GUMENSKIY, Boris Mikhaylivich, professor, doktor geologo-mineralogicheskikh nauk; RAK,S.M., kandidat tekhnicheskikh nauk, redaktor; KHITROV,P.A., tekhnicheskiy redaktor

[Principles of geology for railroad builders] Osnovy geologii dlia stroitelei zheleznykh dorog. Moskva, Gos.transp. zheldor. izd-vo, 1955. 260 p. (MLRA 9:3)
(Geology) (Railroads--Construction)

15-57-10-13471

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, p 1 (USSR)

AUTHORS: Gumenskiy, B. M., Komarov, N. S., Voronin, M. I.

TITLE: History of Geological Investigations Related to the Construction of Roads in Russia from 1817 to 1870. (K istorii geologicheskikh issledovaniy dlya stroitel'stva dorog v Rossii v 1817-1870 gg)

PERIODICAL: Tr. In-ta istorii yestestvozn. i tekhn. AN SSSR, 1956, Nr 7, pp 3-22

ABSTRACT: The origin of that branch of Russian engineering geology which serves in the construction of roads can be traced to the very beginning of the nineteenth century. First efforts of the engineering-geological nature in this realm were made by the builders of highways and railroads -- the students and professors of the St. Petersburg Institute of Means of Communication of the

Card 1/3

History of Geological Investigations (Cont.)

Corps of Engineers, established in 1810. Even before that time a large amount of experience had been collected in dealing with the soils in various phases of construction work. Earliest theoretical engineering-geological works of a general nature and pertaining to road construction were presented in the textbooks of this Institute (starting with 1818). Intensification of this activity can be observed between 1817 and 1834 and was related to the construction of the St. Petersburg-Moscow highway. Such intensification recurred at the end of the 1820's in relation to the construction of other Russian highways. The author notes the part played in these investigation by M. S. Volkov, professor of the Institute of Means of Communication at the Corps of Engineers, the author of "A Course of Constructions" and of "Notes on Soils Investigations to be Conducted in Structural Work" (1836). During the surveys along the course of the St. Petersburg-Moscow highway, excavation, drilling and construction of engineering-geological cross sections were broadly applied. With the acceleration of highway building in Russia, more

History of Geological Investigations (Cont.) 15-57-10-13471

and more attention was being paid to geology and mineralogy in the curriculum of the Institute within the program of its "Construction Course" (particularly after the 1830's). Theoretical knowledge of construction and engineering geology was further developed during the building of the first main railroads in Russia. Construction of the St. Petersburg-Moscow railroad (1842-1851) represented a fine source of learning for the Russian engineers of Means of Communication. During the explorations along this right-of-way a contract was established between the engineers of Means of Communications and the geologists and mining engineers (Miller, Pander, Samoylov). In 1843 a field course in geology was introduced at the Institute for the engineers of Means of Communications. In 1862 N. I. Koksharov was invited to lecture in mineralogy and geology at this Institute; starting with 1884, the course of geology was taught by I. V. Mushketov. Toward the end of the nineteenth century engineering geology became recognized as an altogether necessary part of the qualifications for construction engineering.

Card 3/3

D. I. Gordeyev

GUMENSKIY B.M.

GUMENSKIY, B.M., doktor geol.-mineral. nauk, prof.

"Deformations of clayey soils in antilandslide workings." B.I. Nechaev. Reviewed by B.M. Gumenskii. Vest. TSNII MPS 16 no.7: 62-63 O '57. (MLRA 10:11)

1. Leningradskiy institut inzhenerov zheleznodorozhnogo transporta imeni akademika V.N. Obraztsova.
(Soil mechanics)
(Nechaev, B.I.)

GUMENSKIY, Boris Mikhaylovich, prof., doktor geologo-mineral.nauk; KOMAROV, Nikolay Stepanovich, dotsent, kand.geologo-mineral. nauk; POPOV, V.V., prof., doktor geologo-mineralog.nauk, red.; SHNEYEROV, S.A., red.izd-va; SHLIKHT, A.A., tekhn.red.

[Vibrational drilling of soils] Vibroburenie gruntov. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1959. 129 p. (MIRA 12:12)
(Boring)

GUMENSKIY, B.M.

Geology at Leningrad Institute of Railroad Engineering.
Izv. vys. ucheb. zav.; geol. i razv. 2 no.1:116-121 Ja '59.
(MIRA 12:10)
(Geology) (Railroad engineering)

GUMENSKIY, B.M. (g.Leningrad)

Taking into account organic materials in fills in calculating the settlement of structures. Osn., fund.i mekh.grun. no.5:23-25 '59. (MIRA 12:12)
(Foundations) (Soil mechanics)

GUMENSKIY, B.M., prof., doktor geol.mineral.nauk

Further trends in the investigation of clay soil compaction.
Transp.stroi. 9 no.3:47-49 Mr '59. (MIRA 12:4)
(Railroads--Earthwork) (Soil stabilization) (Clay)

[illegible] B.I., [illegible]

Consistency of clayey soils according to the theory of [illegible] as physically bound soil [illegible]. Sov. LITERT no.15":125-[illegible]. (MIL [illegible])

(Clay) (Soil moisture)

[illegible], R.[illegible], [illegible] vol.- [illegible], [illegible], [illegible], [illegible] vol.- [illegible], [illegible].

Geologic [illegible] of landslide areas [illegible] contribution of basic stability in surveying; and American railway [illegible]. Gor. ZHIZHN' no. 167:[illegible]. (MIRA 11:11)

(Landslides) (Geology--Maps) (Railroads--Surveying)

GUMENSKIY, Boris Mikhaylovich, prof.; NOVOZHILOV, Gennadiy Fedorovich, assistent; KOVRIZHNYKH, L.P., red.; DONSKAYA, G.D., tekhn. red.

[Thixotropy of soil and its calculation in the construction of roads and road bridges] Tiksotropiia gruntov i ee uchet pri stroitel'stve avtomobil'nykh dorog i mostov. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 106 p. (MIRA 15:2)
(Soil mechanics--Research) (Road construction)
(Bridge construction)

GUMENSKIY, B.M. (Leningrad); NOVOZHILOV, G.F. (Leningrad)

Increase in the bearing capacity of piles during the "resting" process. Osn., fund. i mekh. grun. 3 no.4:16-17 '61. (MIRA 14:8)
(Piling (Civil engineering))

GUMENSKIY, B.M., doktor geologo-mineralogicheskikh nauk, prof.

History of the geological education of railway engineers. Sbor. trud. LIIZHT no.196:3-20 '62. (MIRA 16:9)

GUMENSKIY, B.M., doktor geologo-mineralogicheskikh nauk,prof.

Coating piles with thixotropic pastes as a method of lowering the cost and increasing the rate of pile sinking. Gidr.stroi. 32 no.9:21-23 S '62. (MIRA 16:2)
(Piling (Civil engineering))

GUMENSKIY, B.M.; KOMAROV, N.S.

Training students of construction specialities in railroad institutes from the viewpoint of engineering engineering geology. Izv.vys.ucheb.zav.; geol. i razv. 6 no.10:142-148 O '63. (MIRA 18:4)

1. Leningradskiy institut inzhenerov zheleznodorozhnogo transporta.

GUMENSKIY, B.M., prof.

Accounting for the thixotropic stabilization of clayey soils.
Avt.dor. 26 no.10:20, 24, 30 O '63. (MIRA 16:11)

GUMENSKIY, Boris Mikhaylovich, doktor geol.-miner. nauk, prof.; KONAROV, N.S., kand. geol.-miner. nauk, dots., nauchn. red.

[Principles of the physical chemistry of clay soils and their utilization in construction] Osnovy fiziko-khimii glinistykh gruntov i ikh ispol'zovanie v stroitel'stve. Leningrad, Stroiizdat, 1965. 254 p. (MIRA 18:7)

GUMENSKIY, M.

1526. On the water separation of clay of different mineral composition in electric fields.
M. GUMENSKII (Colloid J., Voronezh, No. 15, p.178, 1953).

GUMENYUK, A.

Saving in large and small matters. Mashinostroitel' no.12:32 D '60. (MIRA 13:12)

(Nonferrous metals)

GUMENYUK, A.

Hydraulic milling cutter for removing scale from pipes. (MIRA 14:4)
Mashinostroitel' no. 4:34 Ap '61.
(Boilers--Maintance and repair)

GUMENYUK, A.D.

Selection of early ripening sunflower. Masl.-zhir.prom. 26 no.7: 10-12 Jl '60. (MIRA 13:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut rasteniyevodstva, selektsii i genetiki.
(Sunflower)

IVANCHENKO, O.N., inzh.; PETRAKOVSKAYA, M.I., inzh.; GUMENYUK, A.D., inzh.

Heat treatment of fastenings. Mashinostroenie no.4:72-73 Jl-Ag '64. (MIRA 17:10)

ACC NR: AP6037013 (A,N) SOURCE CODE: UR/0181/66/008/011/3424/3426

AUTHOR: Gorban', I. S.; Gumenyuk, A. F.; Suleymanov, Yu. M.

ORG: Kiev State University im. T. G. Shevchenko (kiyevskiy gosudarstvennyy universitet)

TITLE: Energy and kinetic parameters of impurity nitrogen in silicon carbide crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3424-3426

TOPIC TAGS: silicon carbide, crystal impurity, nitrogen, impurity level, electron capture, capture cross section, thermoluminescence, luminescence spectrum, semiconductor band structure

ABSTRACT: This is a continuation of earlier investigations of the line spectrum of luminescent crystals α-SiC (6N) (FTT v. 7, 3694, 1965) where it was established that nitrogen forms three donor levels corresponding to three nonequivalent positions of the nitrogen atoms in the lattice. The present paper is devoted to an investigation of the energy and kinetic parameters of these levels, and to kinetic parameters such as cross sections for the capture of electrons by these levels. The required relations are determined from the variation of the thermoluminescence of these crystals as the nitrogen content is varied, and comparison of the changes in the thermoluminescence with the changes in the luminescence spectrum, which was shown in the earlier investigation to change from a band spectrum into a line spectrum with de-

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ACC NR: AP6037013

creasing nitrogen concentration. Low temperature thermoluminescence was investigated for three crystals, one containing nitrogen with a concentration (10^{18} cm^{-3}) for which the luminescence has a band spectrum, and two containing a lower concentration (10^{17} cm^{-3}), with a line spectrum. At low nitrogen concentration, the low-temperature thermoluminescence curves consisted of three bands, which can be related to thermal release of electrons from the different types of centers. The individual elementary thermoluminescence bands were spearated by special heat treatment. This has made it possible to have the thermoluminescence intensity variation governed by only one of the elementary bands. This yielded for the distances of the three types of nitrogen levels to the bottom of the conduction band values 0.18, 0.21, and 0.24 ev, which coincided with those obtained earlier for the energy distances between the exciton width of the forbidden band and the spectral positions of the front lines of the spectrum. The corresponding values obtained for the cross section for the capture of electrons from the conduction band by the nitrogen centers are 5×10^{-19}, 2×10^{-19}, and 2×10^{-19} cm^2. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 04Jun66/ ORIG REF: 003/ OTH REF: 004

Card 2/2

GUMENYUK, A.I.

Soil types in the Western Ukrainian Opolye. Pochvovedienie no.1: 35-45 Ja '65. (MIRA 18:7)

1. Institut zemledeliya i zhivotnovodstva zapadnykh rayonov UkrSSR, L'vov.

GUMENYUK, A. G. C/1964 1964

PHOTOCHEMICAL

DECEASED

GUMENYUK, A. S., V'YUGOV, P. N., and AMONENKO, V. M.

"Investigation of thermal expansion of tungsten, molybdenum, tantalum, niobium, and zirconium at high temperatures"

Seminar on production methods, physical properties, and electron structure of refractory metals, compounds, and alloys, organized by the Institute of Powder Metallurgy and Special Alloys AS Ukr SSR, Kiev, 25-29 April 1963. (Teplovizika vysokikh temperatur, No. 1, 1963, p. 156)

SHALAY, K.M., podpolkovnik meditsinskoy sluzhby; GUMENYUK, A.S., podpolkovnik meditsinskoy sluzhby; SPEKTOR, M.N., podpolkovnik meditsinskoy sluzhby

Remarks on Professor D.E.Rozenblium's article on the "Main problems in the field of acceleration physiology." Voen.-med. zhur. no.5: 91 My '56. (MLRA 9:9)

(AVIATION MEDICINE)

NOVIKOV, I.T.; PAVLENKO, A.S.; SMIRNOV, M.S.; CHIZHOV, D.G.; LAVRENENKO, K.D.; NEKRASOV, A.M.; NOSOV, R.P.; TARASOV, N.Ya.; ZHIMERIN, D.G. UGORETS, I.I.; DMITRIYEV, I.I.; DROBYSHEV, A.I.; YERMAKOV, V.S.; SAPOZHNIKOV, F.V.; BOROVOY, A.A.; BANNIK, V.P.; DASKOVSKIY, Ya.M.; ROGOVIN, N.A.; PETROV, A.N.; MEL'NIKOV, B.V.; LATYSH, D.I.; KONIN, F.P.; DYDYKIN, P.Ye.; BONDAREV, I.I.; GUMENYUK, D.L.; POBEGAYLO, K.M.

Ol'ga Sergeevna Kalashnikova; obituary. Elek.sta. 30 no.2:95 F '59. (MIRA 12:3)
(Kalashnikova, Ol'ga Sergeevna, 1914)

GUMENYUK, G.N.; NALDZHAN, V.V.; NOSKOV, Yu.I.; ABEYANOV, V.A.

Determining the strength of rocks using irregularly shaped samples. Nauch. trudy KNIUI no.14:165-168 '64.

Properties of coal and enclosing rock of some Karaganda Basin seams. Ibid.:176-183 (MIRA 18:4)

STEL'MAKH, N.I., gornyy tekhnik; GUMENYUK, G.Ye., gornyy tekhnik;
TIKHENKO, L.G., gornyy inzh.

Rapid development of blocks. Met. i gornorud. prom. no.1:
75-77 Ja-F '62. (MIRA 16:6)

(Mining engineering)

CA GUMENYUK, I. Gr.

11 7

Dept. Animal Physiol.

Effect of vegetative nervous system on the recoil reflex. I. Gr. Gumenyuk (Dnepropetrovsk State Univ.). *Fiziol. Zhur. S.S.S.R.* 36, 552-7(1950).—Deposition of a NaCl crystal on the thalamic region of the brain causes the disappearance of the recoil reflex, caused by Faradic stimulation of the central end of sciatic nerve. The phenomenon is reversible. Ergotoxin in 1:1000 concn. does not affect the reflex but it removes the blocking effect of the thalamic region on this reflex. The NaCl effect is manifested through the sympathetic nervous system. G. M. Kosolapoff

1951

USSR / Farm Animals. Cattle. Q

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40432.

Author : Gumenyuk I. G., Sirotkina A., Vybornov M.
Inst : Not given.
Title : The Effect of the Warming of the Udders of Cows Upon the Fat Content in the Milk.

Orig Pub: Sb. tr. Penzensk. s.-kh. in-ta, 1956, vyp. 1, 237-247.

Abstract: Experiments were conducted on 4 cows of the Simmenthal breed at the Experimental Training Farm of the Penza Agricultural Institute. Water baths (5-6 liters) at a temperature of 35°, 45°, and 50°C for 4-5 min. before the 1st and 3rd milking were administered. The average amount of fat in the milk yield of three cows during initial milking increased by 0.1%-

Card 1/2

USSR / Farm Animals. Cattle.

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40432.

Abstract: -0.28%, and in complementary milking out, by 0.51%-4.25%. One cow exhibited a negative reaction to warming. The administration of the warm bath before the 3rd milking also produced a negative effect. The warming of the udder exerted a positive reflex influence on cows of the mobile type of higher nervous activity.

Card 2/2

COUNTRY : USSR
CATEGORY : Farm Animals. Q
Cattle.

ABS . JOUR. : RZhBiol., No. 6, 1959, No. 25829

AUTHOR : Gumenyuk, I. G.; Naumova, Ye. M.
INST. : Penza Institute of Agriculture.
TITLE : The Influence of Milking and Feeding Frequencies upon the Cows' Milk Production and Physiological Condition.
ORIG. PUB. : Sb. tr. Penzensk. s.-kh. in-ta, 1958, vyp. 2, 318-324
ABSTRACT : One group of cows was kept on a 4-interval daily regimen (control), and the other on a 2-interval feeding and milking regimen (experimental). Within the time span of the experiment (from 10 May to 5 August), the milk yields increased in 60 percent of the cows of the experimental group and decreased in 7 percent. There was no difference in pulse and respiration rates, Hb and erythrocyte contents. The bibliography consists of 11 titles. -- F. M. Kazantsev

CARD: 1/1

COUNTRY : USSR
CATEGORY : Farm Animals. Q
Cattle.

ABS . JOUR. : RZhBiol., No. 6, 1959, No. 25834

AUTHOR : Gumenyuk, I. G.; Vasina, S. P.
INST. : Penza Institute of Agriculture.
TITLE : The Effect of the Milking Machine's Working Rhythm upon Milk Flow.

ORIG. PUB. : Sb. tr. Penzensk. s.-kh. in-ta, 1958, vyp. 2, 325-339
ABSTRACT : Cows with characteristic external symptoms of an excitable unbalanced higher nervous activity type decreased their yields by 23 percent as compared to controls when the milking machine had a rhythm of 35 compressions per minute, by 27 percent when there were 110 compressions, but when 75 compressions were applied, the cows maintained high level yields. Cows of a well balanced type reacted analogously to the various rhythms, but adapted themselves to them

CARD: 1/3

GUMENYUK, L.I.

Arterial changes of the type of periarteritis nodosa in rats.
Arkh.pat. 21 no.11:78-82 '59. (MIRA 13:12)
(HYPERTENSION) (ARTERIES--DISEASES)

GUMENYUK, L.I.

Comparative studies on changes in the small arteries during various forms of experimental hypertension. Arkh. pat. 22 no. 11:68-72 '60. (MIRA 14:1)

(HYPERTENSION)

GUBENYUK, L. I., Cand. Med. Sci., — (diss) "Comparitive-morphological study of arteries during various forms of experimental hypertonia," Leningrad, 1961, 17 pp (Leningrad Scanitary Hygiene Medical Institute), 300 copies (KL-Supp 9-61, 189)

GUMENYUK, M.P. [Humeniuk, M.P.]

Bibliography of Academician F.A. Tutkovskii's geological and geographical investigations. Geol. zhur. 24 no.2:98-100 '64.
(MIRA 18:2)

BORUL'NIK, A.K.; GUMENYUK, N.A.

Special cutting-tool holders for lathes. Stan.i instr. 29 no.12: 36 D '58. (MIRA 11:12)

(Lathes--Attachments)

GUMENYUK, N.A.; SMIRNOV, N.I.

Use of G.K. D'iakonov's equation for the extraction from single drops. Zhur. prikl. khim. 38 no.4:890-895 Ap '65.
(MIRA 18:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

GUMENYUK, N.A.; SMIRNOV, N.I.

Application of G.K. Diakonov's equation to the extraction from a drop group. Zhur. prikl. khim. 38 no.5:1058-1063 My '65.
(MIRA 18:11)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

GUMENYUK, Nikolay Denisovich; ZOSIMOV, Ye.A., retsenzent; ORLOV, V.M., inzh., retsenzent; TSARENKO, A.P., inzh., red.; KHITROVA, N.A., tekhn. red.

[Work organization in ticket offices] Organizatsiia raboty biletnykh kass. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 67 p. (MIRA 14:10)

1. Zaveduyushchiy Byuro zakazov na vokzale stantsii Moskva-Pass.-Kurskaya (for Gumenyuk).
(Railroads—Tickets)

PAMFILOV, A.V.; GUMENYUK, N.N.

Chronium chloride hydrates. Zhur.ob.khim. 23 no.7:1065-1068 Jl '53.
(MLRA 6:7)
(Chronium chloride)

ABRAMOV, B.A.; GUMENYUK, N.U., inzh.; BALTER, A.L., kand.tekhn.nauk.

"Nap raising on woolen fabrics" by S. B. Salikhova. Reviewed by B.A. Abramov, N.U. Gumeniuk, A.L. Balter. Tekst.prom. 17 no.12:64-66 D '57. (MIRA 11:1)

1.Glavnyy inzhener Kupavinskoy fabriki (for Abramov)
(Woolen and worsted manufacture)
(Salikova, S.B.)

GUMENYUK, N.U.

Some work practices of scientific research laboratories. Tekst. prom. 25 no.3:81-82 Mr '65. (MIRA 18:5)

1. Nachal'nik nauchno-issledovatel'skoy laboratorii pri Kupavinskoy tonkosukonnoy fabrike.

GUMENYUK, P.P. [Humeniuk, P.P.], kand.istor.nauk, dotsent

Great power of the Soviet society. Nauka i zhyttia 10 no. 10:1-4 O '60. (MIRA 14:4)

(Russia)

Gumenyuk, T. D.

USSR/ Chemistry - Chemical technology

Card 1/1 Pub. 116 - 26/30

Authors : Karavayev, N. M.; Zykov, D. D.; Garber, Yu. N.; Gumenyuk, T. D.; and Sandul, T. V.

Title : Phase equilibriums of naphthalin with coal tar fractions

Periodical : Ukr. khim. zhur. 21/3, 410-415, June 1955

Abstract : The phase conversions of naphthalin with various coal tar fractions was investigated on a laboratory rectification column to determine the effect of low boiling components (heavy fractions) on the phase equilibrium curve. The fact that coal tar and oil form a polyazeotropic mixture was taken into consideration and the results are evaluated. One USSR reference (1955). Tables; graphs.

Institution : The I. V. Stalin Metallurgical Inst., Dnepropetrovsk and the Inst. of Chem. Machine Constr., Moscow

Submitted : December 24, 1953 and January 14, 1955

GUMENYUK, T. G.

K. Izucheniyu Gel'mintofauny Koshek, Sobak, Domovykh Krys i Myshey G. Chernovitsy, "Works on Helminthology," on the 75th Birthday of K. I. Shryabin, Izdat. Akad. Nauk. SSSR, Moskva, 1953, p. 184
Chair General Biology, Chernovits Medical Inst.

GUMENYUK, T.I.

Efficiency promoters of the "Rabochii metallist" Plant. Stroi. i dor. mashinostr 2 no.12:29 D '57. (MIRA 11:2)
(Excavating machinery)

Gumenyuk, I.S.

24(0); 5(4); 6(2) PHASE I BOOK EXPLOITATION SOV/2215

Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni D.I. Mendeleyeva

Referaty nauchno-issledovatel'skikh rabot; sbornik No. 2 (Scientific Research Abstracts; Collection of Articles, Nr 2) Moscow, Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

PURPOSE: These reports are intended for scientists, researchers, and engineers engaged in developing standards, measures, and gages for the various industries.

COVERAGE: The volume contains 128 reports on standards of measurement and control. The reports were prepared by scientists of institutes of the Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Commission on Standards, Measures, and Measuring Instruments under the USSR Council of Ministers). The participating institutes are: VNIIM - Vsesoyuznyy nauchno-issledovatel'skiy metrologii imeni D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleyev) in Leningrad; Sverdlovsk branch of this institute; VNIIK - Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of the Commission on Standards, Measures, and Measuring Instruments), created from MGIMIP - Moskovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Moscow State Institute of Measures and Measuring Instruments) October 1, 1955; VNIIFTRI - Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (All-Union Scientific Research Institute of Physicotechnical and Radio-engineering Measurements) in Moscow; KhGIMIP - Khar'kovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Khar'kov State Institute of Measures and Measuring Instruments); and NGIMIP - Novosibirskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Instruments). No personalities are mentioned. There are no references.

Tovchigrechko, S.S. (VNIIM). Studying Recurrent Errors of Micrometric Screws of Level Triers 45

Solov'yeva, L.A. (VNIIM). Studying the Curvature of the Tube of Levels 45

Bryzzhev, L.D., V.P. Lubentsov, S.M. Okhotina, and P.A. Stepan'on (KhGIMIP). Widening the Spectrum of Standard Frequencies Produced by the KhGIMIP Standard Frequency Unit to 10^{10} Cycles per Second 47

Smagin, A.G. (VNIIFTRI). Quartz Resonator With a Quality Factor of $12.5 \cdot 10^{6}$ 48

Grinenko, I.V., Ye.D. Novgorodov, N. Kh. Neparidze, T.S. Gumenyuk, Yu. M. Libin, and A.I. Samoylovich (KhGIMIP). Developing Quartz Elements of Oblique Cut 49

Bryzzhev, L.D., M.D. Sapel'nikov, V.N. Titov, F.F. Yestaf'yev, and V.I. Turenko (KhGIMIP). Developing and Studying Simple and Suitable Oscillators and Convertors of High Stability for Time and

Card 10/27

GUMENYUK, T. Ye.: Master Tech Sci (diss) -- "Investigation of ventilation by means of underground auxiliary section fans without bracing". Leningrad, 1958. 21 pp (Min Higher Educ USSR, Leningrad Order of Lenin and Order of Labor Red Banner Mining Inst im G. V. Plekhanov, Chair of Mine Ventilation and Safety Engineering), 120 copies (KL, No 14, 1959, 120)

KREMENCHUTSKIY, N.F., kand. tekhn. nauk; GUMENYUK, T.Ye., kand. tekhn. nauk; IVANOV, V.A., inzh.; YATSENKO, I.S., inzh.

Preventing spontaneous fires in mines of the Promyshlennyy Section of the Karaganda Basin. Izv. vys. ucheb. zav.; gor. zhur. no.12:61-67 '61. (MIRA 16:7)

1. Karagandinskiy politekhnicheskiy institut (for Kremenchutskiy, Gumenyuk). 2. Karagandinskiy sovet narodnogo khozyaystva (for Ivanov). 3. Kombinat "Karagandaugol'" (for Yatsenko). Rekomendovana kafedroy rudnichnoy ventilyatsii i tekhniki bezopasnosti Karagandinskogo politekhnicheskogo instituta.
(Karaganda Basin--Coal mines and mining--Fires and fire prevention)

GUMENYUK, T.Ye., kand. tekhn. nauk

Design and selection of an underground auxiliary fan for operation without a jumper. Izv. vys. ucheb. zav.; gor. zhur. no.12:108-111 '61. (MIRA 16:7)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy rudnichnoy ventilyatsii i tekhniki bezopasnosti.
(Fans, Mechanical)

ORNATSKIY, Nikolay Vasil'yevich, prof., doktor tekhn. nauk; POPOV, I.V., prof., doktor geologo-miner. nauk, retsenzent; GUMENSKIY, V.M., prof., doktor geol.-miner. nauk, retsenzent; MAKSIMOV, S.N., red.; GEORGIYEVA, G.I., tekhn. red.

[Soil mechanics]Mekhanika gruntov. Moskva, Izd-vo Mosk. univ., 1962. 446 p. (MIRA 15:9)

(Soil mechanics)

BUTENKO, A.N.; GUMENUYK, V.S.

Acoustical device for ultrasonic testing of wires. Zav. lab. 31 no.11:1407-1408 '65. (MIRA 19:1)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

GUREVYUK, V. S.

Metallophysics
High-temp. Phys.

PROCESSES AND PROPERTIES INDEX

CA

Threshold value of the photoelectric disintegration of beryllium. K. D. Sinel'nikov, A. K. Val'ter, V. S. Gurevyuk and A. V. [illegible]. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 8, 1220-33(1938); *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. phys.* 1938, 781-4.— Fast electrons obtained by acceleration in a discharge tube fed by an electrostatic generator were used to produce x-rays with which the limit of the nuclear photoeffect was detd. The limiting energy was found to be 1.760 ± 0.015 m. e. v. The authors believe that the Bethe-Peierls theory for the deuterium photoeffect is not applicable to the photon disintegration of Be. F. H. Rathmann

Ukr. Phys-Tech. Res. Inst. Kharkov

AUTHOR: Gumenyuk, V.S. 32-12-62/71

TITLE: Short Reports (6) (Korotkiye soobshcheniya).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1520-1520 (USSR)

ABSTRACT: For the purpose of eliminating the disturbing phenomena of the occurrence of high frequency in the network circuit of ionization manometers of the types "BИ -3" and "ВИТ" which, when measuring the vacuum, consist in continuous deviations of the pointer of these apparatus towards the left from zero, it is recommended here that a special resistance "BC-0.5" for 100-500 ohms be switched into the network. This resistance is introduced in the outlet of the collector of the tube "LM-2" before the lid which protects this outlet. This modification of the scheme of the ionization manometer is said to exercise no influence whatever on the normal operation of vacuum measuring.

ASSOCIATION: Khar'kov Physical-Technical Institute (Khar'kovskiy fiziko-tekhnicheskiy institut).

AVAILABLE: Library of Congress

Card 1/1 1. Manometers-Operation 2. Vacuum-Measurements

GUMENYUK, V.S.

AUTHOR MITRONAN, I.M., and GUMENYUK, V.S. PA - 2663

TITLE Emission of Negative Ions from Metallic Surfaces Bombarded with Positive Hydrogen Ions. (Emissiya otritsatel'nykh ionov s poverkhnosti metallov pri bombardirovke polozhitel'nymi ionami vodoroda, Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 2, pp 214 - 222 (U.S.S.R.)

Received: 5/ 1957 Reviewed: 6 / 1957

ABSTRACT It is the aim of the present work to determine the coefficient of the knocking out of secondary negative ions and its dependence of the energy of primary hydrogen ions. The authors determine this coefficient on those metals which are used for the construction of high voltage accelerator tubes in laboratory practice. Besides, the authors carried out a mass spectroscopic analysis of the negative ions formed.

First the apparatus and the measuring method are discussed. The hydrogen ions were accelerated by means of an electrostatic generator fitted with a mass analyzer at its output.

Summary of results: The coefficient of the knocking-out of negative ions decreases monotonously with the increase of the energy of the primary hydrogen ions. The probability of the production of negative ions on the occasion of the

Card 1/2

bombarding of metal surfaces depends on the velocity of the primary ions, but obviously not on its mass. Secondary negative ion emission depends on the type of the target. The degassing of the target decreases the "emitting coefficient" K , and the number of emitted negative ions can become lower than the number of the fast primary positive ions scattered in the Coulomb field. The coefficient of the knocked out negative ions, the energy of which does not exceed 10 eV, is of the same order of magnitude as in the case of slow positive ions. (10 illustrations)

ASSOCIATION Physical-Technical Institute of the Academy of Science of the Ukrainian U.S.S.R.

PRESENTED BY
SUBMITTED 23.7.1956
AVAILABLE: Library of Congress.
Card 2/2

AUTHORS: Mitropan, I. M., Gumenyuk, V. S. 56-1-39/56

TITLE: On the Dependence of the Secondary Emission of Negative Ions From the Angle of Glide of Primary Protons on Collision With a Metallic Target (O zavisimosti vtorichnoy emissii otritsatel'nykh ionov ot ugla skol'zheniya pervichnykh protonov pri vstreche s metallicheskoy mishen'yu)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 1, pp. 235-236 (USSR)

ABSTRACT: The present paper attempts the estimation of the modification of the coefficient K^- of the secondary emission of negative ions in dependence on the angle of glide of the proton beam on collision with a target. For their tests the authors used a beam of 50 keV-protons and a method already earlier described by them (reference1). The modifications made in this method are shortly described. The dependence obtained here for the coefficient of the secondary negative ion emission on the angle of glide of the beam are illustrated in a diagram. For copper and stainless steal $\partial\vartheta - 1$ this coefficient in the entire domain of the angles of glide investigated has a positive sign. In the case of

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On the Dependence of the Secondary Emission of Negative Ions From the Angle of Glide of Primary Protons on Collision With a Metallic Target

56-1-39/56

a target of aluminum and beryllium the coefficient of secondary ion emission at large angles of glide is negative, but at angles of glide below 3o - 4o it passes through the value zero and becomes positive. Previous heating of the targets to 900°C (for 2o minutes) made possible a reduction of the coefficient K^- for beryllium targets and an increase in the coefficient K^+ for copper. The results obtained here may be understood by the following considerations: The secondary ion emission contains real secondary negative ions as well as protons of the primary beam which are scattered by more than 9o° by the Coulomb field of the nuclei of the targets. The sign of the observed coefficient of secondary emission is then dependent on the relative portion of these two components. At an energy of the protons of 5o keV in the case of a target of copper and stainless steel the number of scattered protons is at all angles of glide higher than the number of the secondary negative ions. For targets of aluminum and beryllium in the case of angles smaller than 4o - 3o° the number of secondary negative ions is higher than the number of scattered protons. The arithmetical errors

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On the Depencence of the Secondary Emission of Negative Ions From the Angle of Glide of Primary Protons on Collision With a Metallic Target

56-1-39/56

are not fewer than the experimental errors and therefore the authors did not succeed in exactly determining the coefficients of the knocking out of negative ions from the difference of current intensities. There are 1 figure and 2 references, 1 of which is Slavic.

ASSOCIATION: Physical-Technical Institute AN Ukrainian SSR (Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR)

SUBMITTED: October 5, 1957

AVAILABLE: Library of Congress

Card 3/3

24.2130

67660
SOV/126-8-6-7/24

AUTHORS: Gumenyuk, V.S. and Lebedev, V.V.

TITLE: Electrical Conductivity of Iron at High Temperatures

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 6, pp 847-850 (USSR)

ABSTRACT: The object of this work was to measure the resistivity of high-purity iron in the range 20 to 1450°C. A compensating method with a PPTV-1 potentiometer and M-21 galvanometer was used, current stabilization being secured at 1A with the aid of a barretter. The test pieces (Fig 1) of the type proposed by Kan and Lazarev (Ref 4) were in the form of 3 to 6 mm diameter and 50 to 100 mm long cylinders with slivers bent back at either end (for voltage tappings). The test-pieces were suspended in the hot zone of a special ceramic-less resistance furnace (Ref 5). This (Fig 2) had a system of horizontal spiral heaters supported by tungsten rods enclosed in a system of molybdenum-sheet cylinders. Its working space was 200 mm high by 35 mm in diameter, giving a temperature up to 2500°C at 6 kW. Temperature was measured with platinum/platinum-rhodium and chromel-alumel thermocouples and a

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Electrical Conductivity of Iron at High Temperatures

type PP instrument. The furnace with the test piece was placed in a vacuum chamber at 10^{-5} to 10^{-6} mm Hg. The results for distilled iron (Ref 6) are shown in Table 2 and in Fig 3 (curve 5). For comparison Fig 3 also shows the resistivity vs temperature curves for armco iron (curve 2), the corresponding curve (3) obtained by Mokrovskiy and Regel' (Ref 3) and by Sal'dau (Ref 1). In contrast to the results of Mokrovskiy and Regel' the present investigation showed that the resistivity of iron in the delta-range rose with temperature and more rapidly than in the gamma-range. There are 3 figures, 2 tables and 6 references, 5 of which are Soviet and 1 German.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physico-Technical Institute, AS UkrSSR)

SUBMITTED: June 26, 1959

Card 2/2

AZHAZHA, V.M.; GUMENYUK, V.S.; POPOV, B.Ye.

Expanding the use of the LGZ-10 high frequency oscillator.
Prib.i tekh.eksp. no.1:102-103 Ja-F '60.
(MIRA 13:6)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Oscillators, Electric)

GUMENYUK, V. (Khar'kov)

Increasing the operating reliability of stabilitron circuits.
Radio no.6:44 Je '60. (MIRA 13:7)
(Voltage regulators)

S/120/61/000/004/013/034
E111/E580

AUTHOR: Gumenyuk, V.S.

TITLE: Vacuum contact dilatometer

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1961, 101-103

ABSTRACT: The author describes a vacuum dilatometer for temperatures up to 1500°C (mainly 500-1500°C). The electric contact arrangement is linked with the adjustable table of a comparator. The layout is shown in Fig.1. The slides 4, 9, 14, 20 are connected in pairs to pull-rods 7 and 18 and the strip 10, and they move as an assembly along guides 6 and 13. The strip 10 is rigidly connected to the moving part of the length-measuring comparator 12. A metal thread (indicated by a dotted line) is stretched between the slides with the aid of a weight 19. When the carriage moves, the thread touches contact rods 15 or 17 attached to the specimen 16. The furnace 3 consists of two identical halves (only one shown) separated slightly by distance pieces 2 so that the thread moves freely. The thread and specimen, electrically connected to the furnace casing, are connected to a contact indicator 1 (Ref.6: B. Mills, Rev.Scient.

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Vacuum contact dilatometer

S/120/61/000/004/013/034
E111/E580

Instrum., 1941, 12, 105). To find the length of the specimen at a given temperature the carriage is moved until contact is indicated between the thread and contact-rods 15 and 17 in turn, the corresponding readings of the comparator being noted. The diameter of the thread is added to the difference in readings (in very accurate work the changes in thread diameter due to expansion are allowed for). The general accuracy is higher than that obtainable with a dilatometer based on optical length measurement. Vertical construction is preferable and this was used for a vacuum installation in which the dilatometer was located in a vacuum chamber 800 mm diameter and 850 mm long. An absolute pressure of 2×10^{-6} to 1×10^{-5} mm Hg was maintained during operation, temperature was measured by a thermocouple or by an optical pyrometer through special windows. Coarse and fine movement of the carriage was provided for. The comparator was held in a vertical position, a counter-weight taking most of the weight of its table. The furnace has already been described by the author and V.V.Lebedev (Ref.7: Fiz.metallov i metallovedeniye, 1959, 8, No.6, 847). Sonic as well as visual contact indication was provided. The error due to deflection of the thread was found to be under 5 microns and can

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Vacuum contact dilatometer

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E111/E580

be neglected in practice. The coefficient of expansion for tungsten did not differ by more than 1% from published values (Ref.8: A. G. Worthing, Phys.Rev., 1917, 10, 638; Ref.9:K.D.Smittels, Vol'fram, 1958, Metallurgizdat). When working with ceramic materials, a tubular test piece is held between two molybdenum holders with contact rods. The maximum working temperature of the apparatus depends on the thread material and could, the author considers, be raised to 2000-2100°C. There are 2 figures and 9 references, 6 Soviet and 3 non-Soviet. The English references have been quoted in the text.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physico-Technical Institute AS UkrSSR)

SUBMITTED: July 14, 1960

Card 3/4

GUMENYUK, V. S.

S/198/61/007/001/007/008
D205/D305

AUTHOR: Humenyuk, V.S.

TITLE: The resolutions of the coordinating conference on the question: "The strength of thin-walled constructions"

PERIODICAL: Prykladna mekhanika, v. 7, no. 1, 1961, 110 - 113

TEXT: The article is a report of the proceedings of the coordinating conference, summoned by the coordinating council, in Dniprope-trovs'k on May 23-24, 1960. 75 leading scientists from various parts of the Ukrainian SSR took part. H.M. Savin, (Academician of the AS UkrSSR) made the opening speech dealing with basic trends of research in mechanics in Ukraine over the next 15 years. He then spoke on current research into stress concentration around holes in shells. This problem was also considered in the speech of Doctor Yu.A. Shevlyakov (Doctor of Technical Sciences). In the speeches of V.I. Mossakovs'kyy (Doctor of Physical and Mathematical Sciences), Aspirants Petelin and L.I. Manyevych, V.I. Merkulov

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The resolutions of the ...

(Docent), B.N. Bublyk (Aspirant) and S.D. Leytes, research into the stability of shells was discussed, both from the rigidity of "ribs" and in the plane case. Ya.S. Podstryhach spoke on the state of elastic deformation in shells arising from the action of internal forces and unequal heating M.Ya. Leonov (Doctor of Technical Sciences) spoke on the approximation theory of torsion in thin-walled stems with closed and open profiles. V.A. Lazaryan (Doctor of Technical Sciences) spoke on various dynamical problems of systems of stems. P.M. Kychayev (Candidate of Technical Sciences) spoke on the stressed state in an elliptical disc under the action of central forces. There were speeches on problems of rigid bodies by M.Ya. Leonov (Candidate of Physico-Mathematical Sciences), V.V. Panasyuk (Candidate of Physico-Mathmatical Sciences) and P.M. Vitvyts'kyy (Aspirant). The conference recognized that basic research on the strength of thin-walled constructions over the next 15 years must follow the resolutions of the Scientific Council, AS UkrSSR, entitled "Scientific Enquiry into Strength and Plasticity". To facilitate the successful carrying out of these plans, the coordinating

The resolutions of the ...

S/198/61/007/001/007/008
D205/D305

conference made various recommendations, the most noteworthy being the establishment of scientific research institutes based on the present departments of mechanics in the universities of Kyyiv, L'viv, and Dnipropetrovs'k.

Card 3/3

89919

18.8100 1045, 1418, 1138
24.7600 1043, 1160, 1158

S/126/61/011/001/002/019
E032/E314

AUTHORS: Gumenyuk, V.S. and Lebedev, V.V.

TITLE: Study of the Thermal and Electrical Conductivity of Tungsten and Graphite at High Temperatures

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11, No. 1, pp. 29 - 33

TEXT: A description is given of an apparatus for the determination of the thermal and electrical conductivity and their ratio for metals and alloys in the temperature region 900-2 200 °C. Data on the temperature dependence of the thermal and electrical conductivity of tungsten and graphite are reported as well as the values of the Wiedemann-Franz ratio in a wide temperature interval. Empirical formulae are put forward to represent the thermal conductivity of tungsten and graphite as a function of temperature. The thermal conductivity was determined by the method described in a previous paper (Ref. 5) and is based on the following considerations. If a short and a long rod of the same diameter and chemical composition

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S/126/61/011/001/002/019
E032/E314

Study of the Thermal and Electrical Conductivity of Tungsten and Graphite at High Temperatures

are heated in a vacuum by an electric current to the same temperature, then the shorter rod will require a higher current owing to additional heat losses at the ends. The thermal conductivity of the material can then be calculated from the formula

$$\lambda = \frac{\rho x^2 (I^2 - I_1^2)}{2S^2 \triangle T}$$

where λ is the thermal conductivity,
ρ is the resistivity,
S is the cross-sectional area of the specimen,
$\triangle T$ is the temperature drop over a length x ,
I is the current necessary to heat the short specimen,
I_1 is the current necessary to heat the long specimen.

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Study of the Thermal and Electrical Conductivity of Tungsten and Graphite at High Temperatures

Thus, in order to determine λ it is necessary to measure ρ and I_1 on the long specimen and I and ΔT on the short specimen. These quantities were measured with the aid of a special device. The specimens were placed in water-cooled holders, one of which was free to move when the specimen expanded so that no stresses were applied to the specimen. The distance between the holders could be varied between 0 and 150 mm and the potential difference across defined sections of the specimen were measured by means of molybdenum or tungsten contacts. The whole system was placed in the vacuum chamber in a vertical position, the vacuum being of the order of 10^{-5} mm Hg. The potential differences were measured with the AC potentiometer P-30 (R-56), while the temperature was measured by the optical pyrometer ОППИР-09 (OPPIR-09) which was attached to the telescope of the cathetometer KM-6. In this way, the temperature and the

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distance were measured at the same time. In order to increase the accuracy of temperature measurement, the pyrometer was designed so that the potential difference across the pyrometer lamp was measured by a potentiometer. Careful calibration was also carried out against a platinum-platinum rhodium thermocouple (up to 1 500 °C) and by a ТНАМИМ-1 (TsNIIChM-1) thermocouple. In the case of the short specimen, the temperature distribution near its centre is given by

$$\Delta T = \frac{1}{2} f(\lambda) x^2 \quad .$$

Hence, in order to determine the thermal conductivity it is sufficient to plot ΔT vs x^2 and hence determine $f(\lambda)$ from the slope of the straight line. Fig. 2 shows such plots at 1 600 °C (Curve 1), 1 400 °C (Curve 2) and 1 600 °C (Curve 3)

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E032/E314

Study of the Thermal and Electrical Conductivity of Tungsten and Graphite at High Temperatures

for a tungsten specimen. The experiments were carried out on spectrally pure graphite and tungsten specimens which were heated to 1.700 ^{0}C for one hour before the measurements. Fig. 3 shows the thermal conductivity (Curve 1) (cal/cm deg sec) and the resistivity (Curve 2) (Ω cmx10^{6}) as functions of the temperature (^{o}C) for tungsten. A similar plot for graphite is shown in Fig. 4. The thermal conductivity of tungsten is in approximate agreement with the data reported by Osborn (Ref. 2). The results are not in agreement with those reported by Filyand and Semenova in Ref. 4, which are said to be incorrect. The Wiedemann-Franz ratio was calculated from these data. It was found that the Lorentz number obtained exceeds the theoretical value and is not very dependent on the temperature. In the case of graphite, the results obtained are in good agreement with published data. The temperature dependence of λ for tungsten was found to be

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E032/E314

Study of the Thermal and Electrical Conductivity of Tungsten and Graphite at High Temperatures

$$\lambda = 0.361 - 1.17 \cdot 10^{-4} T + 2.32 \cdot 10^{-8} T^2$$

and for graphite

$$\lambda = 0.12 - 0.547 \cdot 10^{-4} T + 1.42 \cdot 10^{-8} T^2 ,$$

where the temperature interval is 900 - 2 200 °C.
There are 4 figures, 3 tables and 6 references: 3 Soviet and 3 non-Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute of the AS Ukrainian SSR)

SUBMITTED: July 22, 1960

Card 6/9

S/862/62/001/000/005/012
E202/E492

AUTHORS: Gumenyuk, V.S., Ivanov, V.Ye., Lebedev, V.V.

TITLE: Determination of the thermal conductivity of metals at temperatures in excess of 1000°C

SOURCE: Teplo- i massoperenos. t.1: Teplofizicheskiye kharakteristiki materialov i metody ikh opredeleniya. Ed. by A.V.Lykov and B.M.Smol'skiy. Minsk, Izd-vo AN BSSR, 1962, 94-101

TEXT: A method and apparatus developed in the Fiziko-tekhnicheskiy institut AS USSR (Physico-Technical Institute AS UkrSSR) for measurement of the thermal conductivity of metals and alloys up to their melting point are described. Calculation of the thermal conductivity requires determination of the specific electrical resistance, the amount of current and the distribution of temperature along the samples, which are in the form of right circular cylinders (e.g. wires). The apparatus comprises a vacuum chamber with the sample placed between two water-cooled clamps and connected to the electrical supply. Surface temperature measurements are carried out by means of a micro-

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pyrometer of the disappearing filament type, mounted on a cathetometer so that the measurements may be taken along the whole length of the sample. The samples used were within 0.5 to 5 mm in diameter and the distance between the clamps could be varied up to 250 mm. As an example, the authors carried out measurement of electrical resistivity and conductivity of Mo, Ta and W wires and developed from first principles the heat balance equations, considering the loss due to radiation and conductivity only. The method is recommended on account of the relatively simple apparatus and relatively high accuracy, and was tried within the range from 0 to 1200°C. It was found that within the above range the thermal conductivities of all the metals studied decrease with temperature. There are 7 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physico-Technical Institute AS UkrSSR)

S/120/62/000/001/048/061
E039/E485

18 2100

AUTHORS: Gumenyuk, V.S., Ivanov, V.Ye., Lebedev, V.V.

TITLE: The determination of the thermal and electrical conductivity of metals at temperatures higher than 1000°C

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 185-189

TEXT: The investigation of the thermal properties of metals and alloys at high temperatures is of considerable interest in the theory of metals and for practical applications. There is no published data in the Soviet literature on the thermal conductivity of refractory materials and only a limited number of non-Soviet papers. In the method described the sample in rod form is heated by an electric current in a vacuum. Differential equations are set up, taking into account the Stefan-Boltzman radiation law, and formulae are derived for determining the coefficient of thermal conductivity and electrical conductivity of the sample material. In order to obtain the required data it is necessary to measure the potential difference on the working length of the sample and also the temperature distribution over the

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same length. This must be done for two samples differing either in length or diameter. The samples are held in water cooled clamps in the vacuum chamber and the potential difference along them is measured by means of two tungsten or molybdenum probes and a potentiometer. The temperature is measured by means of a micro-optical pyrometer ОМП-019 (OMP-019), fastened to the moving carriage of a cathetometer, which enables an accurate temperature distribution to be obtained. The thermal conductivity λ and specific resistance ρ for tantalum is shown to vary from $\lambda = 0.1129$ cal/cm sec °C and $\rho = 50.50$ micro ohms cm at 900°C to $\lambda = 0.0904$ cal/cm sec °C and $\rho = 108.42$ micro ohms cm at 2500°C. There are 4 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physicotechnical Institute AS USSR)

SUBMITTED: May 11, 1961

Card 2/2

ACCESSION NR: AP4024186 S/0294/64/000/001/0029/0031

AUTHOR: Amonenko, V. M.; V'yugov, P. N.; Gumenyuk, V. S.

TITLE: Investigation of thermal expansion of tungsten, molybdenum, tantalum, niobium, and zirconium at high temperatures.

SOURCE: Teplofizika vy*sokikh temperatur, no. 1, 1964, 29-31

TOPIC TAGS: tungsten, molybdenum, tantalum, niobium, zirconium, thermal expansion, high temperature thermal expansion, relative elongation, thermal expansion coefficient, zirconium allotropic transformation

ABSTRACT: The relative elongation of the metals was measured with an improved contact-making vacuum dilatometer (V. S. Gumenyuk, Pribory* i tekhnika eksperimenta, no. 4, 1961) used in conjunction with an optical pyrometer (800-2000C range) or a Pt-PtRh thermocouple (200-1200C). The length measurements were accurate to ±1μ (1 per cent at high and 3 per cent at low temperatures), and the temperature was uniform within 5°C. A tungsten resistance furnace was used to heat the tested metals (zirconium to 1450C and the others

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ACCESSION NR: AP4024186

to 2000C). Empirical formulas are derived to fit the temperature vs. relative elongation curves obtained, differentiation of which yields the temperature variation of the linear expansion coefficients. The kink in the curve for zirconium (beginning with 865C) is due to its allotropic transformation. Orig. art. has: 3 figures and 5 formulas.

ASSOCIATION: Fizko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 27May63	DATE ACQ: 16Apr64	ENCL: 01
SUB CODE: PH, ML	NO REF SOV: 004	OTHER: 003

Card 2/2

KORNEV, K.A., glav. red.; SHEVLYAKOV, A.S., red.; CHERVYATSOVA, L.L., red.; SMETANKINA, N.P., red.; YEGOROV, Yu.P., red.; ROMANKEVICH, M.Ya., red.; KUZNETSOVA, V.P., red.; PAZENKO, Z.N., red.; KACHAN, A.A., red.; VOYTSEKHOVSKIY, M.V., red.; GREKOV, A.P., red.; DUMANSKIY, I.A., red.; AVDAKOVA, I.L., red.; VYSOTSKIY, Z.Z., red.; GUMENYUK, V.S., red.; MEL'NIK, A.F., red.

[Synthesis and physical chemistry of polymers; articles on the results of scientific research] Sintez i fiziko-khimiia polimerov; sbornik statei po rezul'tatam nauchno-issledovatel'skikh rabot. Kiev, Naukova dumka, 1964. 171 p. (MIRA 17:11)

1. Akademiya nauk URSR, Kiev. Institut khimii vysokomolekulyarnykh soyedineniy. 2. Institut fizicheskoy khimii im. L.V. Pisarzhevskogo AN USSR (for Vysotskiy). 3. Institut khimii vysokomolekulyarnykh soyedineniy AN USSR (for Romankevich, Chervyatsova, Voytsekhovskiy).

L 25759-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 MLK/RM

ACCESSION NR: AT5002670 S/0000/64/000/000/0162/0167

AUTHOR: Bessonov, V. G.; Gumenyuk, V. S.; Tyshkevich, O. A.

TITLE: The effect of fillers on the modulus of elasticity of glass plastics

SOURCE: AN UkrSSR. Institut khimii vysokomolekulyarnykh soyedineniy. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 162-167

TOPIC TAGS: glass plastic, glass plastic elasticity, polymer elasticity, filler, polymer density

ABSTRACT: The modulus of elasticity, E, of unoriented samples of glass plastic was determined experimentally in order to study its dependence on density and the amount of filler. Experimental values of E were derived from the deformation of flat and annular samples under loads measured with tensometers and the SID statistical deformation meter, and from free vibration measurements. E was shown to depend linearly upon the ratio of the cross sectional area of the filler to the total cross sectional area. An empirical formula derived defines E, in units of bars, as

$$E = 1 \cdot 10^7 \frac{\eta_{st}}{\rho}$$

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ACCESSION NR: AT5002670

ρ being density and η_{st} being $Q_n \cdot 100\%/Q_{st}$, where Q_n and Q_{st} are the weight of filler and glass plastic, respectively. The deviation of calculated E from average experimental values was shown not to exceed 8%, and the formula can be used for the design of machines and apparatus containing glass plastic components. Orig. art. has: 5 figures, 2 tables and 10 formulas.

ASSOCIATION: Institut mekhaniki AN UkrSSR (Mechanics Institute, AN UkrSSR)

SUBMITTED: 22Jun64 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 000

Card 2/2

V'YUGOV, I.N. [V'iukov, I.N.]; [illegible], V.S. [illegible]

High-temperature ultrasonic interferometer. Zav. fiz. lab. 9 no.7: 766-768 Jl '64. (MIRA 17:10)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

L 61057-65 EPF(c)/EPA(s)-2/EWP(j)/EWT(m)/T Pc-4/Pr-4/Ps-4 RM/WW

ACCESSION NR: AP5017127 UR/0198/65/001/006/0092/0096

AUTHORS: Gumenyuk, V. S. (Kiev); Kritsuk, A. A. (Kiev); Lositskiy, V. I. (Kiev)

TITLE: Effect of temperature on mechanical properties of fiberglass reinforced plastics

SOURCE: Prikladnaya mekhanika, v. 1, no. 6, 1965, 92-96

TOPIC TAGS: fiberglass, stress load, mechanical property, yield strength, temperature dependence, Poisson coefficient, compression strength, elasticity modulus, tensile strength/ GMS 50 machine, EFB 4 epoxy, RM 30 machine, BF 32 301 Textolite

ABSTRACT: The mechanical properties of several fiberglass reinforced plastics were investigated under normal and elevated temperature conditions. The mechanical tests included compression, tension, and impact deflection between temperatures of 233 and 423K. The unidirectional specimens were tension tested in a GMS-50 machine and the elasticity, in 30-ton universal machine RM-30. The specimens were small in size, averaging 10 x 10 x 15 mm and 15 x 15 x 40 mm. Strain measurements were made by wire strain gauges and by inductive detectors. The bonding agents used were epoxy-phenolics EFB-4. The test results are given in tabular as well as in

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ACCESSION NR: AP5017127

graphic form. The first table lists the properties of unidirectional fiberglass reinforced plastics and the second, the properties of glass laminates. Analytic expressions are quoted for yield strength, elasticity modulus, and Poisson's coefficient for the fiberglass reinforced plastic specimens. The results show that under elevated temperatures the tensile strength decreases slightly but the compressive strength falls sharply--by about 10% of its value at the 293K temperature. Orig. art. has: 4 figures, 3 formulas, and 2 tables.

ASSOCIATION: Institut mekhaniki, AN UkrSSR (Institute of Mechanics, AN UkrSSR)

SUBMITTED: 04Oct64 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 000

Card 2/2

(A) L 11898-66 EWT(1)/EWT(m)/EWP(w)/EPF(n)-2/T/EWP(t)/EWP(b)/ETC(m)

ACC NR: AP6001920 IJP(c) JD/JG UR/0294/65/003/006/0936/0937

AUTHOR: V'yugov, P.N.; Gumenyuk, V.S.

ORG: Physicotechnical Institute AN UkrSSR (Fiziko-tekhnicheskiy institut Akademii nauk UkrSSR)

TITLE: Thermal expansion of tungsten and tantalum in the 1500-3000°C temperature region

SOURCE: Teplofizika vysokikh temperatur, v.3, no.6, 1965, 936-937

TOPIC TAGS: tungsten, tantalum, thermal expansion, high temperature metal

ABSTRACT: Up to the present time, the thermal expansion of tungsten has been studied only up to a temperature of 2000° and that of tantalum up to 2700°. The present study extends the limit up to 3000° (in vacuum) for technical grade tungsten and tantalum. The experiments were carried out in a high-temperature vacuum dilatometer and the samples were heated by an electric current. The samples were in the form of rods 2 mm in diameter and 200-240 mm long. The experimental results are shown graphically. It was found that the relative thermal expansion as a function of temperature, within the limits investigated, can be expressed by the following empirical formulas:

Card 1/2 UDC: 546.883+546.78:536.413

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ACC NR: AP6001920

for tungsten: $L/L_0 = -6.6 \times 10^{-5} + 3.7 \times 10^{-6} T + 8.7 \times 10^{-10} T^2$

for tantalum: $L/L_0 = -1 \times 10^{-4} + 6.5 \times 10^{-6} T + 7.45 \times 10^{-10} T^2$

where L_0 is the length of the sample at 20°; T is the temperature of the sample. The values of the true coefficients of linear expansion in the temperature interval investigated can be expressed by the following relationships:

for tungsten: alpha = $(3.7 + 1.74 \times 10^{-3} T) \times 10^{-6}$/degree

for tantalum: alpha = $(6.5 + 1.49 \times 10^{-3} T) \times 10^{-6}$/degree.

Orig. art. has: 1 figure.

SUB CODE: 20,11/ SUBM DATE: 06Feb65/ ORIG REF: 003/ OTH REF: 002

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L 8952-65 EEO-2/EWT(d)/EPA(s)-2/EWT(m)/EPF(n)-2/EEC-4/EPA(w)-2/EED-2/EWP(q)/EWP(b)/EWA(h) Pm-4/Pab-24/Pac-4/Pt-10/Peb/Pu-4 ASD(p)-3 WH

ACCESSION NR: AP4043096 S/0185/64/009/007/0766/0768

AUTHOR: V'yugov, P. M.; Gumenyuk, V. S.

TITLE: High-temperature ultrasonic interferometer

SOURCE: Ukrayins'ky^y fizy^chny^y zhurnal, v. 9, no. 7, 1964, 766-768

TOPIC TAGS: ultrasound, ultrasound velocity measurement, high temperature ultrasonic interferometer, liquid metal, liquid metal sound velocity

ABSTRACT: Figure 1 of the Enclosure shows a schematic diagram of a high-temperature ultrasonic interferometer for measuring the velocity of sound in liquid metals and alloys. A specific feature of the interferometer is that it conducts sound to the metal being studied through a solid bar of the same metal. Piezoelement 4 of the ultrasonic transducer is held against the bottom face of solid bar 6 of the metal being investigated. The lower portion of the bar is water cooled in chamber 5. The remainder of the bar passes

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ACCESSION NR: AP4043096

through tubular electrically heated crucible 7 in which a length 8 of the bar from the top face down is melted and kept at the required temperature. The bottom portion of the molten bar solidifies, thus preventing the liquid metal from leaking out. Reflector 9, made of a refractory metal which can be positioned a required number of half-waves from the solidified layer of the melt, determines the distance along which the velocity of sound is measured by the conventional method. A barium titanate piezoelement, 2 mm in thickness and 18 mm in diameter, operates at a current frequency of 1200 ± 0.3 kc. The maximum operating temperature is limited only by the heat resistance of the material of the furnace and reflector, and can be raised to 1500—2000C. The measurement error is about 0.2—0.3%. The velocity of sound in liquid tin in the 260—600C temperature range was found to be 2841 ± 7 m/sec., which agrees well with the literature data. The velocity of sound in liquid aluminum at 750C was found to be several per cent lower than in the solid metal. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Fizy*ko-tekhnicheny*y Institut AN UkrSSR, Kharkov (Physicotechnical Institute, AN UkrSSR)

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L 8952-65

ACCESSION NR: AP4043096

SUBMITTED: 18Nov63 ATD PRESS: 3105 ENCL: 01

SUB CODE: MM,GP NO REF SOV: 003 OTHER: 004

Card 3/4

L 8952-65
ACCESSION NR: AP4043096

ENCLOSURE: 01

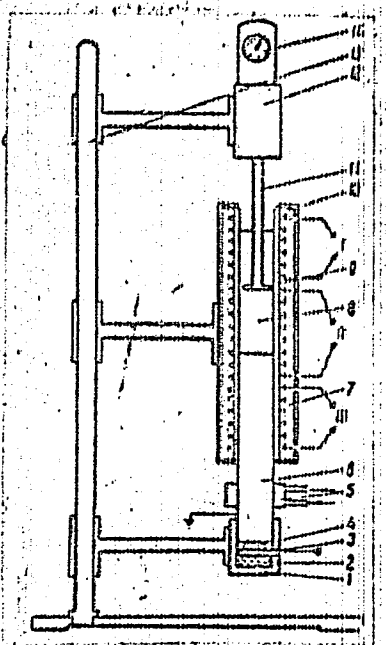

Fig. 1. Diagram of high-temperature ultrasonic interferometer

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GUMENYUK, V.S.

Determining the frequency of free vibrations in orthotropic plates. Dop.AN URSR no.1:39-41 '56. (MLRA 9:7)

1.Institut budivel'noi mekhaniki AN URSR. Predstaviv diysniy chlen AN URSR M.V.Kornoukhov.
(Elastic plates and shells) (Vibration)

GUMENYUK, V.S.

Free vibrations in plates of variable thickness. Dop.AN URSR no.2:130-133 '56. (MLRA 9:12)

1. Institut budivel'noi mekhaniki Akademii nauk URSR. Predstavleno akademikom Akademii nauk USSR N.V. Kornoukhovym.
(Elastic plates and shells)

GUMENYUK, V.S. (Kiiv)

Determining the lowest (basic) frequency of free vibrations in rectangular orthotropic plates. Prikl.mekh. 2 no.2:224-226 '56. (MLRA 9:10)

1.Institut budivel'noi mekhaniki Akademii nauk URSR.
(Vibration) (Elastic plates and shells)