"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOICS, Laszlone

Hard water - soft water. Elet tud 16 no.25:Suppl.: Tarkatudomany 2 no.13:100-101 18 Je '61.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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L 41994-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4

ACCESSION NR: AP5012518 RU/0003/64/015/008/0505/0509

20
B

AUTHOR: Goidea, D.

TITLE: Production of acrylic and methacrylic compounds on the basis of the chemical processing of hydrocarbon

SOURCE: Revista de chimie, v. 15, no. 8, 1964, 505-509

TOPIC TAGS: acrylic plastic, organic synthetic process, hydrocarbon

Abstract [Author's English summary modified]: A report on the laboratory preparation of various acrylic monomers (acrylamide, acryl and methacrylic acid, and their esters) at the Chimigaz Institute of Mediaş, as well as on the partial or total hydrolysis of acrylonitrile and methacrylonitrile and on single-stage esterification. The technological process is suitable for continuous operation with yields of over 90% of the final product. Pilot scale research has also been carried out.
Orig. art. has 2 figures and 9 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 000 OTHER: 000 JPRS

Card 1/1 Ce

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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L 30760-66 EWP(j) RM/WW

ACC NR: AP6020247 SOURCE CODE: RU/0003/65/016/11-/0537/0542

AUTHOR: Serban, S.; Goidea, D. (Engineer)

ORG: "Chimigaz" Institute, Medias (Institutul "Chimigaz")

33
B

TITLE: Oxidative ammonolysis of propylene into acrylonitrile

SOURCE: Revista de chimie, v. 16, no. 11-12, 1965, 537-542

TOPIC TAGS: acrylonitrile, propylene, ammonia, oxygen

ABSTRACT: The authors describe the preparation of acrylonitrile by the reaction of propylene, ammonia and oxygen, discussing various experiments performed to determine optimal operating parameters and catalysts. The most satisfactory method elaborated results in the production of acrylonitrile at a cost only 45 to 50 percent that of the older accepted methods of preparation. Orig. art. has: 12 figures. [JPRS]

SUB CODE: 07, 11 / SUBM DATE: none / OTH REF: 007 / SOV REF: 002

Card 1/1 LS

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2

Goidea, Dumitru

Sand filters in the clarification of industrial water. Dimitru Goidea. *Rev. chim.* (Bucharest) 6, 345 (1955). — Several types of filter installations, their functioning, filtering materials, etc., are evaluated for different applications. General formulas are given. — Gary Gerard

clem

PM

5

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOIDEA, D.

Obtaining acrylic and metacrylic compounds on the basis of hydrocarbon chemical treating processes. Rev. Chimie Min pet- 15 n 48:505-509 Ag '64

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOIL, GY.

"The functioning of thermistor thermometers." p.344

IDOJARS. (Meteorologiai Intezet es Magyar Meteorologiai Tarsasag)
Budapest, Hungary, Vol. 62, No. 6, Nov/Dec. 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959.
Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOILAV, E.

Contributions to the algebraic treatment of electric schemes with relays and contacts of many positions.

p. 130
Vol. 4, no. 3, Mar. 1956
ELECTROTEHNICA
Bucuresti

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 5, no. 12
December 1956

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOILAV, E.

TECHNOLOGY

REVISTA CAILOR FERATE Vol. 6, no. 9, Sept. 1958.

Automatic section block system assures under advantageous conditions an increased passage capacity of simple lines. p.478.

Monthly List of East European Accessions (EEAI), LC, Vol. 8 No. 5
May 1959, Unclass.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

OCILAV, E.

Regulating the railroad circuits. p. 489.

REVISTA CAILOR FERATE. (Caile Ferate Romine) Bucuresti, Rumania.
Vol. 7, no. 9, Sept. 1959.

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

Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

CADARIU, I.; GOINA, T.

Complexes of trivalent metals with organic hydroxy acids. Pt. 19. Studia Univ B-B S. Chem 8 no. 2:27-31 '63.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOIS, M.; MENSIK, J.; DAVIDOVA, M.; MESAROS, E.; JURMANOVA, K.

Attempt to standardize techniques used in isolating influenza virus from pig lungs. Acta virol. (Praha)[Eng] 7 no.5:455-464 S '63.

1. Research Institute of Veterinary Medicine, Brno, Czechoslovakia.

(INFLUENZA VIRUSES) (SWINE DISEASES)
(LUNG)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOISA, M.I.

Some notes on the method of recording total radiation by an unscreened pyranometer. Trudy UkrNIGMI no.20:43-47 '60. (MIRA 14:2)
(Pyranometer)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOISHVILI, B.A.; BIBILURI, G.G.

Diabases of the Verkhnyaya Racha. Geol. sbor. [Kavk.] no.2: 212-221 '62. (MIRA 17:1)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOŠOVÁ, M

CZECH

**Relation between the shake and filter bell methods of tannin analysis.** Antonín Stehlík, M. Gošová, and [illegible] Laćďáková (Leather & Allied Tr[illegible] Inst. Gottwaldov, Czech.). *Kožařství* 4, 105-7(1954).—The results can be calcd. according to the equation $T = T_1 - N_1[1 - (N/N_1)]$, in which $T$ = tannin by the filter bell (I) method of analysis, $N$ = nontannins by I, $T_1$ = tannin by the shake method (II), and $N_1$ = nontannins by II. The value $N/N_1$, characteristic for each tanning material, must be known and be const. These values have been detd. by the Czechoslovakian standard hide powder. Value $K = 1 - N/N_1$ and $K_1 = N_1/N$ have been detd. For quebracho ordinary, quebracho-sulfited, Syntan $K_1D$, Syntan SN$_{2}$, Kortan QU 1, Sytanid (lignin ext.), spruce, chestnut, oakwood exts., and valonia $K$ is 0.7, 0.44, 1.62, 1.43, 0.59, 0.09, 0.20, 0.30, 0.34, and 0.41, resp. $K_1$ is 0.41, 0.31, 0.62, 0.59, 0.37, 0.08, 0.17, 0.23, 0.26, and 0.29, resp. A table of results is given. $N_1/N$ varies for spruce ext. from 1.13 to 1.23, for syntan $K_1D$ from 1.95 to 3.30, for sulfited quebracho from 1.38 to 1.48. These values are less const. for syntans than for natural tannins.

L. Masiek

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

POLAND / Microbiology. Industrial Microbiology. F-3

Abs Jour : Ref Zhur - Biol., No 20, 1958, No. 90787

Author : Pezacki, W.; Opuszanska, H.; Dzierzynska, B.; Graj, A.
Inst : Not given
Title : Influence of Temperature and Humidity on the Growth of Surface Microflora on Hungarian Salami

Orig Pub : Med. weterynar., 1957, 13, No 9, 586-592 (Polish; res. Russ., Eng.)

Abstract : A typical example of the surface microflora of salami produced in Hungary is the Penicillium; a significant amount of yeast was also found in the microflora of Polish salami. A temperature of 5 - 10 degrees and a relative humidity of 75% were best for ripening of the flasks, because these conditions were the most favorable for the growth of Penicillium only in the ripening process. The molding process was accomplished in 4 weeks. -- From the Author's resume.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

[illegible], J.

[illegible], J. Organization of the work site. p. [illegible].

Vol. 4, no. 11, Nov. 1955
[illegible]
Zagreb, Yugoslavia

So: Eastern European Accession Vol. 5 No. 4 April 1956

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOJINIC, V.

"The best postwar fishing season in Ulcinj."

p. 307 (Morsko Ribarstvo) Vol. 9, no. 12, Dec. 1957
Rejeka, Yugoslavia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOJKOVIC, Dr. Gjuro

"Infective Enterohepatitis in Poa fowl". Vet. Bacteriologist at the Vet. Inst. at Vinkovci, P. R. Croatia.

SOURCE: Vet. SVEZAK 2, p. 395, 1953

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOJNIC, V.

Poor fishing catch in the Montenegrin Littoral during the past year. p. 90. MORSKO RIBARSTVO. (Udruzenje morskog ribarstva Juroslavije) Rijela. Vol. 8, no. 3, Mar. 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress Vol. 5, no. 11, Nov., 1956.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOJSKI, J., MARSZAŁEK, P.

"Oficerowie rolnictwa" (Officers of agriculture), by J. Gojski, P. Marszałek. Reported in New Books (Nowe Ksiazki), No. 13, July 1, 1955

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

"APPROVED FOR RELEASE: Thursday, September 26, [illegible]
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000[illegible]

[illegible]

[illegible]

Periodical: [illegible]

[illegible]

Vol. [illegible], [illegible], Feb. [illegible].

Monthly List of Past Europe and Accessions ([illegible]), [illegible], Vol. [illegible], [illegible]
[illegible], Unclass.

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000519[illegible]

POPA, Vasil', inzh.; LAZER, Yakob, inzh.; KIRILE, Aurel, inzh.; BETSAGA, Nikolay, inzh.; GOKAN, Gavriil, inzh.

Concrete heating devices with asbestos-cement pipe. Vod. i san. tekh. no.7:29-31 Jl '62. (MIRA 15:9)

(Rumania--Radiant heating)
(Rumania--Pipe, Asbestos-cement)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
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ABRAMOV, S.K., kand.tekhn.nauk; AVERSHIN, S.G., prof., doktor tekhn.nauk; AMMOSOV, I.I., doktor [illegible] min.nauk; ANDRIYEVSKIY, V.D., inzh.; ANTROPOV, A.N., inzh.; [illegible]NASIYEV, B.L., inzh.; BERGMAN, Ya.V., inzh.; BLOKHA, Ye.Ye. [illegible] BOGACHEVA, Ye.N., inzh.; BUKRINSKIY, V.A., kand.tekhn.nauk; VASI[illegible] P.V., doktor geol.-min.nauk; VINOGRADOV, B.G., inzh.; GOLUBEV, [illegible] inzh.; GORDIYENKO, P.D., inzh.; GUSEV, N.A., kand.tekhn.nauk; DOROH[illegible], kand.geol.-min.nauk; KALMYKOV, G.S., inzh.; KASATOCHKIN, V [illegible] doktor khim.nauk; KOROLEV, I.V., inzh.; KOSTLIVTSEV, A.A., [illegible] KRASTKOVSKIY, L.F., inzh.; KRASHENINNIKOV, G.F., prof. doktor geol.-min.nauk; KRIKUNOV, L.A., inzh.; LEVIT, D.Ye., inzh.; LISITSA, I.G., kand.tekhn.nauk; LUSHNIKOV, V.A., inzh.; MATVEYEV, A.K., dots., kand.geol.-min.nauk; MEPURISHVILI, G.Ye., inzh.; MIRONOV, K.V., inzh.; MOLCHANOV, I.I., inzh.; NAUMOVA, S.N., starshiy nauchnyy sotrudnik; NEKIPELOV, V.Ye., inzh.; PAVLOV, F.F., doktor tekhn.nauk; PANYUKOV, P.N., doktor geol.-min.nauk; POPOV, V.S., inzh.; PYATLIN, M.P., kand.tekhn. nauk; RASHKOVSKIY, Ya.[illegible] inzh.; ROMANOV, V.A., prof., doktor tekhn. nauk; RYZHOV, P.A., [illegible] doktor tekhn.nauk; SELYATITSKIY, G.A., inzh.; SPERANSKIY, M.A., inzh. [illegible]MENTYEV, Ye.V., inzh.; TITOV, N.G., doktor khim.nauk; GOKAREV, [illegible] inzh.; TROYANSKIY, S.V., prof., doktor geol.-min.nauk; FEDOROV, P.I. [illegible] kand.tekhn.nauk; FEDOROV, V.S., inzh. [deceased]; KHOMENTOVSK[illegible] A.S., prof., doktor geol.-min.nauk; TROYANOVSKIY, S.V., otvetstv[illegible] red.; TERPIGOREV, A.M., red.; KRIKUNOV, L.A., red.; KUZNETSOV, I.A., [illegible] MIRONOV, K.V., red.; AVERSHIN, S.G., red.; BURTSEV, M.P., red.; VA[illegible]YEV, P.V., red.; MOLCHANOV, I.I., red.; RYZHOV, P.A., red.; BA[illegible], V.V., inzh., red.; BLOKH, I.M., kand. tekhn.nauk, red.; BUK[illegible] V.A., kand.tekhn.nauk, red.; VOLKOV, K.Yu., inzh., red.; VOROB'YEV [illegible], inzh., red.; ZVONAREV, K.A., prof. doktor tekhn.nauk, red.

(Continued on next card)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
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ABRAMOV, S.K.---- (continued)

ZDANOVICH, V.G., pr[illegible] tekhn.nauk,red.; IVANOV, G.A., doktor geol.-min.nauk, red[illegible] N.M., red.; KOROTKOV, G.V., kand.geol.-min.nauk, red.; KOR[illegible] kand.tekhn.nauk, red.; MAKKAVEYEV, A.A., doktor geol.-min.nauk [illegible] OMELYCHENKO, A.N., kand.tekhn.nauk,red.; SEIDERZON, E.M., kand[illegible] nauk, red.; USHAKOV, I.N., dots., kand. tekhn.nauk, red.; [illegible] S., kand.geol.-min.nauk,red.; KOROLEVA, T.I., red.izd-va; K[illegible], red.izd-va; PROKOROVSKAYA, F.L., tekhn.red.; KADEINSKA[illegible] tekhn.red.

[Mining; an encycl[illegible]] Gornoe delo; entsiklopedicheskii spravochnik. Glav[illegible] Gorbagorev. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po na[illegible] Vol.2. [Geology of coal deposits and surveying] Geol[illegible] tekhn mestorozhdenii i marksheiderskoe delo. Redkolegiia [illegible] Valrolanskiy. 1957. 646 p. (MIRA 11:5)

1. Chlen-korrespon[illegible] SSSR (for Karavayev)
(Co[illegible] Dictionaries)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHALE, N.W.

A structural study of the quartz phyllite and granite occurence near fluorite-galena mine of Pezka, Velence Hills, Hungary. Acta geol Hung 8 no.1/4:337-345 '64.

1. Department of Geology of Lorand Eotvos University, Budapest.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GORDON, O.L.; OLENEVA, V.A.; GOKHAR', L.G.; MARKOVA, G.F.

Adequate optic chronaximetry in patients with chronic stomach diseases. Vest.LGU 14 no.3:136-140 '59. (MIRA 12:5)
(STOMACH--DISEASES) (VISION)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHAR'-KHAIMANDAR'YAN, L.G. (Moskva)

Optic adequate chronaxy in patients with peptic ulcer and its changes under the influence of therapy. Klin.med. 38 no.9:103-109 S '60. (MIRA 13:11)

1. Iz gastroenterologicheskogo otdeleniya (zav. - prof. O.L. Gordon [deceased]) klinika lechebnogo pitaniya (zav. - prof. F.K. Men'shikov) Instituta pitaniya AMN SSSR (dir. - chlen-korrespondent AMN SSSR prof. O.P. Molchanova).

(PEPTIC ULCER) (CEREBRAL CORTEX)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHAR'-KHAMBARYAN, I.G.

Architectural and spatial characteristics of cupola roofs and some problems of economics. Izv.vys.uch.zav.; stroi. i arkhit 5 no.4:171-180 '62. (MIRA 15:9)

1. Moskovskiy arkhitekturnyy institut.
(Domes)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

1. ROZENFEL'D, Z. M., Arch. GOKHBERG, A. I., Eng.

2. USSR (600)

4. Moscow - Moving - Picture Theaters

7. Ways of increasing the number of motion picture theaters in Moscow. Gor khoz Mosk No 3 1949

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

LAGUTENKO, V.P., inzhener; GOKHBAUM, A.I., inzhener; LIPKIN, G.Ya., inzhener.

Make efficient use of material in structural units for buildings. Gor.khoz.Mosk.30 no.1:11-15 Ja '56. (MLRA 9:6)

1.Institut "Mosproyekt".
(Building materials)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHBAUM, A., inzh.; LIPKIN, G., inzh.

Efficient construction of basement walls and foundations. Gor.i sel'. stroi. no.12:4-6 D '57. (MIRA 11:2)
(Foundations) (Walls) (Basements)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

ALABYAN, K.S.; GOKHBAUM, A.I.

Build more houses with small apartments. Gor. khoz. Mosk. 31 no.4:9-14 Ap '57. (MLRA 10:6)

1. Rukovoditel' magistral'noy masterskoy No.2 instituta "Mosproyekt" (for Alabyan). 2. Glavnyy inzhener masterskoy No.2 instituta "Mosproyekt" (for Gokhbaum).
(Moscow--Apartment houses) (Architecture--Design and plans)

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(A) L 10993-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)

ACC NR: AP5028529 SOURCE CODE: UR/0286/65/000/020/0124/0124

INVENTOR: Smirnov, V. D.; Ushakov, V. N.; Spivak, M. A.; Gokhbaum, F. A.; Braylovskiy, M. I.; Astrova, T. I.

ORG: none

TITLE: Hydraulic cylinder for a high-capacity press. Class 58, No. 175823 /announced by Experimental Construction bureau of the central scientific research institute of building construction (Eksperimental'no-konstruktorskoye byuro tsentral'nogo nauchno-issledovatel'skogo instituta stroitel'nykh konstruktsiy)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 124

TOPIC TAGS: press, hydraulic press, high capacity press, press cylinder, cylinder design

ABSTRACT: This Author Certificate introduces a hydraulic cylinder for a high-capacity press. The cylinder (see Fig. 1) consists of inner metal shell 1, encased in a reinforced-concrete housing. Expansion joint 2 separates top 3 and bottom 4 of the housing to reduce the internal stresses. Orig. art. has: 1 figure. [DV]

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

L 10993-66

ACC NR: AP5028529

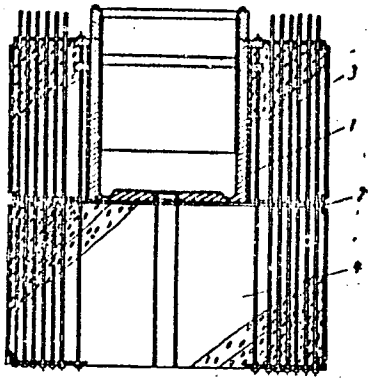


Fig. 1. Hydraulic cylinder

1 — metal shell; 2 — expansion joint; 3 — top of the housing; 4 — bottom of the housing.

SUB CODE: 13/ SUBM DATE: 27May64/ ATD PRESS: 4170

Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHBAUM, Ya., kinotekhnik (Petropavlovsk, Kazakhskaya SSR).

Repair of the PU-156 amplifier. Kinomekhanik no.10:31-32 O '53. (MLRA 6:10)

(Amplifiers, Vacuum-tube)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHBAUM, Ya., kinotekhnik (g. Petropavlovsk)

Interference of the DO-50 electric motor with sound reproduction. Kinomekhanik no.12:30 D '53. (MLRA 6:12)
(Motion-picture projectors)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

LANG, A.G.; MAZOVER, I.S.; MAYZEL', V.S.; BARANOV, N.A.; GOKHBER, M.M., dokt. tekhn. nauk, prof., retsenzent;; PAVLOV, N.G., kand. tekhn. nauk, red. MITARCHUK, G.A., red. izd-va; SHCHETININA, L.V., tekhn. red.

[Gantry cranes; design and construction ]Portal'nye krany; raschet i konstruirovanie. Izd.2., perer. i dop. Moskva, Mashgiz, 1962. 283 p. (MIRA 15:10)
(Cranes, derricks, etc.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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[illegible], [illegible]; [illegible], [illegible]

[illegible]

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2

N L 13071-66 EWT(m)/EWP(w)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW

ACC NR: AP5028578 SOURCE CODE: UR/0148/65/000/011/0136/0140

AUTHOR: Kidin, I. N.; Marshalkin, A. N.; Gokhberg, Yu. A.; Marchenko, V. Z.; Mizonov, Yu. M.; Kachapin, A. A.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Effect of the deformation of austenite prior to patenting on the properties of carbon-steel wire

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1965, 136-140

TOPIC TAGS: carbon steel, wire, rupture strength, plasticity, metal drawing, metal heat treatment, material deformation, ultimate strength, fatigue strength

ABSTRACT: The authors present the results of an experimental method for improving the strength and plasticity of carbon-steel wire by combining its thermomechanical treatment with sorbitizing and cold deformation by drawing. In view of the difficulties that might be encountered when thermomechanical treatment is combined with deformation by drawing (possibility of rupture, etc.), the thermomechanical treatment included deformation of the austenite by rolling prior to sorbitizing. The wire was heated by the electrocontact method at the rate of 50 and 400°C/sec prior to its sorbitizing. Following thermomechanical treatment (TMO) with deformation by rolling (60% reduction of area) the strength of 2.5-mm diameter wire proved to be 28 kg/mm$^2$ higher than following conventional patenting, and there was also some increase in

Card 1/2 UDC: 669.14:621.771.42

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ACC NR: AP5028578

plasticity which may be attributed to the onset of initial stages of recrystallization and the formation of a polygonal structure of the α-phase. On cold drawing of patented wire following its TMO the ultimate strength continually increases with increasing draft. When the draft reaches 84%, ultimate strength rises to 260 kg/mm$^2$, which is some 110% higher than immediately after TMO. The improvement in plasticity is such that the wire can be bent 25-28 times instead of 8-10 times and twisted 33-35 times instead of 8-12 times. This new method of producing high-strength wire dispenses with the need of employing the patenting process based on the use of lead and salt baths, makes it possible to obtain a wire with higher mechanical properties than following conventional patenting and cold drawing, increases by a factor of 2 or 3 the rate of heat treatment and markedly expands the possibilities for its automation. Orig. art. has: 2 tables, 4 figures.

SUB CODE: 11, 13/ SUBM DATE: 12Apr65/ ORIG REF: 004/ OTH REF: 001

Card 2/2 HW

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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GOKHBERG, I.K., dots.

Study of Lenin's heritage. Vest.sviazi 20 no.3:30 Mr '60. (MIRA 13:6)

1. Moskovskiy elektrotekhnicheskiy institut svyazi.
(Radio clubs)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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23

N

The Leningrad Physico-Technical Institute of the Academy of Sciences of the U.S.S.R. B. M. Gokhberg (Uspekhi Fiz. Nauk, 1940, 24, 1, 11-2) (In Russian.) An account of its work. N. A.

METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

SA

A53
0

**ELECTRIC DISCHARGES AND RADIATIONS 537.5**

537.523 : 537.564 : 621.315.618.015.5 -- 82 2565

**Dielectric strength of gases.** GOKHBERG, B. M. *Bull. Acad. Sci. URSS, Sér. Phys.*, 10 (*No.* 4) 425-33 (1946) *In Russian.*—Measurements of the first Townsend ionization coefficient $\alpha$ for a number of gases of widely varying dielectric strengths show that the breakdown fields are those for which $\alpha$ reaches a value 0·0215 × the pressure (in mm Hg). The practical applications of gases with high breakdown strength are discussed. D. S.

537.525 : 542.921.9 *see Abstr.* 2682

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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GOKHBERG, B. M.

Mar 1947

USSR/Insulators - Gas
Sulphur Hexafluoride

"Elegas - Electric Gas-insulators," B M Gokhberg, 5 pp

"Elektrichestvo" No 3

The most suitable gas for insulating purposes is sulphur hexafluoride, termed an "elegas." Possibilities of using the "elegas" in high-voltage technology are [illegible]

2T26

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

USSR/Electricity
Condensers
Dielectrics

Mar 49

PA 38/49T20

"Gas-Filled Condensers," Prof B. M. Gokhberg, Dr Phys.-Math Sci, Inst Phys Problems, Acad Sci USSR, 4 pp

"Elektrichestvo" No 3

Condensers with gas insulation, having almost complete absence of dielectric losses, have great potentialities for use in high-frequency technique. Discusses studies of dielectric strength of various gaseous compounds at

38/49T20

USSR/Electricity (Cont'd)

Mar 49

Leningrad Physicotech Inst, Acad Sci USSR, where special attention was paid to sulfur hexafluoride, called "elegaz." Discusses condensers of constant and alternating capacity, and concludes that use of gas-filled condensers is especially efficient in high-frequency technology, and in the medium-wave range. Gives two illustrations of condensers.

38/49T20

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

HOCHBERG, B. M.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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300

Electrostatic h.v. generator with a grounded metal axle. [illegible] A.F., AND HOCHBERG, B.M. J. Phys., U.S.S.R., [illegible] The construction of a proposed h.v. electrostatic generator is described. The rotor discs are the same as those described in a previous paper [illegible] but the axle is of metal and is earthed, 2 terminals being provided for potentials + 7/2 and — 7/2. Instead of high-resistance voltage distributors it is proposed to use thin poorly-conducting layers, both on the generator discs and on the surface of the h.v. terminals.

A.W.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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**High voltage cable with "elegas."** B. M. GOKHBERG and N. M. REINOV. *Doklady Akad. Nauk S.S.S.R.*, 1950, **70**, 817–8; *Chem. Abs.*, 1950, **44**, 8505. Experimental study of lead-covered, gas filled, 3-strand 36 kV. cables filled with nitrogen, carbon dioxide, and sulphur hexafluoride ("elegas") showed that sulphur hexafluoride at 0.5 atm. is more effective in retarding ionisation than is nitrogen or carbon dioxide at 2.5 atm. Puncturing of the cables took place in about one hour at 100 kV. The pressure of nitrogen did not noticeably decrease from an initial value of 3 atm. during 24 hours in a sealed cable with end couplings.

60U2121.3

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000513610001-2

USSR/Physics - New Equipment
Elegas

21 Feb 50

"A Variable Gas-Filled Condenser (Capacitor) Under Pressure," B. M. Gokhberg, N. M. Reynov, Leningrad Physicotech Inst, Inst of Phys Problems, Acad Sci USSR

"Dok Ak Nauk SSSR" vol LXX, No 5, pp 1005-1006

Condenser is filled with $N_2$ and elegas ($SF_6$), and receives up to 2,000 kv-amp for peak voltages up to 32 kv. Maximum capacity is about 1,000 mmfd. Condenser is mounted in tank. Its high-tension output consists of two hemispheres, one under pressure and the other merely holding output lead. Submitted 10 Dec 49 by Acad A. F. Ioffe.

165T71

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2

USSR/Physics - Helium
Low Temperature

1 Mar 50

"Electrical Puncture (Rupture) in Pure Helium at Low Temperatures," B. M. Gokhberg, M. F. Bukhina, Inst of Phys Problems, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXI, No 1, pp 27-28

Gives direct proportionality between disruptive voltage and density of He gas for various low temperatures 4-20° K, e.g., rupture voltage is 10 kv for density of 16 g/l. Similarly, gives dependence (direct proportionality) of rupture voltage upon gas pressure for various low temperatures

[redacted]

165T74

USSR/Physics - Helium (Contd)

1 Mar 50

2 to 200 K, e.g., at 4.20 K rupture voltage is 10 kv for 800 mm/Hg pressure. Thus electrical strength of helium is about 100 times less than for various other gases. Submitted 14 Dec 49 by Acad S. I. Vavilov.

165T74

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# USSR.

537.521

2450. Investigation of the impulse breakdown of gases and the velocity of development of electron showers. B. M. Gokhberg, I. S. Stekolnikov and A. Z. Efendiev. *Dokl. Akad. Nauk SSSR*, 87, No. 1, 29–32 (1952) *In Russian*.

An experimental investigation on the way in which the striking potential for a gas depends on both the pressure and the duration of the electrical impulse when its duration is of the order of $10^{-6}$ sec. Experiments on air and $SF_6$ show that below a certain impulse duration no discharge occurs and that this time is a linear function of the plate separation; this is explained in terms of the time needed for an electron shower to form and hence a velocity of development can be calculated. It is shown that this velocity is a linear function of the electric field per unit pressure. The recorded velocities of shower formation are of the order of $10^7$ cm/sec.

J. M. HOUGH

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOLDBERG, B. M.

USSR/Electricity - Generators Jun 53
Nuclear Physics - Particle Accelerators

"Some Uses for Electrostatic Accelerators of Charged Particles (A Survey)," L.A. Goncharskiy, Cand Tech Sci

Elektrichestvo, No 6, pp 82-83

Discusses expanded usefulness of low-power electrostatic generators as low-power current sources from hundreds of kv to several mv on basis of 3 Russian, 5 English-language sources. Notes prospects for use of small charged Hg droplets as elec charge carriers,

268T59

increase of voltages to over 10 mv. Mentions advantages, disadvantages of hard x-rays from electrostatic generators as compared with tube-generated x-rays in therapy, industrial defectoscopy, applications, to disinfection, sterilization of foods. States $SF_6$ (elegas) was developed by B.M. Gokhberg and assoc in course of search for gas to use in electrostatic generators.

268T59

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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Gokhberg, B. M.

USSR/ Physics - Accelerated-ion generator

Card 1/1 Pub. 22 - 14/52

Authors : Baev, B. V.; Vorotnikov, P. Ye.; Gokhberg, B. M.; Sidorov, N. I.; Shuf, A. V.; and Yon'kov, G. B.

Title : A high-voltage electrostatic generator in a compressed gas

Periodical : Dok. AN SSSR 101/4, 637-639, Apr 1, 1955

Abstract : A description of a high-voltage electrostatic generator of the Van de Graaf type is presented. The generator is operated at a gas mixture (nitrogen and $CO_2$) compressed up to 8 atmospheres, and it supplies 2·8 Mv energy. Due to a good focusing device, a narrow (1 mm) beam of ions with 80 mu a current can be obtained at the out-put of the generator. Two USSR references (1955). Diagram.

Institution : Acad. of Sc., USSR, S. I. Vavilov Inst. of Physical Problems

Presented by: Academician A. P. Alexandroff, November 17, 1954

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Gokhberg, B. M.

USSR/ Physics - Ion accelerators

Card 1/1 Pub. 22 - 12/47

Authors : Brovchenko, V. G.; Gokhberg, B. M.; and Morozov, V. M.

Title : Stabilization of the energy of ions accelerated with a high voltage electrostatic generator

Periodical : Dok. AN SSSR 101/6, 1023 - 1025, Apr. 21, 1955

Abstract : A device and the method of its operation in stabilizing the energy of ions accelerated with a high voltage electrostatic generator are described. The energy stabilization is accomplished by the voltage stabilization of the device (ion accelerator). It was determined that the voltage of the accelerator deviates not more than 0.025%. One USSR reference (1955). Diagram.

Institution : Acad. of Sc., USSR, S. I. Vavilov Institute of Physical Problems

Presented by: Academician A. P. Aleksandrov, November 17, 1954

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

USSR/ Physics - Electrostatic generators

Card 1/1 Pub. 22 - 12/59

Authors : Gorlov, G. V.; Gokhberg, B. M.; Morozov, V. M; and Otrosh-chenko, G. A.

Title : A small electrostatic generator in a condensed gas

Periodical : Dok. AN SSSR 102/2, 237-239, May 11, 1955

Abstract : A description of a small electrostatic generator is presented. One USSR reference (1955).

Institution : Acad. of Sc., USSR, Institute of Physical Problems imeni S. I. Vavilov

Presented by : Academician A. P. Aleksandrov, November 17, 1954

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GORHBERG B. M.

19

V Measurement of the $Li^{6}$ $(n,\gamma)He^{4}$ cross section for neutrons with energies from 9 to 700 e.kv. [illegible] Gorlov, [illegible] Gokhberg, V. M. Morozov, and G. A. Otroshchenko. [illegible] Phys. Doklady 1, 705-7(1953)(English translation); Doklady Akad. Nauk S.S.S.R. 111, 701-[illegible]; cf. U.S. Atomic Energy Comm. ARCU-2040(1952).—The resonance peak in the absorption cross section, $\sigma$, of $Li^{6}$ for the $(n,\gamma)$ reaction was investigated for monoenergetic neutrons provided by the angular selection of neutrons produced in the proton bombardment of T. Relative values of $\sigma$ cr. neutron energy, $E_n$, were measured by means of a small ionization chamber contg. helical electrodes coated with $LiF$ (Li enriched to 92% $Li^{6}$), placed on a rotatable optical bench that permitted ingress of neutrons at an angle between 0 and 170° to the proton beam. The measurements indicated that $\sigma$ reached a max. when $E_n$ = 205 e.kv. Abs. measurements of $\sigma$ were made at this $E_n$ and also at 100 e.kv. by means of a flat ionization chamber contg. parallel plates coated with the same $LiF$. Values for $\sigma$ of 3.4 ± 0.3 and 0.85 b. at 205 and at 100 e.kv., resp., were obtained. These show that the resonance is due primarily to a $p$-wave interaction of neutrons with the $Li^{6}$ nucleus. James H. Pannell

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

Gorlov, G.V.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1346

AUTHOR GORLOV, G.V., GOCHBERG, B.M., MOROZOV, V.M., ŠIGIN, V.A.

TITLE The Angular Distribution of the Neutrons Produced on the Occasion of the Reaction $T(p,n)He^3$.

PERIODICAL Žurn.techn.fis, 26, fasc. 5, 985-989 (1956)
Issued: 6 / 1956 reviewed: 10 / 1956

This angular distribution was measured for proton energies of 1200, 1400 and 1600 keV. The protons were produced by means of an electrostatic generator and after passing through a 90 degrees magnetic analyzer they were directed upon a tritium target. The system for the voltage stabilization of the generator warrants a constancy of the proton energy which is accurate up to $2.10^{-2}$%. A solid tritium target was used, and a long counter served as a detector. The proportionality counter had a firm covering of boron and was filled with a mixture of argon and methyl alcohol. Next, the problem of the sensitivity of the long counter with respect to neutrons with different energies is discussed in detail. With the help of the obtained characteristic of sensitivity it was possible to measure the angular distribution of neutrons with more than 25 keV with great accuracy, i.e. for all angles at proton energies of 1400 and 1600 keV and for angles below 152° (in the center of mass system) at 1200 keV. In the case of large angles and 1200 keV accuracy is considerably lower.
Angular distribution was measured inside a cabin of 3 x 3 x 2,5 m, the walls of which were coated with a mixture of paraffin and borax. In the center of the cabin was the tritium target. The long counter was located at the distance of

GOKHBERG, B. M.

3584

THE FULL EFFECTIVE CROSS SECTION FOR THE INTERACTION OF NEUTRONS WITH $Li^6$ AND $Li^7$ NUCLEI IN THE ENERGY RANGE FROM 10 TO 450 KEV. (L. V. Gorlov, B. M. Gokhberg, V. M. Morozov, and G. A. Obrezhchenko. Doklady Akad. Nauk S.S.S.R. 110, 963-5(1956) Oct. 21. (In Russian)

Results of the experiments showed the full effective cross section for $Li^7$ reached the maximum value $\sigma_t^{max}$ = 7.0 ± 0.2 barns at $E_{res}$ = 275 kev; for $Li^6$ the $\sigma_t^{max}$ = 8.5 ± 0.2 barns at $E_{res}$ = 285 kev. The increase in the full effective cross sections of neutrons in small energy ranges has been explained by the reaction $Li^6(n,\alpha)He^4$. Tabulations are given for neutron energy values showing the relation of the energy to the thickness of the tritium target and to the angular distribution of neutrons leaving the target and captured in a recording counter. The tables of $Li^6$ and $Li^7$ full effective cross sections as well as the full cross section curve made in relation to the energies of neutrons are presented. (R.V.J.)

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GORHBERG, B. M.

Phys

✓Angular distribution of neutrons from the reaction $T(p,n)He^{3+}$ [illegible] G. V. Gorlov, B. M. Gorhberg, V. M. Morozov, and V. A. Sulgin. *Soviet Phys. Tech. Phys.* 1, 964-8(1957)(English translation) — See C. 4, 50, 15201d.

—B. M. S.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1954

AUTHOR GORLOV, G.V., GOCHBERG, B.M., MOROZOV, V.M., OTROŠČENKO, G.A.

TITLE Measuring the Cross Section of the Reaction $Li^6(n,t)He^4$ in the Interval of Neutron Energies of from 9 to 700 keV.

PERIODICAL Dokl. Akad. Nauk 111, fasc. 4, 791-794 (1956)
Issued: 1 / 1957

The authors carried out these measurements at the beginning of 1955 following measurements of the total cross section of the interaction between monoenergetic neutrons and $Li^6$- and $Li^7$-nuclei. The monoenergetic neutrons were obtained in the aforementioned energy interval from the reaction $T(p,n)He^3$. The tritium was contained in the titanium-cover of a molybdenum target. Measurements were carried out in a 3 x 3 x 2,5 m cabin the walls of which consisted of a mixture of paraffin and boron. At from 0 to 80° the background amounts to not more than some percents of the primary neutron flux. At large angles ( > 140°) the background attained a noticeable part (up to 60%) of the primary neutron flux. For measuring the relative course taken by the cross section of the reaction $Li^6(n,t)He^4$ the authors constructed a spiral-shaped ionization chamber with small dimensions. For the measuring of the absolute value of the cross section of $Li^6(n,t)He^4$ three plane ionization chambers are produced; they contain technical argon with a pressure of ~4 at, and have an operation voltage of ~ 350 V. The pulse characteristics of these plane ionization chambers were fully satisfactory. Carrying out measurements is discussed in short.

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S/638/61/001/000/004/056
B102/B138

AUTHORS: Gokhberg, B. M., Otroshchenko, G. A., Shigin, V. A.

TITLE: Fission cross section of $Th^{229}$, $Th^{230}$, and $Np^{237}$ and fission anisotropy of $Th^{230}$ and $Np^{237}$

SOURCE: Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 57-61

TEXT: Fission cross sections and anisotropy were measured around the fission threshold. The bombarding neutrons were produced in T(p,n) reactions. In bombardment with neutrons of $E_n < 350$ kev, $E_p$ was 1200 kev, for $E_n > 350$ kev $E_p$ was varied and only the neutrons emitted in the direction of the proton beam were used. Fission was determined by a plane-parallel ionization chamber connected with a recorder. The background due to fissions induced by scattered neutrons was determined by check measurements and did not exceed 10%. Anisotropy was also observed with an ionization chamber. The energy resolution was 30 kev. Results: $Th^{229}$. The

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specimen consisted of 60 μg $Th^{229}$ + 1.5 μg $Th^{232}$. $\sigma_f = F(E_n)$ decreases rapidly between 6 and 20 kev, it decreases 20% between 20 and 200 kev and reaches a minimum at 600 kev, after which it increases slightly again. $Th^{230}$. The exact isotopic composition of the specimen was not known. Only relative measurements were made up to $E_n$ = 1200 kev. The fission threshold is at $E_n$ = 670 kev. The local maximum at $E_n$ = 770 kev suggests the existence of a $Th^{231}$ level far removed from the higher levels. The results are in good agreement with those of the collective model of even even nuclei. $N^{237}$. The specimens contained practically no admixtures. Between 12 and 150 kev $\sigma_f$ is almost constant (~20 mb), then it rises almost linearly and tending to saturation a bit beyond 1000 kev. The anisotropy $\sigma_f(0°)/\sigma_f(90°)$ was also measured as a function of $E_n$. Between 700 and 1000 kev it decreases from 2 to 1.2 for $Th^{230}$, then rises again and at 1200 kev reaches 1.4. The existence of a maximum near the threshold is in accordance with the collective model. The anisotropy in the range of this maximum is, however, in contradiction to the model given in Ref. 2. In $Np^{237}$ the anisotropy was only measured from $E_n$ = 350 kev.

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B102/B138

Fission cross section of

It rises from 1.0 to 1.2 when $E_n$ is increased to 1500 kev. This slight dependence is due to $Np^{237}$ being an odd-even nucleus with 7/2 spin. There are 3 figures and 3 non-Soviet references. The three references to English-language publications read as follows: Ref. 1: Hjill D. L. and Wheeler J. A. Phys. Rev., 89, 1102, 1953; Ref. 2: Wilets L. and Chase D. M. Phys. Rev., 103, 1296, 1956; Ref. 3: Henkel R. L. and Bralley G. E. Phys. Rev., 103, 1292, 1956.

ASSOCIATION: Institut atomnoy energii AN SSSR (Institute of Atomic Energy AS USSR)

Card 3/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

21(7) SOV/89-6-4-8/27

AUTHORS: Gorlov, G. V., Gokhberg, B. M., Morozov, V. M., Otroshchenko, G. A., Shigin, V. A.

TITLE: The Fission Cross Sections for $U^{233}$ and $U^{235}$ Under the Action of Neutrons With Energies From 3 to 800 kev (Sechenija deleniya $U^{233}$ i $U^{235}$ pod deystviyem neytronov s energiyey ot 3 do 800 kev)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 4, pp 453-457 (USSR)

ABSTRACT: The neutrons were obtained from the $T(p,n)He^3$-reaction, the proton energy amounting to 1200, 1400 and 1600 kev. The measuring chamber, the construction of the target, the neutron detector, and measurement of the angular distribution of the T(p,n)He-reaction are described by reference 2. Determination of the dependence of the fission cross section on neutron energy was carried out in two stages. First, only the relative course of fission cross section dependence was determined. Next, the absolute value of $\sigma_f$ for 270 kev neutrons was measured, and with this reference value the relative curves were re-calculated. Results are graphically represented and show the following limits:

Card 1/3

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SOV/89-6-4-5/27

The Fission Cross Sections for $U^{233}$ and $U^{235}$ Under the Action of Neutrons With Energies From 3 to 800 kev

| $E_n$ | $\sigma_f(U^{235})$ | $\sigma_f(U^{233})$ |
|---|---|---|
| 3.4 kev | 4.8 b | 7.5 b |
| 780 kev | 1.05 b | 1.9 b |

Accuracy of neutron energies at $E_p$ = 1700 kev

| | | | | |
|---|---|---|---|---|
| $E_n$ = 3.4 kev | ± 0.8 kev | for $U^{235}$ | ± 0.7 kev | for $U^{233}$ |
| 200 kev | ± 28 kev | | ± 17 kev | |
| 340 kev | ± 13 kev | | ± 9.5 kev | |

Accuracy of neutron flux measurement: ~2-3% (at neutron energies of 9 and 3.4 kev it however amounted to 6 and 14% respectively). Accuracy of the measurement of the relative course of the fission cross section curve: ~4% for $U^{235}$ and ~6% for $U^{233}$ (except in the case of neutron energies of 3.4 kev - 16%, 9 kev - 9%, 30 kev - 6%, for $U^{235}$ and $U^{233}$ correspondingly 19, 11, and 9%). Sum errors in absolute $\sigma_f$-determination: $U^{235}$ ~ 7%, $U^{233}$ ~ 8%.

Card 2/3

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The Fission Cross Sections for $U^{235}$ and $U^{235}$ Under the Action of Neutrons With Energies From 3 to 300 kev SOV/89-6-4-8/27

The results obtained agree well with previously obtained data, but it must be born in mind that the present work was carried out already in 1953-1954. There are 3 figures and 5 references, 4 of which are Soviet.

SUBMITTED: September 25, 1958

Card 3/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

~~21 (8)~~ 24.6600 66160

AUTHORS: Gokhberg, B. M., Otroshchenko, G. A., Shigin, V. A. SOV/20-128-5-12/67

TITLE: Cross Section of $Th^{229}$ Fission

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 5, pp 911-912 (USSR)

ABSTRACT: The authors investigated the dependence of the cross section of $Th^{229}$ fission by means of neutrons having an energy of 6-1200 kev. The neutrons were produced by the T(p,n) reaction by means of an electrostatic generator. A proton beam having an intensity of $\sim 40\mu a$ struck a tritium target 12 mm in diameter. The neutron fluxes emitted by the target were measured with a long boron counter of the Mac Kibben type. Neutron fluxes emitted by the target in the direction of the proton beam were used to measure $> 350$ kev neutrons. The neutron energies were varied by changing the energies of the neutrons bombarding the target. The background amounted to $\sim 3.5\%$ of the direct neutron flux. The background component was higher when weaker neutron fluxes were applied. The fission of $Th^{229}$ nuclei was measured in a plane parallel ionization chamber, the pulses of which were recorded by an

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Cross Section of $Th^{229}$ Fission SOV/20-128-5-12/67

electronic recorder. Nickel windows 0.5 mm thick were soldered to the front plates of the chamber. A thorium layer approximately 0.8 mg/cm$^2$ thick and having a diameter of 17 mm was attached to the high-voltage electrode of the chamber. The thorium had the following isotope composition: 60 μg of $Th^{229}$ and 1.5 mg of $Th^{232}$. The chamber was filled with 65% argon and 35% methane (2 atm pressure), and mounted on a turntable. The resolution with reference to the energy varied from 2 kev for measurements of 6 kev neutrons to 20 kev for measurements of ≥ 350 kev neutrons. The number of fissions on the scattered neutrons was determined from deviation of chamber counts from the $1/r^2$-function at different distances between chamber and target. Results of the experiment are illustrated in a figure. The course of the cross section curve differs greatly from the typical dependence of the fission cross section on the energy of the neutrons. This holds for nuclei split by thermal neutrons. The cross section decreases by 20% altogether in the interval 20-200 kev, thereafter diminishes greatly toward a minimum at 600 kev, and then increases again by 25%. Unfortunately, measurements at energies above 1200 kev were

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Cross Section of $Th^{229}$ Fission SOV/20-128-5-12/67

not possible owing to the large content of $Th^{232}$. There is 1 figure.

ASSOCIATION: Institut atomnoy energii Akademii nauk SSSR (Institute of Atomic Energy of the Academy of Sciences, USSR)

PRESENTED: June 2, 1959, by I. V. Kurchatov, Academician

SUBMITTED: April 9, 1959

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6, 2002 CIA-RDP86-00513R000515610001-2

66412

SOV/20-128-6-16/63

24.6600

AUTHORS: Gokhberg, B. M., Otroshchenko, G. A., Shigin, V. A.

TITLE: Effective Cross Sections and Anisotropy of $Np^{237}$ and $Th^{230}$ Fissions

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 6, pp 1157-1159 (USSR)

ABSTRACT: It was a matter of interest to measure the effective cross sections and anisotropy of nuclear fission in the immediate proximity of the threshold value. Such measurements had hitherto been made only for $U^{238}$ and $Th^{232}$. The authors investigated nuclei $Np^{237}$ and $Th^{230}$. Experimental conditions and technique of measuring the fission cross sections had already been investigated earlier (Ref 3). The layers of fissioning substances had a thickness of ~0.5 mg/cm$^2$. Further experimental conditions are mentioned. 2 diagrams illustrate the dependence of the fission cross section and the ratio of differential fission cross sections $\sigma_f(0^\circ)/\sigma_f(90^\circ)$ on the energy of neutrons. Because of the small effective cross section of reaction, anisotropy of

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SOV/20-128-6-16/63

Effective Cross Sections and Anisotropy of $Np^{237}$ and $Th^{230}$ Fissions

$Np^{237}$ fission was only measured beginning with a neutron energy of 350 kev. Owing to the lack of sufficiently reliable data concerning the isotopic composition of the $Th^{230}$ sample, measurements could not be made on $Th^{230}$ above an energy of 1200 kev, where impurity $Th^{232}$ begins to make its action strongly felt. Owing to this reason it was also impossible to determine the absolute value of the fission cross section of $Th^{232}$ by this experiment. For $Np^{237}$, fission cross section remains almost constant in the range of energies of from 12 to 100 kev, i.e. within a tenfold change of energy (~ 26 mb), and a threshold value of reaction is evidently lacking. This fact is a little surprising, as seen from the viewpoint of the fission model used today. On the other hand, the plane course of the cross section and the slight anisotropy of fission are evidently in good agreement with the fact that the original $Np^{237}$ nucleus is odd - even and that it exhibits a high spin. The $Np^{238}$ nucleus originating from the capture of the neutron is odd - odd, i.e.

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Effective Cross Sections and Anisotropy of $Np^{237}$ and $Th^{230}$ Fissions

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it is highly excited, namely with a large moment. This leads to the mentioned character of dependence of fission characteristics on the neutron energy. Fission cross section of $Th^{230}$ versus energy of neutron function is likewise in good agreement with the conclusions derived from the "collective" model with respect to the even - even nucleus. Fission of $Th^{230}$ has its threshold value at 650 kev, with the cross section increasing strongly beyond that value. At the beginning of the general cross section rise a local maximum is clearly noticeable. This is the reason why the $Th^{231}$ nucleus may have a level at a great distance from the other higher levels. Anisotropy of fission in the range of this maximum, however, is the opposite to the one which is presupposed by the collective model for an even - even nucleus. Further investigations concerning the character of $Th^{230}$ anisotropy and especially, measurement of the total angular distribution of the fission fragments, are yet required to clarify this problem. There are 2 figures and 4 references, 1 of which is Soviet.

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SOV/20-128-6-16/63

Effective Cross Sections and Anisotropy of $Np^{237}$ and $Th^{230}$ Fissions

ASSOCIATION: Institut atomnoy energii Akademii nauk SSSR (Institute of Atomic Energy of the Academy of Sciences, USSR)

PRESENTED: June 2, 1959, by I. V. Kurchatov, Academician

SUBMITTED: April 9, 1959

Card 4/4

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

PHASE I BOOK EXPLOITATION SOV/4395

Gokhberg, Boris Mikhaylovich, and Gleb Borisovich Yan'kov

Elektrostaticheskiye uskoriteli zaryazhennykh chastits (Electrostatic Accelerators of Charged Particles) Moscow, Atomizdat, 1960. 50 p. 6,000 copies printed.

Ed.: A. F. Alyab'yev, Tech. Ed.: N. A. Vlasova.

PURPOSE: This book is intended for atomic researchers, engineers, and students interested in methods for acceleration of charged particles and in the problems of their utilization for studies of the atomic nucleus.

COVERAGE: The book deals with accelerators which use electrostatic generators to produce high voltage. The greater part is a description of modern accelerators with belt-type electrostatic generators in compressed gas. It includes an analysis of the operation of their elements and of characteristics which determine the energy and stability of the beam of accelerated ions. No personalities are mentioned. There are 34 references: 16 Soviet, 15 English, and 3 French.

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Nauchnaya konferentsiya... S/089/62/013/006/019/027
B102/B186

design of 30-Mev electron linear accelerator; Ye. G. Pyatnov, A. A. Glazkov, V. G. Lopato, A. I. Finogenov, G. N. Skepskiy, V. D. Seleznev, experimental characteristics of low-energy electron linear accelerators; G. A. Zeytlenk, V. M. Levin, S. I. Piskunov, V. L. Smirnov, V. K. Khokhlov, radiocircuit parameters of ЛУЭ (LUE)-type accelerators; G. A. Tyagunov, O. A. Val'dner, B. M. Gokhberg, S. I. Korshunov, V. I. Kotov, Ye. M. Moroz, accelerator classification and terminology; O. S. Milovanov, V. B. Varaksin, P. R. Zenkevich, theoretical analysis of magnetron operation; A. G. Tragov, P. R. Zenkevich, calculation of attenuation in a diaphragmated waveguide; Yu. P. Lazarenko, A. V. Ryabtsev, optimum attenuation length for linear accelerator; A. A. Zhigarev, R. Ye. Yeliseyev, review on trajectographs; I. G. Morozova, G. A. Tyagunov, review on more than 500 ion sources; M. A. Abroyan, Y. L. Komarov, duoplasmatron-type source; V. S. Kuznetsov, A. I. Solnyshkov, calculation and production of intense ion beams; V. M. Rybin (Ye. V. Armenskiy), inductive current transmitters of high sensitivity; V. I. Koroza, G. A. Tyagunov, kinetic description of linear acceleration of relativistic electrons; A. D. Vlasov, phase oscillations in linear accelerators; E. L. Burshteyn, G. V. Voskresenskiy, beam field effects in the waveguide of an electron linear accelerator; R. S. Bobovikov,

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GOKHBERG, B.M., doktor fiziko-matem. nauk, prof., otv. red.;
GRIGOR'YEV, Ye.N., red.

[Charged particle accelerators. Fundamental concepts. Terminology] Uskoriteli zariazhennykh chastits. Osnovnye poniatiia. Terminologiia. Moskva, Izd-vo AN SSSR, 1963. 23 p. (Sbornik rekomenduemykh terminov, no.65) (MIRA 17:1)

1. Akademiya nauk SSSR, Komitet nauchno-tekhnicheskoy terminologii.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

ACCESSION NR: AT4025309 S/0000/63/000/000/0193/0198

AUTHORS: Kikoin, I. K.; Gokhberg, B. M.; Mal'tsev, V. V.; Otroshchenko, G. A.; Knyazyatov, A. S.

TITLE: Probing a deuterium plasma with a tritium beam

SOURCE: Diagnostika plazmy* (Plasma diagnostics); sb. statey. Moscow, Gosatomizdat, 1963, 193-198

TOPIC TAGS: deuterium, tritium, plasma density, plasma electromagnetic property, neutron yield, discharge plasma

ABSTRACT: The method is based on the registration of the number of reactions between the incident tritium nuclei and the deuterium nuclei of the plasma, making it possible to investigate the variation of the deuterium density independently of the degree of ionization of the plasma and of the impurity contents. The investigation was made in the "Igla" toroidal chamber (large diameter 750 mm,

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ACCESSION NR: AT4025309

small diameter 200 mm, maximum capacitor bank energy 35 kJ, maximum discharge current 100 kA). The ion current and the position of the beam were monitored with thermocouples distributed over the channel. The tritium beam source is described elsewhere (I. I. Afanas'yev et al. "Atomnaya energiya" v. 13, No. 8, 135, 1962). The investigation of the neutron yield from the ion collector located on the inside of the discharge chamber has made it possible to draw certain conclusions concerning the absorption of the working gas (deuterium) by the walls of the discharge chamber. However, in the case of high-frequency ionization of the gas (preliminary ionization) the walls are capable of absorbing a very large amount of gas. Investigations of the variation of the deuterium plasma density during the discharge time show that the plasma density increases by several times during the discharge, as a result of interaction between the plasma and the walls. When deuterium is used in the discharge chamber, the yield of neutrons decreases immediately after the discharge, compared with the yield in the absence of discharge. In the case of hydrogen, the op-

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ACCESSION NR: AT4025309

posite takes place. A control experiment has shown that the increase in the neutron yield is not due to a displacement of the ion beam during the discharge. Orig. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 19Oct63 DATE ACQ: 16Apr64 ENCL: 00

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

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

L 16795-63 EWT(1)/EWG(k)/EWP(q)/EWT(m)/BDS/ES(w)-2 AFFTC/ASD/ ESD-3/AFWL/IJP(C)/SSD Pz-4/Pab-4/Po-4/Pi-4 JD/AT

ACCESSION NR: AP3007057 S/0056/63/045/003/0428/0436

AUTHOR: Gokhberg, B. M.; Kikoin, I. K.; Knyazyatov, A. S.; Mal'tsev, [redacted] Petrushchenko, G. A.

TITLE: Use of tritium ion beam to determine deuteron plasma density

SOURCE: Zh. eksper. i teoret. fiziki, v. 45, no. 3, 1963, 428-436

TOPIC TAGS: deuteron plasma density, toroidal discharge chamber, plasma density measurement, plasma density, plasma

ABSTRACT: A method for investigation of a deuteron plasma by means of a beam of tritium ions introduced into the plasma is described. The method is based on recording the secondary particles resulting from reaction $D(t,n)He^4$, caused by the collision of accelerated tritium ions with the plasma particles. The energy of the injected tritons was approximately 160 Kev, and the energy of the neutrons and alpha particles produced, 14 and 3.5 Mev, respectively. The

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ACCESSION NR: AP3007057

investigating device was a toroidal discharge chamber in a weak longitudinal magnetic field. The principal diameter of the toroid was 750 mm, the inner diameter of the discharge chamber, about 210 mm, the intensity of the magnetic field, 200—700 oe, and the maximum discharge current, about 100 kamp. The discharge time in the chamber was approximately 600 μsec, the pulse duration of the ion source, approximately 2000 μsec, and the time delay between the start of the discharge in the chamber and the start of the pulse of the source current, 500—1000 μsec. Measurements were carried out with the discharge chamber filled with deuterium and, as a control, with hydrogen. The average plasma density over the whole path of a tritium beam was determined. Although the plasma density is greater after discharge, the increase cannot be regarded as a result of plasma compression but merely as result of the liberation of gas from the chamber walls during discharge. Orig. art. has: 8 figures.

ASSOCIATION: none
SUBMITTED: 07 Mar 63 DATE ACQ: 08Oct63 ENCL: 00
SUB CODE: PH NO REF SOV: 002 OTHER: 000
Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

SOMINSKIY, Monus Samuilovich; GOKHBERG, B.M., prof., otv. red.

Abram Fedorovich Ioffe. Moskva, Nauka, 1964. 642 p.
(MIRA 17:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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GOKHBERG, I. Ts.

Gohberg, I. On linear equations in Hilbert space. Doklady Akad. Nauk SSSR (N.S.) 76, 9–12 (1951). (Russian)

This paper extends previous results of Nikol'skiĭ [Izvestiya Akad. Nauk SSSR, Ser. Mat. 7, 147–56 (1943); these Rev. 5, 187] and Mihlin [Uspehi Matem. Nauk (N.S.) 3, no. 3(25), 29–112 (1948); these Rev. 10, 305] on the formulation in abstract spaces of certain results of integral equations. It is concerned particularly with finding necessary and sufficient conditions that a bounded linear operator $A$ in a Hilbert space $H$ satisfy the following conditions: $\alpha$) the equation $A\varphi=0$ has a finite number of linearly independent solutions; $\beta$) the operator $A$ is normally soluble (i.e. the set $\{A\varphi: \varphi\epsilon H\}$ is the orthogonal complement of the set $\{\psi; A^*\psi=0\}$, $A^*$ the adjoint of $A$). *J. V. Wojtaszczyk.*

Source: Mathematical Reviews, Vol 13 No. 1

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GOKHBERG, I. Ts.

**Gohberg, I. C.** On linear equations in normed spaces. Doklady Akad. Nauk SSSR (N.S.) 76, 477–480 (1951). (Russian)

The author generalizes a theorem of Nikol'skiĭ [reference cited in preceding review]. Let $A$ be a bounded linear operator on a complex normed linear space $R$, and $\bar{A}$ the adjoint operator on $\bar{R}$. Then the following statements are equivalent. (1) The equations $Ax=0$ and $\bar{A}X=0$ have a finite number of linearly independent solutions, $\alpha(A)$ and $\beta(A)$ respectively, $A$ is normally soluble (see the preceding review for definition, with some necessary rephrasing for a normed space), and $\alpha(A)-\beta(A)=\kappa(A)\equiv 0$ ($\equiv 0$). (2) $A$ can be represented as $A=D+T$ where $D$ has a left (right) inverse, $\bar{D}X=0$ ($Dx=0$) has exactly $-\kappa$ ($\kappa$) linearly independent solutions, and $T$ is completely continuous. (3) $A=D+K$ with $D$ as in (2) and $K(\bar{K})$ finite-dimensional. (4) $\bar{A}=D^*+K^*$, where $D^*$ has a right (left) inverse, $D^*X=0$ ($\bar{D}^*\Psi=0$) has $-\kappa$ ($\kappa$) linearly independent solutions, and $K^*(\bar{K})$ is finite-dimensional. (5) $\bar{A}=D^*+T^*$, $D^*$ as in (4) and $T^*$ completely continuous. This generalization of Nikol'skiĭ's theorem is sufficiently general to apply to certain classes of singular integral equations [cf. F. Noether, Math. Ann. 82, 42–63 (1921)]. *J. V. Wehausen* (Providence, R. I.)

Source: Mathematical Reviews, Vol. 13 No. 1

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GOKHBERG

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Source: Mathematical Reviews, Vol 13, No. 1

**Gohberg, I. C.** **On linear operators depending analytically on a parameter.** Doklady Akad. Nauk SSSR (N.S.) **78**, 629–632 (1951). (Russian)

The first part of this paper generalizes results in the second part of the paper by Nikol'skiĭ cited in the third preceding review. Let $A_\lambda$ be a linear operator on a normed linear space $R$ with $A_\lambda$ a holomorphic function of $\lambda$ for $\lambda$ in some region of the complex plane. The "Fredholm region" for $A_\lambda$ is the set $\Phi_{A\lambda}$ of the values $\lambda$ for which $T_\lambda = I - A_\lambda$ can be written $T_\lambda = D + T$ (or $D + K$), where $D$ has an inverse, $T$ is completely continuous and $K(R)$ is finite-dimensional. Then $\Phi_{A\lambda}$ is open and can be decomposed into components: $\Phi_{A\lambda} = \sum_{i=1}^{\infty} \Phi_i$. Theorem 1. In each component $\Phi_i$ there exists an isolated set $F_i$ such that for $\lambda \epsilon \Phi_i - F_i$ the equation $(E - A_\lambda)x = 0$ has the same number of solutions; for $\lambda \epsilon F_i$, the equation has more solutions.

Consider now an operator $A_\lambda = E - \lambda U$, $U$ a bounded operator on $R$. The "Noether region" for $U$ is the set $N_U$ of values $\lambda$ for which $A_\lambda = D + T$, where $T$ is completely continuous and either $D$ has a left inverse and $DX = 0$ has a finite number of solutions, or $D$ has a right inverse and $Dx = 0$ has a finite number of solutions. Such operators have been characterized in each of the two papers reviewed above. The set $N_U$ may be decomposed into components: $N_U = \sum_{i=1}^{\infty} N_i$. Theorem 2. The index $\kappa(A_\lambda)$ [see the second preceding review for definition] is constant on each component $N_i$. Theorem 3. In each $N_i$ there is an isolated set $M_i$ such that $A_\lambda x = 0$ has the same number of solutions for each $\lambda \epsilon N_i - M_i$, but has more solutions than this for $\lambda \epsilon M_i$.

*J. V. Whiteman* (Providence, R. I.).

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GOKHBERG, I. Ts.

USSR/Mathematics - Singular Integral Equations Mar/Apr 52

"One Application of the Theory of Normed Rings to Singular Integral Equations," I. Ts. Gokhberg

"Uspekh Matemat Nauk" Vol VII, No 2, (48), pp 149-156

States that I. M. Gel'fand's theory of normed rings has received numerous applications. The author shows that this theory can be successfully utilized also in problems relating to singular integral eqs. Considers bound operators A of a certain type and conditions governing so-called regularization. Submitted 19 Jul 51.

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
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Mathematical Reviews
Vol. 14 No. 8
Sept. 1953
Analysis

Gahov, F. D. Concerning a note of I. C. Gohberg. Uspehi Matem. Nauk (N.S.) 7, no. 6(52), 181-182 (1952). (Russian)

The author criticises the paper of Gohberg [Uspehi Matem. Nauk (N.S.) 7, no. 2(48), 149-156 (1952); these Rev. 14, 54 which see for notations], and calls attention to his 1941 dissertation [Izvestiya Kazan. Fiz.-Mat. Obšč. (3) 14, 75-159 (1949); unavailable for review], to the work of D. I. Šerman [Akad. Nauk SSSR. Prikl. Mat. Meh. 12, 423-452 (1948); 15, 75-82 (1951); these Rev. 10, 305; 12, 832] and the (unavailable) dissertation of L. A. Čikin [Singular cases of Riemann's boundary problem and of singular equations, Kazan, 1952]. He states without proof a result that the singular operator $A$ is regularisable if $A\varphi(t)=g(t)$ is soluble, and this he considers a less restrictive result than Gohberg's that the non-vanishing of $a^2(t)-b^2(t)$ was not only sufficient but necessary when the regularising operator $M$ was to be bounded on $L_2$ into $L_2$. On the other hand, Gohberg did not require solubility, a term not precisely defined in the note under review. *F. V. Atkinson.*

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USSR/Mathematics - Operator Index Jul/Aug 53

"Index of Unbounded Operator," I. Ts. Gokhberg, Soroki, Moldavian SSR

Mat Sbor, Vol 33 (75), No 1, pp 193-198

Considers: a linear operator A that acts from a certain Banach space $E_1$ into a certain Banach space $E_2$; the region D(A) that defines A; the region R(A) of A's values. Assumes that the operators A possess the following properties: Ax=0 has a finite number of linearly independent solutions T(A) of measure a(A); the factor-space $E_2/\overline{R(A)}$ has finite measure

271T88

b(A); the form of A is closed (i.e. A is normally solvable). Demonstrates two theorems. Cites the related work of M. G. Kreyn and M. A. Krasnosel'skiy ("Stability of the Index of an Unbounded Operator," Mat Sbor, Vol 30 (72), 1952). Presented 1 Oct 52.

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GOKHBERG, I.S.

Gohberg, I. C. On systems of singular integral equations. Uč. Zap. Kišinevsk. Univ. 11 (1954), 55–60. (Russian)

The author considers the system of singular integral equations

$$(1)\quad \sum_{k=1}^{n}\left\{a_{jk}(t)\varphi_k(t)+\frac{b_{jk}(t)}{\pi i}\int_\Gamma \frac{\varphi_k(\tau)}{\tau-t}d\tau+T_{jk}\varphi_k\right\}=f_j(t),$$

where $\Gamma$ is a contour formed of one or several smooth closed nonintersecting curves, $a_{jk}(t)$ and $b_{jk}(t)$ are continuous functions and $T_{jk}$ are operators completely continuous in $L_2(\Gamma)$. There is introduced the space $L_2^{(n)}(\Gamma)$ whose elements are the $n$-tuples $\varphi=\{\varphi_1,\cdots,\varphi_n\}$ and with the scalar product defined by

$$(\varphi,\psi)=\sum_{k=1}^{n}\int_\Gamma \varphi_k(\tau)\bar{\psi}_k(\tau)|d\tau|.$$

The left side of (1) defines an operator $D$ bounded in $L_2^{(n)}(\Gamma)$.

Let $A$ and $B$ be matrices with elements $a_{jk}(t)$ and $b_{jk}(t)$ respectively. It is known that if $\det(A+B)$ and $\det(A-B)$ vanish nowhere on $\Gamma$, then F. Noether's theorems hold: 1) each of the equations $Du=0$ and $D^*u=0$ has a finite number of linearly independent solutions; 2) both equations are normally solvable. It is proved that vanishing of these determinants is not only sufficient but also necessary for Noether's theorems to hold. The proof is based on I. M. Gel'fand's theory of normed rings. *S. G. Mikhlin* (RZMat 1955, no. 5072).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

[illegible], I. Ts.

"Some New Questions in the General Theory of Linear Operators in Banach Spaces." Candidate [illegible], Chair of Mathematical Analysis, Leningrad State Pedagogical Institute [illegible] A. I. Gertsen, Leningrad, 1955. (KL, No 16, [illegible])

SO: Sum. No. 7[illegible], 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (1[illegible]).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515610001-2"

GOKHBERG, I. Ts.

USSR/ Mathematics - Topology

Card 1/1 Pub. 22 - 2/51

Authors : Gokhberg, I. Ts.

Title : About nulls and null elements of unlimited operators

Periodical : Dok. AN SSSR 101/1, 9-12, Mar 1, 1955

Abstract : A proof for a series of theorems dealing with nulls and null (zero) elements of unlimited operators is presented. The theorems, mainly have application in the studying of the Banach spaces. Nine USSR references (1936-1953).

Institution : State Pedagogical Institute, Bel'tsy

Presented by : Academician A. N. Kolmogorov, December 14, 1954

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GOKHBERG, I. TS.

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Gohberg, I. C. Some properties of normally soluble operators. Dokl. Akad. Nauk SSSR (N.S.) 104 (1955), 9–11. (Russian)

Let $A$ be a normally soluble linear operator on a Banach space $E$ into $E$, let $L(A)$ denote the set of $x \in E$ with $Ax=0$, $\alpha(A)$ the dimensionality of $L(A)$, and $I$ the identity operator. It is a question of what additional conditions ensure that $A-\lambda I$ is normally soluble and that $\alpha(A-\lambda I)=\text{const}=m<\infty$ in a complex $\lambda$-region of the form $0<|\lambda|<\rho$. Sets of conditions including the requirement $\alpha(A)<\infty$ have been given by previous writers, including the author [same Dokl. (N.S.) 101 (1955), 9–12, q.v. for further references; MR 17, 284]. Now given, restricting $E$ to be a Hilbert space and $A$ to be bounded, are the following weakened conditions: $A, A^2, \cdots, A^{k+1}$ are to be normally soluble, and $L(A^{n+1})\ominus L(A^n)$ is to be of dimension $m$ for $n\geqq k$. If the latter condition is strengthened to $L(A^{k+1})=L(A^k)$, then $A-\lambda I$ has a bounded left inverse for $0<|\lambda|<\rho$. In the reviewer's opinion the restriction to Hilbert space is avoidable.

*F. V. Atkinson* (Canberra).

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GOKHBERG, I. Ts.

Math

Gohberg, I. C. and Markus, A. S. On a characteristic property of the kernel of a linear operator. Dokl. Akad. Nauk SSSR (N.S.) 105 (1955), 893–896. (Russian)

Let $A$ be a closed operator on a Banach space, and $\Gamma$ a connected domain such that $A-\lambda I$ has a bounded inverse for $\lambda \in \Gamma$. The authors prove that, given $y$, the equation $Ax-\lambda x=y$ is solvable for all $\lambda$ if and only if $y$ is in the kernel of $A-\lambda_0 I$ for some $\lambda_0 \in \Gamma$. The kernel of an operator is defined as the intersection, over all positive $n$, of the ranges of $A^n$. The kernels of $A-\lambda I$ are the same for all $\lambda \in \Gamma$. If $y$ is not in the kernel, the equation $Ax-\lambda x=y$ is solvable for, at most, a set of isolated points in $\Gamma$. The authors state an extension of this result to operator functions $A_\lambda$ analytic on $\Gamma$. *D. C. Kleinecke.*

Markus, A. S. On a characteristic property of the kernel of a linear operator. Dokl. Akad. Nauk SSSR (N.S.) 105 (1955), 1144–1146. (Russian)

The results of the paper reviewed above are extended to the case where the range of $A-\lambda I$ is closed and the null space of $A-\lambda I$ is finite dimensional. *D. C. Kleinecke.*

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Ts.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/3 PG - 771
AUTHOR GOCHBERG I.Ts., MARKUS A.S.
TITLE On the stability of some properties of normally solvable operators.
PERIODICAL Mat.Sbornik,n.Ser. 40, 453-466 (1956)
reviewed 5/1957

Let A ba an additive closed operator in the Banach space E. Let $\vartheta(A)$ be its region of definition and R(A) its range of values. Let L(A) be the subspace of the solutions of Ax = 0. Let $\alpha(A)$ = dim L(A), let $\beta(A)$ = dim $E/\overline{R(A)}$ be the defect index of A. Let A be normally solvable, i.e. for the solvability of the equation Ax = y it is necessary and sufficient that l(y) = 0, where l is an arbitrary functional in E for which lA = 0. The pair of numbers $(\alpha(A), \beta(A))$ is called the defect characteristic (or d-characteristic) of A. If the d-characteristic is finite, then $\varkappa(A) = \alpha(A) - \beta(A)$ is called the index of the operator A. A linear bounded operator M is called regularizing for the operator A if for a completely continuous operator T and all $x \in \vartheta(A)$ holds:

$$MAx = x + Tx.$$

Theorem 1: Let the d-characteristic of the normally solvable operator A be finite. Let B be an arbitrary linear bounded operator, where $B^n$ is completely continuous for a certain natural n. Let for A exist a regularizing operator M such that MB - BM is completely continuous. Then A + B is normally solvable,

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has a finite d-characteristic and $\mathcal{H}(A + B) = \mathcal{H}(A)$
Theorem 2: Let A be normally solvable and have a finite d-characteristic, n be a natural number. Let an arbitrary linearly bounded operator B satisfy the condition $\|B^n\| < \varrho(n)$ and for A let exist the regularizing operator M, where MB - BM is completely continuous. Then A + B is normally solvable, has a finite d-characteristic and $\mathcal{H}(A + B) = \mathcal{H}(A)$.
Let K(A) be the subspace which is formed by the elements of the kernel of A, let $m(A) = \dim \left\{L(A) \cap K(A)\right\}$
Theorem 3: Let A be normally solvable, the d-characteristic be finite and $\mathcal{H}(A) = 0$, $m(A) = 0$. Then A + B is normally solvable too, its d-characteristic is finite and $\mathcal{H}(A + B) = m(A + B) = 0$ for every operator B commutating with A, for which for a natural n one of the conditions

$$\|B^n\| < \frac{1}{\|A_0^{-n}\|} \qquad \text{or} \qquad B^n \text{ completely continuous}$$

is satisfied.
Theorem 4: Let A be normally solvable, $m(A) = \alpha(A)$ finite. Then there exists a positive $\varrho$ such that for every linear bounded operator B, $\|B\| < \varrho$

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SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/1 PG - 758
AUTHOR GOCHBERG I.Z.
TITLE On the index, zero elements and elements of the kernel of an unbounded operator.
PERIODICAL Uspechi mat.Nauk 12, 1, 177-179 (1957)
reviewed 5/1957

The present paper contains a comprehension of well-known essential results on the index, zero elements and kernel elements of a closed linear operator with a direct region of definition.