

MOSKVIN, Boris Vladimirovich; SHAVERDOVA, A.I., red.; MANINA, M.P.,
tekh. red.

[To the icy heart of the Urals] K ledianomu serdtsu Urala.
Moskva, Izd-vo "Fizkul'tura i sport," 1961. 79 p.
(MIRA 15:2)

(Ural Mountain region--Tourism)

MOSKVIN, D.

Mr. D. Granik transgresses against the truth. Vop. ekon. no.11:150-
152 N '57. (MIRA 13:2)

(Russia--Economic conditions)

MOSEVIN, D.

Distribution of productive forces in the U.S.S.R. Vop. ekon.
no.12:155-164 D '59. (MIRA 12:12)
(Economic zoning)

SLAVIN, S.V., doktor ekonom.nauk; GRANIK, G.I., kand.ekonom.nauk; KUZAKOV, K.G., kand.ekonom.nauk; MIKHAYLOV, S.V., kand.ekonom.nauk; SHAPALIN, B.F., kand.geograf.nauk; KAMENITSKER, L.S., nauchnyy sotrudnik; MOSKVIN, D.D., nauchnyy sotrudnik; TYURDEKHEV, A.P., nauchnyy sotrudnik; LEDNITSOVA, N.A., inzh.; KOZLOV, B.K., kand.tekhn.nauk, starshiy nauchnyy sotrudnik; BRONSHTEYN, L.B., starshiy nauchnyy sotrudnik; BOVKUN, A.Ye.; VERSHININ, A.A., okhotoved; SERGEYEV, M.A., retsenzent; AGHARAT, G.A., kand.geograf.nauk, red.; PUZANOVA, V.F., kand.geograf.nauk; SHENKMAN, V.I., red.izd-va; BRUZGUL', V.V., tekhn.red.

[Problems in the development of the productive forces of Kamchatka Province] Problemy razvitiia proizvoditel'nykh sil Kamchatskoi oblasti. Moskva, 1960. 420 p. (MIRA 13:7)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. Sektor prirodnykh resursov i ekonomiki Severa. 2. Zaveduyushchiy Sektor prirodnykh resursov i ekonomiki Severa Soveta po izucheniyu proizvoditel'nykh sil AN SSSR (for Slavin). 3. Institut energetiki AN SSSR (for Kozlov). 4. Tikhookeanskiy rybnyy institut (TINRO) (for Bronshhteyn). 5. Starshiy ekonomist Kamchatskogo oblplana (for Bovkun). 6. Kamchatskoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta zhiivotnogo syr'ya i pushniny (for Vershinin).
(Kamchatka Province--Economic conditions)

MOSKVIN, D.

Practice of research coordination. Vop. ekon. no.3:151-152
Mr '61. (MIRA 14:3)

(Economic research)

KRIVCHENKO, S.; MOSKVIN, D.

An interpretation of the problem of the replacement of the labor force ("Labor supply of the U.S.S.R. and its utilization"; on the problem of the economic capacity of the country by A.D.Kuznetsov. Reviewed by S.Krivchenko, D.Moskvin). Vop.ekon. no.5:107-111 My '61. (MIRA 14:5)

(Labor supply)
(Kuznetsov, A.D.)

FEYGIN, Ya.G., doktor ekon. nauk; YANITSKIY, N.F., doktor geogr. nauk; ZHIRMUNSKIY, M.M., doktor geogr. nauk; ALAMPIYEV, M.P., doktor ekon. nauk; KOSTENNIKOV, V.M., kand.ekon. nauk; BUYANOVSKIY, M.S., kand. geogr. nauk; SHISHKIN, N.I., doktor geogr. nauk; MOSKVIN, D.D., kand.ekon. nauk; GURARI, Ye.L., kand.ekon.nauk; VETROV, A.S., kand.geogr. nauk; LISETSKAYA, A.P., red.; PONOMAREVA, A.A., tekhn. red.

[Methodological problems of economic geography] Metodologicheskie voprosy ekonomicheskoi geografii. Moskva, Ekonomizdat, 1962. 278 p. (MIRA 15:7)

1. Chlen-korrespondent Akademii nauk USSR i Institut ekonomiki Akademii nauk SSSR (for Feygin).
 2. Institut geografii Akademii nauk SSSR (for Yanitskiy, Zhirmunskiy, Buyanovskiy).
 3. Institut ekonomiki mirovoy sotsialisticheskoy sistemy Akademii nauk SSSR (for Alampiyev).
 4. Gosudarstvennyy nauchno-ekonomicheskiy sovet Soveta Ministrov SSSR (for Kostennikov).
 5. Nauchno-issledovatel'skiy institut truda Gosudarstvennogo komiteta Soveta Ministrov SSSR (for Shishkin).
 6. Institut ekonomiki Akademii nauk SSSR (for Moskvina).
 7. Orenburgskiy pedagogicheskiy institut (for Vetrov).
- (Geography, Economic--Methodology)

LOGINOV, V.; MOSKVIN, D.

Ensuring a labor force for the industries of the northeastern
U.S.S.R. Sots.trud 7 no.7:21-25 J1 '62. (MIPA 15:8)
(Soviet Far East--Industries)
(Soviet Far East--Labor and laboring classes)

BUYANOVSKIY, M.S.; MOSKVIN, D.D.

IA.G.Feigin's 60th birthday, 1903- . Izv. AN SSSR. Ser. geog.
no.5:156 S-O '63. (MIRA 1:1)

BERRI, L.Ya., doktor ekon. nauk; KLIMENKO, K.I., doktor ekon. nauk; OBLONSKIY, Ya.A., kand. ekon. nauk; SAVINSKIY, E.S., kand. ekon. nauk; KHEYNMAN, S.A., doktor ekon. nauk, red.; MOSKVIN, D.D., kand. ekon. nauk, nauchn. red.; ORLOV, N.A., prof., red.; SAZANOVICH, N.K., mlad. red.; SIMKINA, G.S., mlad. red.
[U.S.A. industry in 1929-1963; technical and economic trends and structural changes] Promyshlennost' SShA v 1929-1963 gg., tekhniko-ekonomicheskie tendentsii i strukturnye sdvigi. [By] L.IA.Berri i dr. Moskva, Ekonomika, 1965. 406 p.
(MIRA 18:5)

MOSKVA, U.S.S.R.

Information on the field of the economic sciences. No. 6.
1958. MIRA 12 9

ARONSON, A.Ya., kand. tekhn. nauk; MISHIN, M.M., inzh.; MOSKVIN, D.S., inzh.

Approximate calculation of the frequencies of self-oscillations
of the runners of Francis-type hydraulic turbines.
Energomashinostroenie 9 no.10:5-7 0 '63. (MIRA 16:10)

SAVINOV, G.S.; RUETSOVA, N.M.; MOSKVIN, D.S., inzh., retsenzent

[The EV-80-3 electronic computer and its use in planning and accounting work] Elektronnyi vychislitel' EV-80-3 i ego ispol'zovanie v planovye-uchetnykh rabotakh. Moskva, Mashinostroenie, 1965. 106 p. (MIRA 1818)

DONDOSHANSKIY, V.K.; TROITSKIY, V.A., doktor fiz.-mat. nauk,
retsenzent; MOSKVIN, D.S., kand. tekhn. nauk, red.

[Calculating vibrations of elastic systems with elec-
tronic computers] Raschety kolebaniy uprugikh sistem na
elektronnykh vychislitel'nykh mashinakh. Moskva, Mashi-
nostroenie, 1965. 366 p. (MIRA 18:9)

MOSKVIN. G.

Bee Culture - Equipment and Supplies

Dismountable brood-frame. Pchelovodstvo, 29, No. 7, 1952.

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

MOSKVIN, G.N.; CHEBOTAREV, I.V., kand. tekhn. nauk, red ; KHITOLV,
P.A., tekhn. red.

[Operation of railroad water supply] Eksploiatatsiia zheleznodorozhnogo vodosnabzheniia. Moskva, Zheldorizdat, 1951. 542 p.
(MIRA 16:7)

(Railroads--Water supply)

MOSEVIN, Grigoriy Nikiforovich, kandidat tekhnicheskikh nauk; ZHILIN, A.S.,
Inzhener, redaktor; YUDZON, D.M., tekhnicheskiiy redaktor

[The operation of railroad water supply systems] Eksploatatsiia
zheleznodorozhnogo vodosnabzheniia. Izd. 2-oe, dop. i perer.
Moskva, Gos. transp. zhel-dor. izd-vo, 1956. 391 p. (MLRA 9:8)
(Railroads--Water supply)

MOSKVIN, Grigoriy Wikiforovich; KUDRYASHEV, Aleksandr Timofeyevich;
ARTEMKIN, Aleksey Andreyevich; SURZHIN, Boris Aleksandrovich;
GONCHAROV, S.F., kand.tekhn.nauk, red.; BOBROVA, Ye.M.,
tekhn.red.

[Manual for railroad water supply workers] Rukovodstvo rabotnikam
zheleznodorozhnogo vodoanabsheniia. Moskva, Vses.izdatel'sko-
poligr.ob"edinenie M-va putei soobshcheniia, 1960. 509 p.
(MIRA 13:5)

(Railroads--Water supply)

GONCHAROV, Viktor Mikhaylovich; MURZIN, Leonid Gavrilovich; MIRONOV,
M.I., inzh., retsenzent; BLIDCHENKO, I.F., inzh., retsenzent;
MOSKVIN, G.N., inzh., retsenzent; SOBAKIN, V.V., inzh., red.;
USENKO, L.D., tekhn. red.

[Fuel, lubricants, and water] Toplivo, smazka, voda. Izd.2., perer.
i dop. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soob-
shcheniia, 1961. 158 p. (MIRA 14:12)
(Railroads--Equipment and supplies)

MCSKVIN, G.V.

"Determination of the Volumes of Earthworks for the Deficiency of the Tables", Tekh. Shel.

Dor. No. 4, 1948. Engr.

MYAGKOV, K.H., inzhener; MOSKVIN, G.V., inzhener; BRUKOV, A.F., inzhener;
POCHTAREV, F.K., inzhener; PESHKOV, M.F., inzhener; KRYSHDEVICH, V.A.,
inzhener; MAKARYCHEV, V.V., kandidat tekhnicheskikh nauk; KUDRYASHOV,
P.T., kandidat tekhnicheskikh nauk; KRIVITSKIY, M.Ya., kandidat
tekhnicheskikh nauk; MATSELINSKIY, R.N., kandidat tekhnicheskikh
nauk TESLER, P.A., kandidat tekhnicheskikh nauk

Large reinforced foam concrete panels for heated beamless floors
of industrial buildings developed by the Central Scientific Re-
search Institute of Construction and the Northern Urals Heavy
Construction Trust. Rats. i izobr. predl. v stroi. no.81:18-19
'54. (MIRA 8:6)

1. Glavuralpromstroy (for Myagkov, Moskvina, Brukov) 2. Sevural-
tyazhstroy (for Pochtarev, Peshkov, Kryshdevich) 3. Tsentral'nyy
nauchno-issledovatel'skiy institut promyshlennykh sooruzheniy
(for Makarychev, Kudryashov, Krivitskiy, Matselinskiy, Tesler)
(Floors, Concrete)

MOSKVIN, I.A.

"Infection of Birds through the Virus of the Springs-Summer-Tick Encephalitis," Dok. AN,
28, No. 2, 1940. Mbr. Military-Medical Acad, Im, s.m. Kirov, Leningrad, -cl940-.

KOSKVIN, I.A.

Sterilizing effect of penicillin in experimental relapsing fever in guinea pigs and white mice. Zhur.mikrobiol.epid.i immun. no.8:88
Ag '54. (MIRA 7:9)

1. Iz kafedr epidemiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta i Instituta usovershenstvovaniya vrachey.
(RELAPSING FEVER) (PENICILLIN)

MOSKVIN I. A.

AGGEYEV, P.K., prof.; ANDRZEYKVA-GALANINA, Ye.TS., prof.; BASHENIN, V.A.,
 prof.; BENENSON, M.Ye., doktor med.nauk; VYSHEGORODTSEVA, V.D.,
 prof.; GESSEN, A.I., dotsent; GUTKIN, A.Ye., prof.; ZHDANOV, D.A.,
 prof., laureat Stalinskoy premii; ZNAMENSKIY, V.F., prof.;
 KLIONSKIY, Ye.Ye., prof.; MONASTYRSKAYA, B.I., prof.; MOSKVIN,
 I.A., prof.; MUCHNIK, L.S., kand.med.nauk; PETROV-MASLAKOV, M.A.,
 prof.; RUBINOV, I.S., prof.; RYSS, S.M., prof.; SMIRNOV, A.V.,
 prof., zaslužhennyy deyatel' nauki; TIKHOMIROV, P.Ye., prof.;
 TROITSKAYA, A.D., prof.; UDINTSEV, G.M., prof.; UFLYAND, Yu.M.,
 prof.; FEDOROV, V.K., prof.; KHILOV, K.L., prof., zaslužhennyy
 deyatel' nauki; VADKOVSKAYA, Yu.V., prof.; MARSHAK, M.S., prof.;
 PETROV, M.A., kand.med.nauk; POSTNIKOVA, V.M., kand.med.nauk;
 RAPOPORT, K.A., kand.biolog.nauk; ROZENTUL, M.A., prof.; YANKE-
 LEVICH, Ye.I., kand.med.nauk; LYUDKOVSKAYA, N.I., tekhn.red.

[Book on health] Kniga o zdorov'ye. Moskva, Gos.izd-vo med.lit-ry,
 Medgiz, 1959. 446 p. (MIRA 12:12)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for
 Zhanov, Udintsev). 2. Leningradskiy sanitarno-gigiyenicheskiy me-
 ditsinskiy institut (for all, except Vadkovskaya, Marshak, Petrov,
 Postnikova, Rapoport, Rozentul, Yankelevich, Lyudkovskaya).
 (HYGIENE)

~~MOSKVIN, Ivan Aleksandrovich; SAVATEYEV, M.I., red.; KHARASH, G.A.,
tekh.red.~~

[Tick-borne spirochetosis] Kleshchavye spirokhatozy. Leningrad,
Gos.izd-vo med.lit-ry Medgiz, Leningr.otd-nie, 1960. 162 p.
(MIRA 14:3)

(SPIROCHETOSIS)

MOSKVIN, I.B.

Surgical technic in closed trauma of the bladder. Khirurgiia no.6:
64-68 Je '61. (MIRA 14:11)

1. Iz 1-y khirurgicheskoy kliniki (zav. - prof. S.V. Lobachev)
Moskovskogo gorodskogo ordena Trudovogo Krasnogo Znameni nauchno-
issledovatel'skogo instituta skoroy pomoshchi imeni N.V. Sklifosovskogo (dir. - zasluzhennyy vrach USSR M.M. Tarasov; glavnyy
khirurg - zasluzhennyy deyatel' nauki prof. B.A. Petrov).
(BLADDER--WOUNDS AND INJURIES)

MOSKVIN, I.B.; PAKENTREYGER, E.A.

Diagnosis of closed bladder lesions. Khirurgiia 39 no.8:
92-97 Ag '63. (MIRA 17-6)

1. Iz travmatologicheskoy kliniki (rukovoditel' - prof. I.I. Sokolov) i rentgenovskogo otdeleniya (zav.- kand. med. nauk. M.K. Shcherbatenko) Moskovskogo gorodskogo nauchno-issledovatel'skogo instituta skoroy pomoshchi imeni N.V. Sklifosovskogo (nauchnyy rukovoditel'- chlen-korrespondent AMN SSSR prof. B.A. Petrov; direktor - zasluzhennyy vrach UkrSSR M.M. Tarasov).

МОСКВИН, И. В.

23205

МОСКВИН, И. В. Resheniya Bol'shikh Sistem Normal' NRMH Upravleniy
Odnovremennno Inogimi Vychislitelyami. Sbornik Nauch. - Tekhn. I
Proizvol. Statey Po Bolezni, Kartografii, Aerostate I Pravitelstvu,
VIF. 24, 1949, S. 30-52

SO: Letopis, No. 32, 1949.

S/186/61/003/003/010/018
E071/E435

AUTHORS: Preobrazhenskiy, B.K. and Moskvina, L.N.

TITLE: Ion-Exchange Separation of Groups of Elements
VII. Elements of the Fifth Analytical Group (Group of
Arsenic)

PERIODICAL: Radiokhimiya, 1961, Vol.3, No.3, pp.309-315

TEXT: An earlier paper on the subject was published by
O.M.Lilova and B.K.Preobrazhenskiy (Ref.1: Radiokhimiya, 2, 6,
731 (1960)). In the present paper the possibility of ion-
exchange separation of elements of the fifth analytical group is
investigated. Literature data on the above subject are
summarized in a table. The separation was carried out on
anionites **AB-17** (AV-17) and daueks-1 (DAUX-1) which were found to
be similar in their ion-exchange properties. 15 to 20 μ size
fraction of resins in a column 50 to 100 mm long and 2 mm in
diameter was used. The details of the experimental procedure were
described in the abovementioned paper (Ref.1). In order to choose
a general scheme of separation, the behaviour of the individual
elements in various media was investigated. The behaviour of the
elements investigated was monitored by means of radioactive
Card 1/4 ξ ✓

Ion-Exchange Separation ...

S/186/61/003/003/010/018
E071/E435

isotopes of the corresponding elements. On the basis of the results obtained, a scheme of separation of As, Se, Ge, Te, Sb, Sn, Mo, Re and Au is proposed. Fig.4 shows the separation of the sum of the elements of the As group in the column using the anion AV-17 or Daueks-1 activity in relative units vs. number of free volumes in the column. It is pointed out that some elements may be preliminarily separated by specific methods (e.g. arsenic, selenium and germanium distilled off in the medium of hydrogen bromide, or germanium alone from hydrochloric acid; antimony and tin sulphides are soluble in 6N hydrochloric acid; a number of elements can be separated by specific extracting agents) thus simplifying the scheme. The behaviour of platinum and iridium on resins is unstable and they should be preliminarily separated. The proposed method is suitable for the separation of radioactive isotopes of the above elements and for general analytical purposes. There are 4 figures, 3 tables and 16 references: 6 Soviet-bloc and 10 non-Soviet-bloc. The four most recent references to English language publications read as follows: K.A.Kraus, D.C.Michelson, F.Nelson, J.Am.Chem.Soc., 81,13,3204 (1959); E.H.Huffman, R.L.Oswalt, L.A.Williams, J.Inorg.Nucl.Chem., 3,1,49 (1956);

Card 2/4

Ion-Exchange Separation ...

S/186/61/003/003/010/018
E071/E435

K.A.Kraus, F.Nelson, J.Am.Chem.Soc., 77, 17, 4508 (1955);
V.W.Meloshe, A.F.Preuss, Anal.Chem., 26, 12, 1911 (1954).

SUBMITTED: May 31, 1960

Card 3/4 3

MOSKVIN, L.N.

Characteristics of antimony behavior during anion exchange.
Radiokhimiya 4 no.4:514-516 '62. (MIRA 15:11)
(Antimony—Isotopes)
(Ion exchange)

S/056/62/043/006/019/067
B102/B104

AUTHORS: Dzheleпов, B. S., Ivanov, R. B., Moskvин, L. N.

TITLE: Alpha decay of Ac²²⁵

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 6(12), 1962, 2077 - 2079

TEXT: An actinium preparation was obtained by irradiating metallic thorium by 660-Mev protons from the OIYaI synchrocyclo-

level	energy, keV	intensity, %
α_0	0	54
α_1	37	30,7
α_2	98	8,1
α_3	107	2,1
α_4	148	0,05
α_5	194	2,9
α_6	222	0,5
α_7	252	0,6
α_8	274	0,08
α_9	341?	0,02
α_{10}	388	0,06
α_{11}	544	0,05

tron and subsequent chemical separation. The actinium was then evaporated in vacuo and deposited on a glass base. Its α -spectrum was measured with a magnetic α -spectrometer with double focusing. The results are in good agreement with those obtained by Perlman-Rasmussen (Alpha radioactivity) and Hagemann (Phys. Rev. 79, 534, 1950). The lines at 388 and 544 keV, detected for the first time, are attributed to the Fr²²¹ nucleus. There are 2 figures and 1 table.

SUBMITTED: July 20, 1962
Card 1/1

MOSKVIN, L.N.; PREOBRAZHENSKIY, B.K.; RZHANITSYNA, L.N.

Use of ion exchange resins as aqueous phase carriers in partition chromatography. Separation of Zn, Cd, and Hg. Radiokhimiya 5 no.3:29-304 '63. (MIRA 16:10)

(Ion exchange resins)
(Chromatographic analysis)
(Metals--Analysis)

ACCESSION NR: AP4009951

S/0186/63/005/006/0147/0749

AUTHOR: Moskvin, L. N.

TITLE: Distributive chromatography on fluoroethylene-4. The separation of europium from other rare-earth elements

SOURCE: Radiokhimiya, v. 5, no. 6, 1963, 747-749

TOPIC TAGS: fluoroethylene-4, lanthanide, divalent ytterbium, divalent samarium, trivalent cation, dibutyl ester, di-2-ethylhexylphosphoric acid, di-isoamylphosphoric acid, di-n-octylphosphoric acid, europium, europium separation, Jones reducing agent

ABSTRACT: Experiments were conducted to develop a better method for the rapid and quantitative isolation of europium from the other lanthanides. The Jones reducing agent (Trans. Am. Inst. Mining Engr., 17, 411 (1888-1889)) is normally used for this purpose, since europium is easily reducible to a divalent state. But the partial oxidation of europium when separated from trivalent ions makes its quantitative isolation from the other rare-earth elements very difficult. The possibility of using distributive chromatography on fluo-

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ACCESSION NR: AP4009951

fluoroethylene-4 was therefore investigated with a view to determining the quantity of reduced europium. The experiments involved use of artificial mixtures of rare-earth elements as well as of the products resulting from the bombardment of europium by fast neutrons. All test elements were controlled by radioactive indicators. The combined use of the Jones reducing agent and a chromatographic column with fluoroethylene-4 as an organic phase carrier made it possible to isolate substantial quantities of europium from the other rare-earth elements. It was not possible to separate very small quantities. This is probably due to the presence in the solutions of elementary oxygen which oxidizes the europium. Since the separation process does not take much time, the simple device involved makes this method very useful for the solution of a number of radio-chemical problems. Orig. art. has: 1 figure, 1 table.

ASSOCIATION: None

SUBMITTED: 24Jun63

DATE ACQ: 07Feb64

ENCL: 00

SUB CODE: CH, EL

NR REF SOV: 002

OTHER: 002

Card 2/2

MORVIN, L.N.

Partition chromatography on fluoroplast 4. Isolation of trace amounts of Se from SrO target irradiated by fast protons. Radiokhimiya 6 no. 1:110-111 '64. (MIRA 17:6)

MOSEV LN, L. N.; KOVIKOV, V. T.

"Fractionation Chromatography on Fluoroplastic⁴. A Fast Method of Separation of Lanthanum from Cerium."

report submitted for All-Union Conf on Neutron Spectroscopy, Tbilisi, 14-22 Feb 64.

Radiyevyy Institut (Radium Inst)

FELIKVIN, L. N.; TOMSHOV, S. B.

"Fractionation Chromatography on Fluoroplastic⁴. Separation of Trace
Quantities of Eu from a Target of Tb_2O_3 Irradiated by Fast Neutrons."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

Radiyevyy Institut (Radium Inst)

L 511:63-65 INT(m)/IPP(c)/EWO(m)/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4 LJP(c)
IGN/JD/JG/GS/RA
ACCESSION NR: AT5013640 UR/0000/65/000/000/0085/0093
543.544.6:546.65 32
AUTHOR: Moskvin, L. N.; Preobrazhenskiy, B. K. 0+1
TITLE: Partition chromatography on polytetrafluoroethylene, Part 1. Separation
of light rare earth elements by gradient elution
SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Radiokhimicheskiye
metody opredeleniya mikroelementov (Radiochemical methods for determining trace
elements); sbornik statey. Moscow, Izd-vo Nauka, 1965, 85-93
TOPIC TAGS: partition chromatography, polytetrafluoroethylene, rare earth analy-
sis, gradient elution, light lanthanide separation, ethylhexylorthophosphate /
Fluoroplast-4
ABSTRACT: The article is devoted to the development of a technique for separating
light lanthanides by means of reversed phase partition chromatography on polytetra-
fluoroethylene. The latter was successfully used to stabilize the extracting
agent, bis(2-ethylhexyl)-orthophosphoric acid (B2EHPA), in the form of a station-
ary organic phase in the chromatographic column. A procedure for purifying

Card 1/2

L 51163-65

ACCESSION NR: AT5013640

B2EHFA with ethylene glycol directly on the column to remove mono(2-ethylhexyl) orthophosphoric acid (M2EHFA) is described; it is convenient, yields good results, and may be used for the separation of these acids. The behavior of the elements studied was followed by means of the radioisotopes La¹⁴⁰, Ce¹⁴⁴, Pm¹⁴⁷, and Eu¹⁵²⁻¹⁵⁴. A method proposed for calculating the concentrations of the eluent in the gradient elution of rare earths enables one to predetermine the position where the element will be obtained. When three consecutive mixing vessels are employed, there is good agreement between the calculated and observed positions of the elution peaks. Calculations and experiments showed that the use of one or two mixing vessels does not produce the desired results. Orig. art. has: 6 figures, 1 table, and 9 formulas.

ASSOCIATION: None

SUBMITTED: 24 Jun 63

ENCL: 00

SUB CODE: IC, Gc

NO REF SOV: 002

OTHER: 003

Card 2/2

L 54469-63 ENT(m)/EPF(c)/ENG(m)/ENP(j)/ENP(t)/ENP(b) P-4/Pr-4/Feb
DIAAF/IJF(c) RWH/JD/JG/GS/RM

ACCESSION NR: AT5013641

UR/0000/65/000/000/0093/0095
543.544.6:543.21:546.661+546.663

27
B+1

AUTHOR: Moskvin, L. N.; Tomilov, S. B.

TITLE: Partition chromatography on polytetrafluoroethylene. Part 2. Separation of trace amounts of Eu from a terbium trioxide target bombarded with fast protons

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Radiokhimicheskiy metody opredeleniya mikroelementov (Radiochemical methods for determining trace elements); sbornik statey. Moscow, Izd-vo Nauka, 1965, 93-95

TOPIC TAGS: terbium trioxide analysis, proton bombardment, europium separation, partition chromatography, polytetrafluoroethylene, rare earth isotope, Jones reductor, chromium separation / Fluoroplast-4

ABSTRACT: Bombardment of a Tb₂O₃ target with 660 MeV protons produced europium together with isotopes of other rare earths lighter than terbium. To prevent the oxidation of europium in the course of its subsequent separation, the authors used a closed system including a Jones reductor and a chromatographic column filled with polytetrafluoroethylene carrying di-n-octylphosphoric acid, and stabilized the europium in the divalent state by introducing the oxidant buffer

Card 1/2

I. 54465-63

ACCESSION NR: AT5013641

CrCl₃, the reduction potential of Cr²⁺, Cr³⁺ (-0.41 V) being very close to that of Eu²⁺, Eu³⁺ (-0.44 V). The europium and chromium reduced in the Jones reductor pass through the chromatographic column without being adsorbed, whereas the other rare earths are adsorbed and are then eluted with hydrochloric acid. The separated Eu²⁺ and Cr²⁺ are oxidized to Eu³⁺ and CrO₄²⁻ with ammonium persulfate, and Eu is concentrated by coprecipitation on ferric hydroxide. The hydroxide precipitate is dissolved in conc. HCl, 1-2 mg of a lanthanum salt is introduced, and europium coprecipitates on lanthanum fluoride. After dissolving the fluoride in a saturated solution of H₃BO₃ in 0.2 N HCl, the separation of lanthanum and europium is performed on a small column filled with polytetrafluoroethylene carrying bis(2-ethylhexyl) orthophosphoric acid. The yield of europium is 90-95%. The europium preparation thus obtained was used at the OIYaI to study the Mössbauer effect on Sm¹⁴⁹. Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 12Dec63

NO REP NOV: 001

ENCL: 00

SUB CODE: IC, Gc

OTHER: 001

Cord 2/2

~~1-146445~~ ~~ENT(m)/EPF(c)/ENG(m)/EAP(s)/ENP(s)/ENP(b)~~ ~~PC-4/Pr-4~~ ~~IJP(c)~~
 UR/0000/65/000/000/0095/0096 ~~RWH/SR/SC/CR/PR~~
 543.544.6:543.21:546.654+546.655

ACCESSION NR: AT5013642

AUTHOR: Moskvina, L. N.; Kovikov, V. I.

TITLE: Partition chromatography on polytetrafluoroethylene. Part 3. Rapid
 method of separating lanthanum from cerium

SOURCE: AN SSSR, Otdeleniye obshchey i tekhnicheskoy khimii. Radiokhimicheskiye
 metody opredeleniya mikroelementov (Radiochemical methods for determining trace
 elements); sbornik statey, Moscow, Izd-vo Nauka, 1965, 95-96

TOPIC TAGS: partition chromatography, polytetrafluoroethylene, rare earth analy-
 sis, lanthanum determination, ethylhexylorthophosphate, cerium determination,
 column chromatography / Fluoroplast-4

ABSTRACT: The proposed method for the rapid and quantitative separation of trace
 amounts of lanthanum and cerium is based on the different extractability of tri-
 and tetravalent cations by bis(2-ethylhexyl)orthophosphoric acid (BEHPA). Par-
 tition chromatography on polytetrafluoroethylene was used. La and Ce were applied
 to the chromatographic column in 0.01 N HNO₃. La was eluted with a solution of
 0.5 N HNO₃ + 0.4 M (NH₄)₂S₂O₈ + 0.1 M AgNO₃. At this acidity, La has a partition

Card 1/2

54464-65

ACCESSION NR: AT5013642

coefficient of less than unity and is eluted in the first fraction. Under these conditions, Ce is oxidized to the tetravalent state and is firmly held on the column. To remove the oxidizing solution, the column was washed with 0.01 N HNO₃, and cerium was eluted with 6 N HCl, which simultaneously reduced it to the tetravalent state. This procedure permitted a rapid and quantitative separation of lanthanum and cerium, and proved particularly useful in the separation of La¹³⁴ (T = 6.5 min) from Ce¹³⁴, when it was necessary to reduce the time of the separation as much as possible. Grig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 12Dec63

NO REF SOV: 001

ENCL: 00

SUB CODE: IC,GC

OTHER: 002

Card 2/2

26652-66 EWT(1)/EWT(m) DIAAP/IJP(c) JD/JG/AT
 ACC NR: AF6017121 SOURCE CODE: UR/0048/65/029/012/2264/2270

AUTHOR: Dshelgov, B. S.; Moskin, L. N.; Tishkin, P. A.; Johovatkina, I. F.; Shishelov, I. A. 60
B

ORG: Scientific Research Physics Institute, Leningrad State University im. A. A. Zhdanov (Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta); All-Union Scientific Research Institute of Metrology im. D. I. Mendeleev (Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii)

TITLE: Coincidence of conversion electrons in Ce^{135} decay [This paper was presented at the 15th Annual Conference on Nuclear Spectroscopy and the Structure of the Atomic Nucleus, held in Minsk from 25 January to 2 February 1965.]

SOURCE: AN SSSR. Investiya. Seriya fizicheskaya, v. 29, no. 12, 1965, 2264-2270

TOPIC TAGS: cerium, lanthanum, spectrometer, tantalum, proton, conversion electron spectrum

ABSTRACT: The reported work was carried out to verify the scheme of excited levels of Ce^{135} . The spectrum of the conversion electrons was obtained with the duplexed roidial beta spectrometer of the Leningrad State University. The Ce^{135} sample was obtained from a tantalum target irradiated by 660 Mev protons for 5 to 10 hours. Results appear to be definitive for the locations of transitions with energies of 88.4 and 118.0 keV in the upper part of the decay scheme. The authors thank K. Ya. Gromov and Zh. T. Zhelev for supplying the preparations and N. A. Lebedev for the chromatographic separation of the fractions. Orig. art. has: 4 figures. JPRS
 Card 1/1 SUB CODE: 20 / SUBM DATE: none / ORIG REF: 010 / OTH REF: 001

DALAYEV, V.A.; VOINOVA, N.A.; KHELEBOV, P.G.; MOISEV, I.N.; SHEVTSOVA, S.A.

On the β -decay of Ta^{182} with an energy $E_{\beta} = 0.7$ MeV.
AN SSSR. Ser.fiz. 3' no.1:126-131. Ja '69.

(MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut reaktivov
im. D.I.Mendeleyeva i Fiziko-tekhnicheskii institut im. A.F.
Ioffe AN SSSR.

L 07155-67 EWT(m)/EWP(t)/FTI IJP(c) JD/JG
 ACC NR: AP7001027 SOURCE CODE: UR/0048/66/030/001/0126/0131

AUTHOR: Balalayev, V. A.; Voinova, N. A.; Dzheleпов, B. S.; Moskvин, L. N. and
 Shestopalova, S. A.

ORG: All-Union Scientific Research Institute of Metrology im. D. I. Mendeleev
 (Vsesoyuzniy nauchno-issledovatel'skiy institut metrologii); Physicotechnical
 Institute im. A. F. Ioffe AN SSSR (Fiziko-tehnicheskiy institut AN SSSR)

TITLE: Beta decay of ^{182}Ta with energy above 600 keV (Paper presented at the
 2nd All-Union Symposium on the Physics of thin Ferromagnetic Films, Irkutsk,
 10-15 July 1964)

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 1, 1966, 126-131

TOPIC TAGS: radioactive decay, tantalum, beta radiation

ABSTRACT: In a previous paper the authors were the first to discover a continuous background in the 820-keV region for the beta decay of ^{182}Ta . This prompted a continuation of the work to investigate the hard beta radiation in the 1500-keV region of a stronger ^{182}Ta source. Results are plotted in curves, tabulated, and compared with results of other authors. The authors thank A. Meshter, I. F. Uchevatkin, and A. I. Medvedev for assistance in the taking of the measurements. I. F. Uchevatkin also took part in the operation and discussions of the original experimental data. The authors further thank G. M. Bukat for setting up the program for the electronic calculating machine. Orig. art. has: 3 figures and 2 tables.

Card 1/1 [JPRS; 35, 435] SUB CODE: 18 / SUBM DATE: none / ORIG REF: 001 / OTHER REF: 001

L 09232-67 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AP7002797 SOURCE CODE: UR/0048/66/030/000/1322/1324

AUTHOR: Dzheleпов, B. S.; Ivanov, R. B.; Moskvин, L. N.; Rodionov, V. F. 24

ORG: none

TITLE: Investigation of the gamma spectrum of ^{Ac225} /4

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 8, 1966, 1322-1324

TOPIC TAGS: synchrocyclotron, alpha spectrum

ABSTRACT: Revised values of the energies and intensities of the α -transitions of ^{Ac225} are presented. The source itself was obtained by bombarding a thorium target with protons of 660-Mev energy in a synchrocyclotron. The α -spectrum was investigated by means of a magnetic α -spectrometer. Findings: in addition to the already known α -groups, a number of new low-intensity transitions was detected and tabulated. To verify that they belong in the ^{Ac225} group, the spectral regions in which they are present were subjected to another exposure in order to determine the corresponding half-life periods. In general, these findings are in satisfactory agreement with the data of Kalevi vaili (Ann. Acad. Sci. Fenn., ser. A. VI, Physica, 165 (1964)). In conclusion, the authors wish to express their appreciation to E. V. Loykina for assistance in measurements and M. A. Mikhailovo for participation in the analysis of the findings. Orig. art. has 1 figure and 1 table. [JPRS: 39,040]

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 003
Card 1/1 mla

0925 1685

BOGDANOV, A.A., red.; MOSKVIN, M.M., red.

[Atlas of geological maps for schools] Atlas uchebnikh geologicheskikh
kart. Moskva, Gosgeoltekhizdat, 1955. 2 p., 29 col. maps.
(MIRA 11:11)

(Geology--Maps)

KOSKVIN, M.M.; SEMIHATOV, M.A.

Underwater solifluctional disturbances in upper Cretaceous and
Paleogene deposits of Dagestan. Izv.AN SSSR, Ser.geol.21 no.10:67-
84 0 '56. (MLBA 10:1)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Dagestan--Geology, Stratigraphic)

MOСКВИН, М. М.

20-2-45/60

AUTHORS: Krivolutskiy, A. Ye. , Moskvina, M. M.

TITLE: New Data Concerning the Miocene Deposits of the Daghestan Mountain Area (Novyye dannyye o miotsenovykh otlozheniyakh v gornom Dagestane)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp. 398-399 (USSR)

ABSTRACT: Since a long time, scientists know the Medium and Upper Miocene deposits which have been preserved as insignificant little islands in the framework of the Upper Cretaceous limestones. There also exist descriptions of the occurrence of Chok-rakskiye iskopayemyye (rocks) and of a thick sandstone mass, as well as of sandy shell limestones of the Medium Sarmatian. On basis of their research work carried out during 1951-52, the authors of the present paper are in a position to somewhat supplement the existing data on the distribution of Miocene in this part of the Caucasus Mountains. In the axial deflection of the Akusha synclinal there were found, above the limestones of the Maastricht step, occurrences of thin layers of greenish-grey clay with lenticular intermediate layers

Card 1/3

20-2-45/60

New Data Concerning the Miocene Deposits of the Daghestan Mountain Area

of solid limestone, enriched at the basis by well rolled rubble. Remainers of characteristic Chokrakskiye fossils were found here. These discoveries confirm the assumption by Drobyshev as to the existence of Chocrac layers at the base of the transgressively situated Tertiary sediments of the area around the village of Akuscha. A second and hitherto unknown island was found at the north-eastern wind of the Khodzhal'makhinskaya sinklinal' (synclinal). Here a piece of cavernal limestones and shell stones was preserved from erosion on the limestones of the Danish step. Although these new data suggest a wider distribution of the Chokrakskiye rocks in the Daghestan Mountain area than previously assumed, they in no way substantially change the existing paleographic scheme of this period. On the other hand, discovery of the previously in this area unknown Karaganskiye otlozheniya (sediments) is of extreme interest. They were found in the axial deflection of the Khodzhal'makhinskaya synclinal in the form of a significant little island, along the upper part of the Khala-Gork river. The total thickness probably amounts to several cm. Remainers of typical Karaganskiye sediments have been found only in the upper part of the mass. So far it has not been

Card 2/3

20-2-45/69

New Data Concerning the Miocene Deposits of the Daghestan Mountain Area
possible to determine the age of the deeper layers. Discovery of
the Karaganskiye rocks in the Daghestan Mountain area, in a
distance of 25 - 30 km from the border of their connected
occurrence in the promontory, undoubtedly is of great signi-
ficance for paleographic constructions. Good grading and
relatively fine grains support the assumption of sedimentation
in considerable distance from the snore line. It appears that
at that time the latter was located still farther to the
south, i.e. in the direction of the axial zone of the Cau-
casus Chain. There are 2 references, both Soviet.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy
gosudarstvennyy universitet im. M. V. Lomonosova)
PRESENTED: December 11, 1956, by N. S. Shatskiy, Member of the Academy
SUBMITTED: December 10, 1956
AVAILABLE: Library of Congress
Card 3/3

MIKHAYLOV, Aleksandr Yevgen'yevich; MOSKVIN, M.M., red.; KHAIN, V.Ye., red.;
OSIPOV, S.S., red.; KUKHIN, S.S., red. izd-va; AVERKIYEVA, T.A.,
tekh.n.red.

[Principles of structural geology and geological mapping] Osnovy
strukturalnoi geologii i geologicheskogo kartirovaniia. Moskva,
Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. 1958.
375 p. (MIRA 12:4)

(Geology. Structural)

(Geology--Maps)

MOSKVIN, M.M.; POSLAVSKAYA, N.A.

Distribution of sea urchin of the Micrasterinae and Brissopinae
subfamilies in the upper Cretaceous of the U.S.S.R. Nauch.dokl.vys.
shkoly; geol.-geog.nauki no.1:165-168 '58. (MIRA 12:2)

1. Moskovskiy universitet, geologicheskiy fakul'tet, kafedra isto-
richeskoy i regional'noy geologii.
(Sea urchins, Fossil)

KOSKVIN, M.M.; MASLAKOVA, N.I.; DOBROV, S.A.; PAVLOVA, M.M.; NAYDIN, D.P.;
SHIMANSKIY, V.N.; ASTAF'YEVA, K.A.; POSLAVSKAYA, N.A. Primal
uchastiye CHEKHOVICH, M.V.. SHOROKHOVA, L.I., veduschiy red.;
MUKHINA, E.A., tekhn.red.

[Atlas of upper Cretaceous fauna of the Northern Caucasus and the
Crimea] Atlas verkhneselovoi fauny Severnogo Kavkaza i Kryma.
Pod red. M.M.Koskvina. Moskva, Gos.nauchno-tekhn.izd-vo neft. i
gorno-toplivnoi lit-ry. 1959. 499 p. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnykh gazov.
2. Sotrudniki kafedry istoricheskoy geologii i paleontologii Geologi-
cheskogo fakul'teta Moskovskogo gosudarstvennogo universiteta (for
all except Shorokhova, Mukhina).
(Caucasus, Northern--Paleontology, Stratigraphic)
(Crimea--Paleontology, Stratigraphic)

BARKOVSKAYA, K.S.; BEZBORODOV, R.S.; BROD, I.O., prof., doktor geol.-mineral.
nauk; BUN'KOV, M.S.; GRINFEL'D, M.I.; ZHIVAGO, N.F.; IBRAGIMOV, D.M.;
KUDRYAVTSEV, M.P.; LEONOV, G.P.; MOSKVIN, M.M.; HAZAROV, R.I.;
NESMEYANOV, D.V.; NIKOLENKO, V.A.; VYSOTSKIY, I.V., nauchnyy red.;
RUSAKOVA, L.Ya., vedushchiy red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Geology of the eastern part of the northern slope of the Caucasus]
Geologicheskoe stroenie vostochnoi chasti severnogo sklona Kavkaza.
Pod red. I.O.Broda. Leningrad, Gos.nauchno-tekhn.izd-vo nef. i gorno-
toplivnoi lit-ry, Leningr.otd-nie, 1960. 319 p. (Trudy Kompleksnoi
IUzhnoi Geologicheskoi Ekspeditsii, no.2). (MIRA 13:11)

1. AN SSSR. Kompleksnaya Tuzhnaya Geologicheskaya Ekspeditsiya, 1956-.
2. Vsesoyuznyy nauchno-issled.institut gazovoy promyshlennosti (for Zhivago, Kudryavtsev).
3. Kafedra istoricheskoy i regional'noy geologii (for Leonov, Moskvina). (Caucasus, Northern--Geology)

MOSKVIN, M.M.; PAVLOVA, M.M.

Lower Turonian in the Northern Caucasus. *Bul. MOIP. Otd. geol.*
35 no.5:124-141 S-O '60. (MIRA 14:1)
(Caucasus, Northern—Geology, Stratigraphic)

MOSKVIN, Mikhail M.

Upper Cretaceous sediments of the North Caucasus and Lesser
Caucasus. Acta geol Pol 12 no.2:159-199 '62.

1. University of Moscow, Moscow.

RABCOFF, L., ROSKVIN, M.V.(Eng.)

RABCOFF, L., ROSKVIN, M.V.(Eng.)

Magneto

Magneto Sam-7t. MFS 12 no. 5, 1952

Monthly List of Russian Accessions, Library of Congress, August, 1952. U.S. CLASSIFIED.

GILINSKIY, I.A., kand.tekhn.nauk; CHERKASSKIY, A.Kh., kand.tekhn.nauk,
retsensent; MOSKVIN, M.Y., inzh., retsensent; KOZLOV, V.P., inzh.,
retsensent; MASHKOV, G.F., inzh., retsensent; YAKOVLEV, L.M.,
inzh., red.; NIKITIN, A.G., red.izd-va; EL'KIND, V.D., tekhn.red.

[Heat, hydraulic, and air engines of rural electric power stations]
Teplovye, gidravlicheskie i vetrianye dvigateli sel'skikh elektro-
stantsii. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry,
1958. 259 p. (MIRA 12:3)
(Air turbines) (Hydraulic turbines) (Electric motors)

GEL'MAN, Boris Mikhaylovich; KRAYEVSKAYA, Ye.K.; MOSKVIN, M.V.; ALISANOV,
B.I.; AL'GIN, B.P.; VODOLAZHCENKO, Yu.T.; LEVITANUS, A.D.;
SHKOL'NIKOV, A.B., ed.; BALLOD, A.I., tekhn.red.

[Wheeled diesel tractors] Dizel'nye kolesnye traktory. Moskva,
Gos.izd-vo sel'khoz.lit-ry, 1959. 423 p. (MIRA 13:2)
(Tractors)

MOSEVIN, N., *tekhnolog*

Useful innovations put into production. Izobr. i rats. no.5:10
Ky '59. (MIRA 12:8)

1. Minskiy traktornyy zavod.
(Minsk--Tractor industry)

MOSKVIN, N.A., YACHMELEV, N.I.

Importance of a comparison of mechanical and electrical properties in rating the contractile capacity of the myocardium. Trudy LSGMI 45:281-286 '58 (MIRA 11:11)

1. Kafedra fakul'tetskoy terapii Leningrodskego sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. A.A. Kedrov).
(HEART)

MOSKVIN, N.A.

Comparison of phases of the cardiac cycle during digitalis therapy.
Trudy LSGNI 48:403-407 '59. (MIRA 14:2)

(DIGITALIS) (HEART)

1011

S/051/62/013/004/005/023
E202/E492

AUTHORS: Kaplyanskiy, A.A., ~~Moskvin, N.A.~~

TITLE: Piezospectroscopic effect in crystals of lithium fluoride activated with hexavalent uranium

PERIODICAL: Optika i spektroskopiya, v.13, no.4, 1962, 542-549

TEXT: Ten single LiF crystals activated with different uranium salts of varying concentrations were subjected to uniaxial compression along various symmetry axes at 77°K. This was followed by taking their luminescence spectra along the direction L, transverse to the axis of compression P. Excitation of luminescence was along M, perpendicular to L and P (sometimes M was parallel to L). The resulting spectra were photographed in nonpolarized and polarized light (E was either parallel or perpendicular to P) using spectrometer with approximately 5Å/mm dispersion. All samples showed at 77°K an equidistant longwave series of lines in addition to other lines, e.g. 4867, 4828 and 4765 Å. The most characteristic were the lines on the shortwave side giving rise to two definite types, viz. I and II. The sample activated with uranyl acetate had an additional very intensive series with the
Card 1/3

Piezospectroscopic effect ...

S/051/62/013/004/005/023
E202/E492

principal line at 5225 Å. Only types I, and those with the 5225 Å line, were studied in detail. It was found that the reversible effect of uniaxial compression depending on direction P produced different effects in different lines. Shift and varying amount of splitting was observed. The split components were very strongly polarized. Good agreement between the calculated (Opt. i spektr., no.7, 1959, 677, 683; no.10, 1961, 165. Izv. AN SSSR, ser, fiz., v.25, 1961, 20) and the observed values of the piezospectroscopic effect parameters in the luminescence spectrum lines of LiF-U was found. The luminescence centres responsible for the majority of spectral lines in type I crystals and also for the two principal electron vibrational series are anisotropic formations oriented within the LiF lattice along the three crystalline axes of symmetry of the 4th order. The elementary oscillators corresponding to the lines of luminescence centres are linear electric and magnetic dipoles (e, m) oriented along the axes of the centres. Thus the radiation of the LiF-U luminescence centres represents the superposition of the electric and magnetic radiation spectra. Of other possible structures giving rise to this type of

Card 2/3

Piezospectroscopic effect ...

S/051/62/013/004/005/C23
E202/E492

anisotropy only the interpenetration of the linear O-U-O in the LiF lattice by occupation of the F-Li-F positions was discussed. The authors' postscript added after submission of the paper attributes some of the luminescence centres in type II crystals to various UO_2^{++} containing complexes. There are 5 figures and 2 tables.

This paper was presented at the Second Conference on alkali-halogen crystals (Riga, June 1961).

SUBMITTED: August 24, 1961

Card 3/3

L 10394-63

EWI(1)/BDS/EEC(b)-2--AFFTC/ASD/ESD-3--PI-4--IJP(C)

ACCESSION NR: AP3000585

S/0051/63/014/005/0676/0686

63

AUTHOR: Kaplyanskiy, A. A.; Moskvín, N. A.

61

TITLE: Piezospectroscopic investigation of luminescence centers in alkali fluoride crystals activated by hexavalent uranium

SOURCE: Optika i spektroskopiya, v. 14, no. 5, 1963, 676-686

TOPIC TAGS: luminescence centers, alkali halides, U, activators

ABSTRACT: The present work is a continuation of earlier research aimed at investigation of different luminescence centers in alkali fluoride phosphors activated by hexavalent uranium. The piezospectroscopic procedure employed has been described elsewhere (Kaplyanskiy, A. A.: Opt. i Spekr. 7, 677 and 683, 1959; Izv. AN SSSR, Ser. fiz., 25, 20, 1961; Proc. Internat. Conf. on Semiconductor Physics, Prague, p. 356, 1960); it consists in observing the luminescence spectra of cooled crystals compressed parallel to one of the principal axes. The spectra are observed parallel and perpendicular to the compression axis. Deformation results in splitting of virtually all the lines

Card

1/32

L 10394-63
ACCESSION NR: AP3000585

2

of NaF:U and LiF:U. Different types of splitting are illustrated. It is inferred that there are present in alkali fluorides several different kinds of centers with different types of symmetry (see Fig. 1 in Enclosure 1). The "core" of the centers is formed by a uranyl ion: O-U-O. The various centers give rise to the different types of splitting. "In conclusion the authors thank Ye. F. Gross and P. P. Feofilov for their interest in the work." Orig. art. has: 4 equations and 5 figures.

ASSOCIATION: none

SUBMITTED: 26Jul62 DATE ACQ: 12Jun63

ENCL: 01

SUB CODE: PH NR REF SOV: 012

OTHER: 007

Card 2/32

S/020/63/148/003/015/037
B108/B180

AUTHORS: Kaplyanskiy, A. A., Moskvin, N. A.

TITLE: Combined magnetic and electric dipole transitions in the spectra of alkali fluoride crystals with sesivalent uranium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 558-561

TEXT: To investigate the F centers and the multipolarity of the transitions in MeF-U, the authors studied the effect of a uniaxial compressive strain on the low-temperature luminescence spectra of LiF-U and NaF-U single crystals (P. P. Feofilov. Optika i spektroskopiya, 7, 842 (1959); 8, 824 (1960); 11, no. 3 (1961)). The compressed crystals were studied at 77°K in polarized light. The observations were made in two directions perpendicular to each other. Strain caused reversible polarized splitting of most of the lines, when the direction was changed, only one of the polarized components of a line changed, from which it could be seen whether the line in question was of magnetic or electric origin. This dependence of the deformation splitting pattern on directions shows that these lines

Card 1/2

S/020/63/148/003/015/037
B108/B180

Combined magnetic and electric ...

are due to a blend of electric and magnetic dipole radiation, while its nature indicates that the F centers are rhombic, belonging to the symmetry group C_{2v} . There is 1 figure.

ASSOCIATION: Fiziko-tekhnicheskly institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR) ✓

PRESENTED: July 27, 1962, by B. P. Konstantinov, Academician

SUBMITTED: July 19, 1962

Card 2/2

ACCESSION NR: AP4032866

S/0051/64/016/004/0619/0627

AUTHOR: Kaplyanskiy, A.A.; Moskvina, N.A.; Feofilov, P.P.

TITLE: Investigation of the electric and magnetic series in the luminescence spectra of alkali fluorides activated by hexavalent uranium

SOURCE: Optika i spektroskopiya, v.16, no.4, 1964, 619-627

TOPIC TAGS: luminescence spectrum, polarized luminescence, luminescence center, level diagram, luminescence temperature, uranium activated lithium fluoride, uranium activated sodium fluoride, uranium 6^+

ABSTRACT: The present study is a continuation of investigations of the electric and magnetic series of lines and bands in the luminescence spectra of LiF and NaF crystals activated by hexavalent uranium. A number of earlier studies by the authors and other non-Soviet experimenters are referred to and discussed. The crystals were grown at the Institute of Crystallography of the Academy of Sciences SSSR. Most of the measurements were performed on NaF:U 6^+ crystals, in the spectrum of which the series are more clearly pronounced, but the principal inferences apply to LiF:U crystals as well. The measurements (mostly at liquid-nitrogen temperature) in-

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ACCESSION NR: AP4032866

cluded determination of the degree of polarization P of the luminescence as a function of the wavelength of the exciting light, λ_{excit} . There was established qualitative mirror symmetry of the P versus λ_{excit} curves for the electric and the magnetic series, which is interpreted as indicating that the same or common centers are responsible for the electric and magnetic dipole series. Also studied were the intensity distributions in the electronic-vibrational (vibronic) series (the observed distributions agree with the predictions of theory) and the temperature dependence of the luminescence spectra of LiF:U and NaF:U . an increase in temperature in the range from liquid nitrogen to about 350°K results in a shift of the electric and magnetic luminescence spectra (lines) to the long wavelength side; the shifts are approximately the same for most lines, but a few lines appear to be more "temperature sensitive". The temperature shift is associated with a change in the lattice parameters with heating. Level diagrams for the luminescence centers in LiF:U and NaF:U , based on the results of the temperature variation measurements and other data, are presented. Curves are given for the temperature dependences of the intensities of the head bands of the electric and magnetic series; the intensity of the former increases with rising temperature; that of the latter falls off. A value of approximately 10^3 is adduced for the ratio of the probabilities for electric and magnetic transitions. Superficial similarities between the levels and transitions in the investigated crystals and in MeF:Sm^{2+} (where $\text{Me} = \text{Sr}$ or Ba) are noted. Orig. art. has: 6 figures, 5 formulas, and 1 table.

Card 2/3

ACCESSION NR: AP4032866

ASSOCIATION: none

ATD PRESS: 3081

ENCL: 00

SUBMITTED: 21Jun63

NR REF SOV: 009

OTHER: 003

SUB CODE: IC, OP

Card 3/3

L 64469-65 EWT(1)/EWT(m)/EPP(c)/EWP(j)/EWP(t)/EWP(b)/EWA(m)-2 IJP(c) JD/WH/JH/JS/AT
ACCESSION NR: AP5012618 UR/0051/65/018/005/0882/0884
537.228.1

AUTHORS: Kaplyanskiy, A. A.; Moskvin, N. A. 44,55 33 B

TITLE: Concerning the symmetry of narrow-band luminescence and absorption centers of colored LiF crystals

SOURCE: Optika i spektroskopiya, v. 18, no. 5, 1965, 882-884 71

TOPIC TAGS: luminescence center, luminescence spectrum, lithium fluoride, uniaxial crystal, line splitting, pressure effect

ABSTRACT: The article deals with the effect of deformation on certain lines of LiF colored by Co⁶⁰ rays. The method used is similar to that previously described by one of the authors (Kaplyanskiy, Opt. i spektr. v. 7, 683, 1959). The spectra of the uniaxially stressed crystals were observed in the L direction, which was perpendicular to the compression axis P. Light polarized with E parallel to P and E perpendicular to P was used. It is shown by means of a piezospec-

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L 64469-65

ACCESSION NR: AP5012618

troscopic study that the 5,240 Å line is associated with a new kind of rhombohedral center which has a different orientation in the lattice than the 'principal' rhombohedral centers of the luminescence series. Differences in the splitting of the 5,240 Å line and that of nearby absorption is discussed. The effect of deformation on the main lines of the electron-vibration structure of the R_2 absorption bands of LiF (391 nm) was also examined. At 4.2K and with a load of about 10 kg/mm² this line appears as a singlet for P parallel to $\langle 100 \rangle$ and a doublet for P parallel to $\langle 111 \rangle$ and P parallel to $\langle 110 \rangle$. At 77K, the 391 nm band is reduced in intensity and broadened, so that its deformation splitting is poorly resolved. The details of the experimental picture observed at 4.2K are in good agreement with the assumption that the optical oscillation of the 391 nm band is linear electric, oriented in the R center along the base of the vacancy triangle, and that when the crystal is deformed the configurations preferentially occupied are those for which the base of the triangle makes the smallest angle with the compression axis. This distinguishes the situation from the preferred orientations of anisotropic cen-

Card 2/3

L 64469-65

ACCESSION NR: AP5012618

ters in deformed cubic crystals. Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 14Aug64

ENCL: 00

SUB CODE: OP

NR REF SOV: 007

OTHER: 010

lls
Card 3/3

KAPLYANSKIY, A.A.; MOSKVIN, M.A.

Symmetry of narrow-band radiation and absorption centers in colored
LiF crystals. Opt. i spektr. 18 no.5:882-884 My '65.

(MIRA 18:10)

1055.VIIR, N. I.

1207 Corrosion-Resistant Iron-Base Metal Powder Products. N. I. Moskvina. Henry Bratcher, Alhambra, Calif., Translation No. 1055.VIIR. From *Vestnik Mashinostroeniya*, v. 32, no. 3, 1952, p. 73-76.
Production and properties; simultaneous sintering and chromizing of Fe-powder compacts. Tables, graphs, photographs, micrographs, diagrams.

62

SOV/137-59-1-1814

Translation from: Referativnyy zhurnal Metallurgiya, 1959, Nr 1, p 240 (USSR)

AUTHORS: Moskvin, N. I., Shapiro, M. B., Gavrilov, V. M.

TITLE: Bright Quenching of Steel in a 50% Solution of Sodium Hydroxide is Free of Deformation (Svetlaya bezdeformatsionnaya zakalka stal' v 50%-nom rastvore yedkogo natra)

PERIODICAL: Sb. statey. Vses. n-1 na konstrukt. in-t khim. mashinostr. 1957, Vol 23, pp 67-75

ABSTRACT In the process of investigating the quenching hardenability of aqueous NaOH solutions it was established that, compared with other quenching media, the employment of a 50% NaOH solution for quenching of carbon and low-alloy steels ensures a more complete and uniform quenching combined with a lesser degree of deformation and lower susceptibility to cracking. A clean surface is obtained after quenching. During cooling of steel in a 50% NaOH at a temperature of 20°C the rate of cooling in the range of temperatures between 750 and 550° is 700-1400°/sec, whereas in the region of martensite transformations it amounts to 50-100°/sec. In order to stabilize the operation of the alkaline bath, the surface of the solution should be coated with a layer of oil 10-20 mm thick. M. Ch.

Card 1/1

MOSKVIN, N.I., inzh.

Investigation of metallic materials resistant to corrosion in
molten typographic zinc alloys. Trudy NIIKHIMMASH no.34:12-25 '60.
(MIRA 14:1)

(Metals—Corrosion)

(Zinc alloys)

311.51

S/184/62/000/001/001/001
D041/D112

18.8310
11.1160

AUTHORS: Shapiro, M.B., Kristal', M.M., Moskvin, N.I., Masarov, A.M.
Engineers

TITLE: High-strength acid-proof steel for chemical machine building

PERIODICAL: Khimicheskoye mashinostroyeniye, no. 2, 1962, 28-31

TEXT: The authors tested X15H910 (Kh15N9Yu) high-strength austenitic martensite steel at NIIKhimMASH in order to determine its suitability for use in machines operating in aggressive media. The effect of thermal treatment on the structure of the steel, on its mechanical properties and on its resistance to corrosion in various media was investigated. Cold treatment increased the hardness. After normalizing from 1,000°C, the steel had a purely austenite structure; reducing the normalizing temperature to 900°C and below, increased the amount of carbides and changed the position of the martensite point and the quantity of formed martensite. After cold treatment and aging, the hardness values were higher at all temperatures. The

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S/184/62/000/001-10: 1001
5041/D112

High-strength acid-proof ...

maximum strength was obtained after the aging of steel which was previously normalized at 750-800°C and cold-treated. The maximum strength was obtained after aging at 450-475°C for 1 hour. Maximum plasticity and toughness were obtained by aging at 350°C, whereby the strength was still high enough. The corrosion tests were carried out on sheets, forged, rolled and welded specimens of various thicknesses, heat-treated at various normalizing and aging temperatures. The maximum corrosion rate was observed in HNO₃ as well as in an acid solution of copper nitrate after aging at 350°C. An increase of the aging time from 1 to 5 hours (at 350°C) showed that the corrosion resistance decreased in 65% HNO₃ by approximately 1.5 times. The greatest corrosion resistance was observed after tempering at 1,000 to 1,100°C, when the steel had an almost pure austenite structure. The greatest intercrystalline corrosion was observed after normalizing at 750°C. The steel was successfully used in some test machines developed at the NIIKhIMMASH, and is recommended for the valve plates of compressors. Further research is needed before the steel can be used for designs of similar type. There are 7 figures, 2 tables, and 3 references: 1 Soviet-British and ...

Card 2/3

High-strength acid-proof ...

3/18/61 1000, 00
DOA/5116

Soviet-bloc. The two references to English-language publications
follows: I. Halbig, O.B. Ellis, Observation on the corrosion of
tough strength stainless steels for aircraft, "Corrosion", vol. 14, no. 11,
1958; W.K. Boyd, H.A. Pray, "Corrosion", vol. 14, no. 11, 1958.

X

Card 3/3

MOSKVIN, N.I.

S/277/63/000/004/002/013
A004/A127

AUTHORS: Shapiro, M.B., Belinkiy, A.L., Moskvin, N.I.

TITLE: Prospects of developing and utilizing new high-strength stainless steels in chemical machine building

PERIODICAL: Referativnyy zhurnal. Otdel'nyy vypusk. 48. Mashinostroitel'nyye materialy, konstruktsii i raschet detaley mashin, no. 4, 1963, 11, abstract 4.48-72. (Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., 1962, no. 40, 52 - 61)

TEXT: A survey on new tendencies in developing high-strength corrosion-resistant steels that can be used in chemical machine building. Precipitation-hardened steels of the austenite-ferrite and austenite-martensite classes are mostly used. Austenite-ferrite steels possess high mechanical and casting properties and do not tend to corrosion embrittlement. Thus, the yield point e.g. of austenite-ferrite steels exceeds that of austenitic steels by a factor of 3 - 4. Austenite-martensite steels have also a high strength and a sufficient ductility, corrosion resistance and weldability. There are 12 references.
[Abstracter's note: Complete translation.]

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8/277/63/000/004/004/013
A004/A127

AUTHORS: Shapiro, M.B., Moskvin, N.I., Kristal', M.M., Makarov, V.M.

TITLE: New high-strength stainless steel

PERIODICAL: Referativnyy zhurnal. Otdel'nyy vypusk. 48. Mashinostroitel'nyye materialy, konstruktsii i raschet detaley mashin, no. 4, 1963, 12, abstract 4.48.80. (Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., 1962, no. 40, 62 - 79)

TEXT: The authors present the results of investigating the effect of heat treatment (normalizing, cold treatment, ageing) on the mechanical properties and corrosion resistance of the new X15H9Ю (Kh15N9Yu) precipitation-hardened stainless steel having the following composition (in %): C 0.05 - 0.09, Si 0.34 - 0.59, Mn 0.31 - 0.6, Cr 14.3 - 16, Ni 7.9 - 9.5. It is pointed out that an optimum combination of strength, ductility, notch toughness and corrosion resistance of the Kh15N9Yu steel is obtained after the following heat treatment: normalizing at 975°C, cold treatment at -70°C for 2 hours, ageing at 350 - 400°C for 1 - 2 hours; then the following values

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New high-strength stainless steel

S/277/63/000/004/004/013
A004/A127

are obtained: $\sigma_b \geq 128$, $\sigma_B \geq 90$ kg/mm², $\delta \geq 12\%$, $\psi = 40\%$, and $a_k \geq 5$ kgcm/cm².
After this optimum heat treatment of the steel it does not tend to inter-crystalline corrosion and is not much inferior to the 1X18H9T (1Kh18N9T) steel as to general corrosion resistance in a number of media.

[Abstracter's note: Complete translation.]

Card 2/2

L 6708-65 EWP(m)/EWP(k)/EWP(c)/ EWP(b) PP-4 EJM/JD/HW/WB
ACCESSION NR: AR4044231 S/0137/64/000/006/1074/1074

SOURCE: Ref. zh. Metallurgiya, Abs. 6I422

53

AUTHOR: Kristal', M. M.; Moskvin, N. I.; Khalizova, V. N.

TITLE: The influence of cold deformation and heat treatment of steel Kh15N9Yu on corrosion resistance

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinost., vy*p. 45, 1963, 55-65

TOPIC TAGS: steel, cold deformation, heat treatment, corrosion resistance, cold plastic deformation/Kh15N9Yu steel

TRANSLATION: Gives the results of an investigation of the influence of cold plastic deformation by rolling and aging at 350-550° of steel Kh15NgYu on its corrosion resistance. Cold plastic deformation of steel Kh15N9Yu with a degree of deformation of up to 60%, causing the appearance of up to 75% of the α-phase, in the absence of subsequent aging does not lead to a lowering of the resistance of steel to

Card 1/2 * Kh15NgYu should be Kh15NgYu

L 6708-65

ACCESSION NR: AP4044231

general and intercrystalline corrosion in oxidizing media. Resistance to general and intercrystalline corrosion of steel Kh15N9Yu subjected to hardening by cold plastic deformation or sub-zero treatment is also not lowered after heating at temperatures not causing diffusion processes and separation of Cr carbides. Heating of steel Kh15N9Yu having austenite-martensite structure, at temperatures $>400^{\circ}$ with holding during heating for 1 hour, and also at 400° and holding >12 hours, causes a sharp lowering of its resistance to general and intercrystalline corrosion.

SUB CODE: MM)

ENCL: 00

Card 2/2

L 18834-65. EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b) PP-L MJW/JD/HW/WB
ACCESSION NR: AP4047503 S/0129/64/000/010/0012/0015

AUTHOR: Moskvin, N. I.; Belinkiy, A. L.; Kristal', M. M. ¹⁸

TITLE: Effect of cold working¹⁸ and heat treatment¹⁸ on the structure¹⁸
and properties of Kh15N9Yu steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10,
1964, 12-15, and bottom half of insert facing p. 24

TOPIC TAGS: Kh15N9Yu steel, precipitation hardenable steel, steel
cold working, steel strainhardening, steel heat treatment, steel
property, steel corrosion resistance

ABSTRACT: Two heats of Kh15N9Yu precipitation-hardenable steel
were tested for the effect of strain hardening and heat treatment on
the structure and mechanical and corrosion properties of cold-rolled
strip, a prospective material for high elasticity parts of chemical
equipment. Three variants of the treatment were selected, depending
on the strength and ductility desired. Cold-rolled strip with an
initial reduction of 25--30%, annealed at 975C followed by air cool-
ing and subzero treatment at - 70C for 4 hr and aging at 475C for

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L 18834-65

ACCESSION NR: AP4047503

1 hr, had a tensile strength of 150 kg/mm² at an elongation of 10%. A tensile strength of 165 kg/mm² at an elongation of 5% was obtained by cold rolling the strip to a total reduction of 40--60% and aging at 475C for 1 hr. The highest tensile strength, 190 kg/mm², at an elongation of 2 - 3% was achieved by annealing at 975C followed by air cooling and subzero treatment at - 70C for 2 hr, cold rolling with a reduction of 25%, and aging at 475C for 1 hr. Experimental parts of air and coke - gas compressors treated according to the above variants had 3--5 times longer service life than that of parts made of 70S2KLA or U8A steels. Cold rolling does not lower the steel resistance to general and intergranular corrosion in oxidizing media. Aging at 400C and above for more than 2--3 hr lowers the corrosion resistance. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: NIKHIMASH

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 002 OTHER: 000

Card 2/2

(W) L 10892-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/HW
 ACC NR: AP6000599 SOURCE CODE: UR/0133/65/000/012/1129/1132

AUTHOR: Bushmakín, Yu. A.; Bryndín, V. V.; Moskvín, N. I.; Grashchenkov, P. M.;
MeLikhov, P. M. 44.55 44.55 44.55 44.55
 44.55 76
 69B

ORG: none

TITLE: Development of production techniques for Kh15N9Yu strip intended for valve springs

SOURCE: Stal, no. 12, 1965, 1129-1132

TOPIC TAGS: valve, compressor valve, valve spring, spring steel, stainless steel, precipitation hardenable steel, steel property /E1904 steel, Kh15N9Yu steel

ABSTRACT: The suitability of Kh15N9Yu (E1904) precipitation-hardenable stainless steel for flat valve springs of compressors operating in a tropical environment or aggressive gaseous media has been studied. Thirteen experimental 50-kg heats containing 0.05-0.09% carbon, 14.00-15.42% chromium, 7.70-8.63% nickel, and 0.73-1.10% aluminum, and with an initial martensite content varying from 7 to 60%, were melted in a laboratory induction furnace. The ingots were rolled into a strip 2.5 mm thick and 60 mm wide, annealed at 1050-1070C, and water quenched. Then five strips with an initial martensite content of 8, 27, 34, 45 and 60% were cold rolled with reductions up to 80% and aged at 350-500C. Two other heats with an initial martensite content of 20 and 40% received the same treatment, but prior to cold rolling were

Card 1/2 UDC: 669.14.018:27

L 10892-66

ACC NR: AP6000599

refrigerated at -70C for 6 hr. Results of tensile tests showed that heats with an initial martensite content over 25% are not suitable for springs owing to low ductility. In steels with an initial martensite content of 5-25%, the mechanical properties can be varied over a very wide range: between 100 kg/mm² tensile strength at 30% elongation and 200 kg/mm² tensile strength at 2% elongation. For the lowest strength level, 140-170 kg/mm², the recommended strengthening treatment (after annealing) consists of cold-rolling with a reduction of 40-50% and aging at 400-480C for 1 hr. For the highest strength level, over 190 kg/mm², the annealed strip should be refrigerated at -70C prior to cold rolling and aging. Orig. art. has: 3 figures and 2 tables. [DV]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 4172

NW

Card 2/2

MOSKVIN, N.I.

The most important thing is the production of feeds! Zemledelie
27 no.8:9-11 Ag '65. (MIRA 18:11)

1. Sekretar' Smolenskogo oblastnogo komiteta Kommunisticheskoy
partii Sovetskogo Soyuzn.

SHAPIRO, M.B., inzh.; BELINKIY, A.L., kand. tekhn. nauk; MOSKVIN, N.I.,
inzh.

Prospects of the development and introduction of the new types
of steel in the manufacture of chemical machinery. Khim. mashino-
str. no.1: 28-31 Ja'63 (MIRA 17:7)

MOSEVIN, N.P.

Simplified system of supplying bitumen and mazut to the asphalt
concrete plant. Avt.dor.18 no.1:22 Ja-F '55. (MIRA 6:4)
(Asphalt concrete)

MOSEVIN, N.P.

Automatic batching barrels for bitumen. Avt.dor. 19 no.4:25-26
Ap '56.

(MLRA 9:8)

(Bitumen)