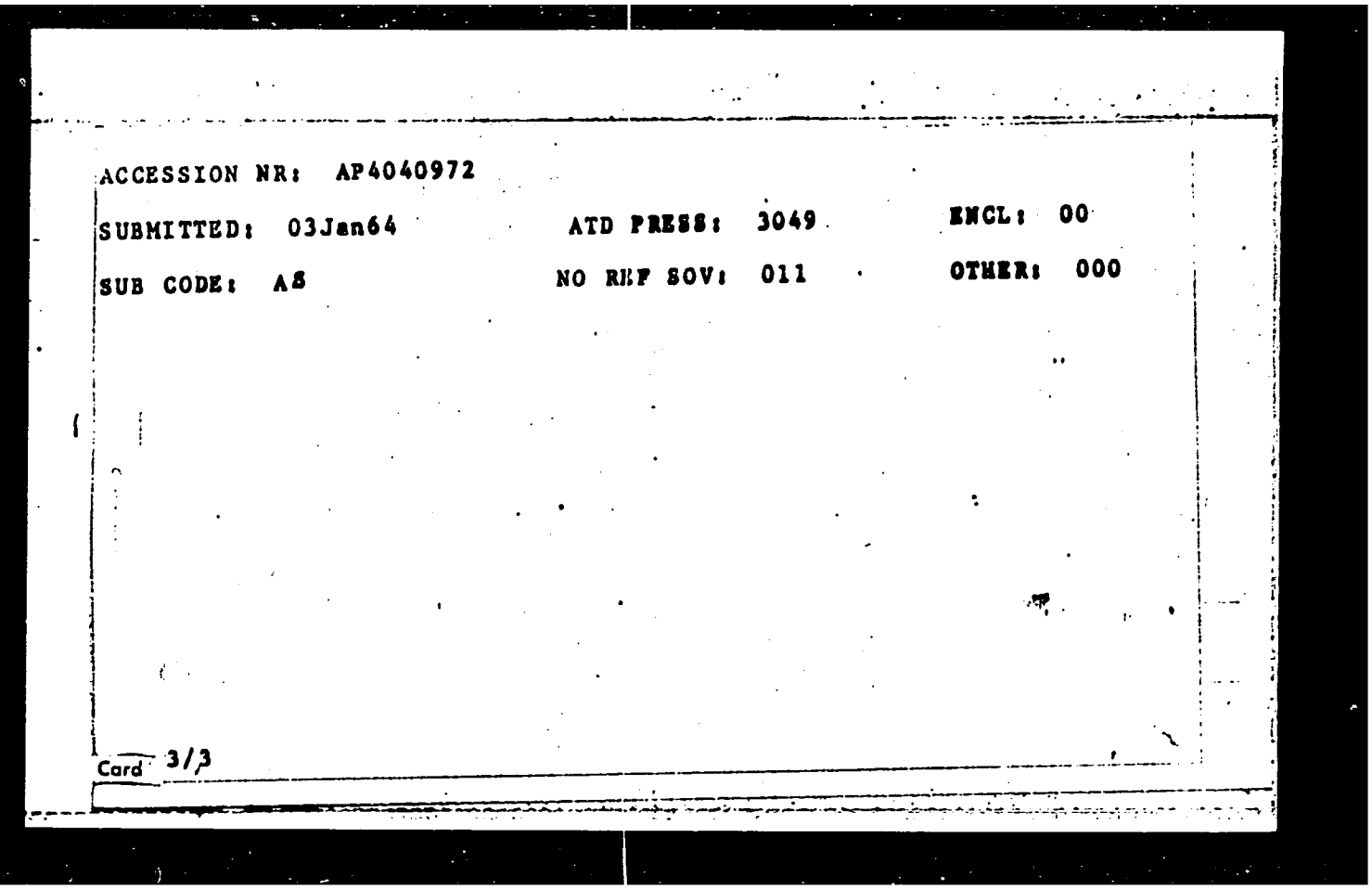

ACCESSION NR: AP4040972

SUBMITTED: 03Jan64 ATD PRESS: 3049 ENCL: 00

SUB CODE: AS NO REF SOV: 011 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOV, N.A.

Stressed state of a thin-walled beam in the area of the cut-out or imperfect joint. Izv.vys.ucheb.zav.; av.tekh. 5 no.3:122-130 '62. (MIRA 15:9)
(Beams and girders)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

L 27061-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(k)/EWA(h)/ETC(m)-6 IJP(c) WW/EM

ACC NR: AP6006439 SOURCE CODE: UR/0420/65/000/003/0059/0071

AUTHOR: Shelomov, N. A.

ORG: none

TITLE: Calculation of the eigenfunctions of semi-momentless cylindircal shells with an electronic digital computer

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 3, 1965, 59-71

TOPIC TAGS: cylindric shell structure, [redacted], shear strength, shell structure, algorithm, computer [redacted], eigenvalue, Green function, electronic computer, digital computer

ABSTRACT: The purpose of this study was to facilitate design of cylindrical shells by means of the semi-momentless theory with allowance for shear deformation. The problem reduces to determining a suitable algorithm for computer solution of the differential equation for the stress function under suitable boundary conditions. It is shown that if certain conditions are satisfied, the problem can be solved by the method of separation of variables. The conditions reduce to certain limitations on the variation of the rigidity of the shell and its supports, and to the fact that the sought eigenfunctions must coincide with the eigenfunctions of shells with absolutely rigid cross-section contour. Physical structures in which such conditions are satisfied are briefly discussed. The algorithm is based on a successive approximation method with use of Green's functions. The subprogram for determining the Green's function is also described. Several examples of generalized Green's func-

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ACC NR: AP6006439

tions for certain shell structures are also presented. Results of computer calculations with the Ural-2 computer are given for a cylindrical shell, a rectangular shell, and for a wing-type (RAF-34). Orig. art. has: 48 formulas and 3 tables.

SUB CODE: 20, 12, 09/ ORIG REF: 006/ DATE SUBM: 00

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

S/137/59/000/04/020/020
E031/E415

AUTHOR: Zolotukhin, V.K.

TITLE: The Scientific-Technical Conference at Kharkhov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 161-165 (USSR)

ABSTRACT: In May 1959, the 16th Conference of Professorial and Teaching Staff took place.
Strength of Aircraft Section.
"On the Theory of Bending of Thin-Walled Columns" by Docent, Candidate of Technical Sciences L.A. Kolesnikov;
"The Simulation of Static Experiments on Thin-walled Structures" by Candidate of Technical Sciences L.A. Kolesnikov and Senior Instructor V.K. Zolotukhin;
"The Bending of Beams Freeing an Opening" by Candidate of Technical Sciences L.A. Kolesnikov;
"The Influence of the Rigidity of Ribs and Beams on their Bending" by Assistant N.A. Sheremov; "The Calculation of the Bending of Rectangular Plates by the Discrete Method" by Assistant L.I. Shkurinskiy;
"The Calculation of Cylindrical Shells by the Method of Discrete Variables" by Aspirant N.A. Kurnosov.
Engine Construction Technology Section.
"The Choice of a Scheme for a Hydraulic Servo-System for the Automation of Welding Processes" by Assistant V.V. Bolotskiy; "An Investigation of the Process of Polishing by an Abrasive Belt" by Senior Instructor, Candidate of Technical Sciences V.N. Vereshchagin; "The Investigation of the Optimum Geometry of Cutting Tools" by Docent, Candidate of Technical Sciences V.P. Kosharnovskiy; "The Spreading of the Experience of Innovators and the Classification of Organizational-Technical Measures in Machine Construction" by Senior Instructor M.M. Afanas'yev; "Features of Measurable Abrasion of a Cutting Tool in Fine Sharpening" by Assistant V.N. Malikov; "An Investigation of the Process of Compression at High Velocities of Deformation" by Docent, Candidate of Technical Sciences A.K. Hayes; "The Standardization of Vibration Effects on the Human Organism in Aircraft Production" by Senior Instructor V.P. Ivanov.
Theory and Construction of Aircraft Engines and Propellor-Driven Machines Section. "The Investigation of the Flow Between the Inlet and Outlet Valves of a Turbine" by Instructor, Candidate of Technical Sciences V.N. Yershov; "The Variation in the Stage Parameters of an Axial Compressor in Accordance with the Size of the Radial Clearance" by Assistant A.A. Ivanitin; "On the Problem of Non-Stationary Heat Transfer" by Assistant S.D. Frolov; "The Influence of an Electric Field on the Phase of a Burner" by Senior Engineer P.P. Kostenko; "Calculation of the Temperature Compensation of Capacitance Pressure Pick-Ups" by Assistant L.Ya. Astaf'yev.
Aerohydrodynamics Section. "Ideal Inviscid Flow Round a Body" by Assistant V.I. Kholyavko; "The Control of the Boundary Layer of a Wing by Perforation of the Leading Edge" by Assistant Ye.P. Vyshnov; "The Gas-Hydraulic Analogy and its Application" by Senior Instructor O.A. Nechitaylov; "The Aerodynamic Investigation of [illegible] for Small Reynolds Numbers" by Engineer [illegible]

Card 5/11

Card 6/11

Card 7/11

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[illegible], [illegible]

[illegible], [illegible] "[illegible] people with resected stomach ulcers and gastro-entero-anastomosis lived [illegible] years of war," Trudy [illegible] Khirurg. Kliniki (Sverdl. [illegible] in-t), Vol. IV, 194[illegible], p. [illegible]-[illegible]0

SO: [illegible], [illegible] 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 19[illegible])

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

KLIMOV, K.M., professor, laureat Stalinskoy premii; SMIRNOV,Ye. professor; KIRILLOV, B.K., professor, FAYVISHENKO, E.L., professor, MUKHIN, M.V. professor; BAL', professor, NORENBERG-CHARKVIANI, A.Ye., doktor meditsinskikh nauk; SAKHAROV, M.I., doktor meditisnkikh nauk; MAKAROV, M.P., dotsent; BUTIKOVA, N.I., dotsent; SHELOMOVA, T.P., kandidat meditsinskikh nauk; RAKITINA, L.N., kandidat meditsinskikh nauk; KAMPEL'MAKHER, Ya.A., kandidat meditsinskikh nauk.

Forty years of Professor A.T.Lidskii's scientific, medical and pedagogical activities. Khirurgiia no.6:82-83 Je '55 (MLRA 8:10)
(LIDSKII, ARKADII TIMOFEEVICH)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

LIDSKIY, A.T., prof. (Sverdlovsk, Bankovskiy per., d.8, kv.31); SHELOMOVA, T.P., kand.med.nauk; SHULUTKO, M.L., kand.med.nauk

Some problems in lung surgery. Vest.khir. 79 no. 9:110-120 S '57. (MIRA 10:11)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. A.T.Lidskiy) Sverdlovskogo meditsinskogo instituta i khirurgicheskogo otdeleniya Sverdlovskogo gortubdispansera.
(LUNGS, surg.
review)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOMOVA, T.P., dotsent

Experience in the surgical treatment of diseases of the lungs.
Khirurgiia 36 no.12:104-109 '60. (MIRA 14:1)

1. Iz kliniki gospital'noy khirurgii (zav. - chlen-korrespondent AMN SSSR zasluzhenny deyatel' nauki prof. A.T. Lidskiy) Sverdlovskogo meditsinskogo instituta.
(LUNGS--SURGERY)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

NAUMOV, Vasiliy Mikhaylovich; PROTANSKIY, V.V., retsenzent; SHELONIN, A.S., retsenzent; KOROVIN, V.N., red.; SVETLAYEVA, A.S., red. izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Forest exploitation] Lesoekspluatatsiia. 2. dop. i perer. izd. Moskva, Goslesbumizdat, 1962. 410 p. (MIRA 15:7)
(Lumbering)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELONIN, V.; TROFIMOV, E.

Antenna for twelve channels. Radio no.8:44-46 Ag '60.
(MIRA 13:9)

(Television--Antennas)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELONIN, V.; GROMOV, B.

Wide-band dipole antenna. Radio no.2:33-34 F '61. (MIRA 14:9)
(Antennas (Electronics))

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

L 4422-66 EWT(1)/T/FCS(k) WR

ACC NR: AP5025692 SOURCE CODE: UR/0286/65/000/018/0040/0040

INVENTOR: Knyazev, A. S.; Shelonin, I. S.

ORG: none

TITLE: Wide-band dummy dipole antenna. Class 21, No. 174676

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 40

TOPIC TAGS: dipole antenna, antenna configuration

ABSTRACT: The proposed wide-band dummy dipole antenna consists of a section of coaxial line with a helical inner conductor made of a high-resistance alloy. The external conductor is a screen provided with apertures. This configuration increases the level of the dissipated power and provides for accurate reproduction of dipole antenna input impedance within a wide frequency range. Orig. art. has: 1 figure. [DW]

SUB CODE: EC/ SUBM DATE: 04Dec62/ ORIG REF: 000/ OTH REF: 000/ ATD PRESS: 4126

Card 1/1 UDC: 621.396 674.3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

ANTIPOV, Nikolay Ivanovich, kand. biol. nauk, dots.; SHELONINA, I.M., kand. biol. nauk, otv. za vypusk; CHUVAKIN, A.I., red.; AZOVKIN, N.G., tekhn. red.

[How plants feed and grow]Kak pitaiutsia i rastut rasteniia. Riazan', Riazanskoe knizhnoe izd-vo, 1962. 166 p. (MIRA 15:12)

1. Ryazanskiy pedagogicheskiy institut (for Antipov).
(Plants—Nutrition) (Growth (Plants))

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELCHILA, I. M., Cand Biol Sci -- (diss) "Development of mycorrhiza in corn under the conditions of the Voronezh oblast in connection with some procedures in agrotechnics." Voronezh, 1960. 19 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Voronezh State Univ); 150 copies; price not given; (KL, 28-60, 160)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELONINA, P.N., fel'dsher

Our experience in sanitation work. Fel'd i akush. 28 no.11:
34-37 N'63 (MIRA 16:12)

1. Iz Lyubonichskoy sel'skoy bol'nitsy Mogilevskoy oblasti.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

SHELOPAYEV, G.I., starshiy propodavatel'

Hydrothermal conditions and the resistance of the roadbed of automobile roads in the southern part of Krasnoyarsk Territory. Trudy STI 37:24-33 '64.

Drainage of water form the foundations of road pavements and the calculations for the draining structures for automobile roads in the southern part of Krasnoyarsk Territory. Trudy STI 37:34-40 (MIRA 18:5)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

[redacted], Cand. agricult. sci.

Determining the soil water value of the results of the deformation of soil soils. Trudy ST 3,312-21 '52.

Improving the stability and water use standards of loamy soils by the addition of furfurole[illegible] wastes. Ibid.332-37

(MIRA 28:6)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

GORBUNOV, M.A.; KOSHKIN, N.I.; NOZDREV, V.F.; SHELOPUT, D.V.

Use of ultra-acoustic methods in studying organic substances in the liquid - polycrystal transition region. Ukr. fiz. zhur. 7 no.8:898-905 S '62. (MIRA 16:1)

1. Moskovskiy oblastnoy pedagogicheskiy institut im. N.K.Krupskoy.
(Absorption of sound) (Organic matter)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

KOSHKIN, N.I.; SHELOPUT, D.V.

Accoustic and dielectric losses in the melting region of benzene. Prim.ul'traakust.k issl.veshch. no.16:91-95 '62.
(MIRA 16:4)
(Benzene--Acoustic properties) (Dielectric loss)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

KOSHKIN, N.I.; SHELOPUT, D.V.

Ultrasound absorption in the melting region of polycrystalline paraffin. Prim.ul'traakust.k issl.veshch. no.16:97-99 '62.
(MIRA 16:4)
(Paraffins--Acoustic properties) (Ultrasonic waves)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

L 32992-66 EWT(l)/EWT(m)/EWP(j)/T/EWP(k) IJP(c) WW/RM
ACC NR: AR6010274 SOURCE CODE: UR/0058/65/000/011/H003/H003

AUTHOR: Sheloput, D. V.; Koshkin, N. I.

TITLE: Influence of polycrystalline structure on acoustic absorption in the region of mounting of molecular polycrystals

SOURCE: Ref. zh. Fizika, Abs. 11ZH436

REF SOURCE: Sb. Primeneniye ul'traakust. k issled. veshchestva. Vyp. 20. M., 1964, 55-59

TOPIC TAGS: ultrasound absorption, melting point, organic crystal, grain structure, single crystal growing, relaxation process, resonance absorption, POLYCRYSTAL, BENZENE

ABSTRACT: An experimental investigation was made of the absorption of ultrasound near the melting point of different polycrystalline structures of benzene and paraffin. Data were obtained on the frequency dependence of α/f in polycrystalline benzene for average grain dimensions $\bar{D}$ = 0.02, 0.03, 0.04, and 0.07 mm at +4C. It is established that the dimension of the average diameter of the grain determines the position of the maximum of α/f, its width, and its absolute value. A study was made of the influence of the intergrain boundaries on the absorption in the region of melting of benzene single crystals. The process of growing of single crystals of benzene in a refrigerator and its processing by fusion is described in detail. The size of the grain has different effects on the absorption in benzene and in paraffin: with increasing grain, the maximum of α/f shifts toward the higher frequencies in benzene,

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

L 10772-66 EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/EWP(l)/EWA(h)
ACC NR: AP5026217 EWA(c)/ETC(m) IJP(c) SOURCE CODE: UR/0381/65/000/004/0060/0065
JD/WW

AUTHOR: Baranovskiy, S. N.; Sheloput, D. V.; Berezikov, D. D.

ORG: Novosibirsk Electrical Engineering Institute (Novosibirskiy elektrotekhnicheskiy institut)

TITLE: Study of the inhomogeneity of the crystal structure of Ge and Si from the speed of ultrasound in different portions of the crystal

SOURCE: Defektoskopiya, no. 4, 1965, 60-65

TOPIC TAGS: ultrasonic inspection, semiconductor crystal, crystal structure, crystal defect

ABSTRACT: Experimental data from measurements of the relative variations in the velocity of ultrasound in different parts of single crystals of germanium and silicon and the elastic stresses in them are utilized to study the distribution of structural defects. The procedure for observing small relative variations in the velocity is based on the probing of different parts of the crystal by a narrow ultrasonic beam. Such ultrasonic methods of crystal study are derived from the dependence of the modulus of elasticity and internal friction on the real crystal structure. The impulse ultrasonic apparatus used in the experiments consists of the following: modulator and synchronizer (video-impulse generator G5-15); high frequency signal

UDC: 620.179.16 : 620.18

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3

generator (generator of standard signals G4-7A); piezoquartz converter-transducers (between which the specimen is placed, in distilled water); amplifier (series connected of type UZ-3); oscillograph (impulse type S1-31). The apparatus, described in detail in the report, was used to conduct measurements on three samples of single crystal silicon and two of germanium, with an ultrasonic beam of 2.5 millimeter diameter along different crystallographic directions (the three mutually perpendicular faces of the rectangular parallelopiped crystals coincided with the planes (111), (110), (211); crystal sizes 20 to 50 millimeters along the long edge). Frequencies used were 21 to 104 megahertz at temperatures from 16 to 80°C. The silicon (*n*-type, doped with phosphorus) had specific resistivities from 10 to 45 ohm-cm; the germanium (*n*-type, doped with antimony), 26 to 40 ohm-cm. The density of the dislocations varied from 10^2 to 10^4 cm^{-2}. The elastic stresses were studied by means of the polariscope PIK-1 at the Institute of Crystallography, Academy of Sciences SSSR. The greatest stresses were found to occur in those portions adjoining the angles (vertices, edges). It is concluded that a definite correlation exists between the velocity of propagation of ultrasound and the internal stresses in a given region or a crystal. Differences in the velocities of ultrasound along different directions amount to a maximum of 10 millipercent, which is sufficient to permit the observation of structural inhomogeneities in germanium and silicon single crystals. It is recommended that future investigations study crystals with known defects and their distribution. Orig. art. has: 4 figures, 3 tables.

SUB CODE: 14,20/ SUBM DATE: 26May65/ ORIG REF: 003/ OTH REF: 001

ultrasonic inspection

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549020007-3"

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EWT(1)/EWT(m)/T IJP(c) GG/RM/WW

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TITLE: Acoustic properties of molecular crystals near melting

SOURCE: Ref zh. Fizika, Abs. 3Zh505

REF SOURCE: Tr. 1-y Mezhvuz. nauchn. konferentsii po primeneniyu molekul. akust. k issled. veshchestva i v nar. kh-ve. Tashkent, 1964, 67-75

TOPIC TAGS: molecular crystal, acoustic property, melting, ultrasound absorption, absorption coefficient, temperature dependence, frequency characteristic, crystal dislocation phenomenon

ABSTRACT: The authors investigated the temperature and frequency dependences of the coefficient of absorption of ultrasound and the dependence of absorption on the linear dimensions of the grains of polycrystalline structures in the melting region. The temperature dependence was investigated in benzene, paraxylol, benzyl alcohol, naphthalene, cyclohexane, carbon tetrachloride, and praffin. It turns out that the coefficient of absorption at the maximum is 2 - 3 orders of magnitude higher than in the liquid phase near the melting point. The shift of the maximum from the melting point changes from substance to substance. The frequency dependence of the absorption was investigated only in benzene and in paraffin. Analyzing the results of their measurements, the authors arrive at the conclusion that the absorption of ultrasound in molecular crystals is due essentially to hysteresis losses (the frequency-independent component of the absorption) and to resonance losses (in benzene) or to

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relaxation (in paraffin). From the point of view of dislocation theory, the hysteresis loss arises when the dislocation segments break away from their anchor points, and the resonant lossos occur under induced oscillations of the dislocations. V. Gordeyev. [Translation of abstract]

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