

.Automation of Rolling Mills

SOV/1969

Automatic control of the main drive of a reversing rolling mill
Automatic control of screwdown [mechanism] of a reversing rolling mill

79
82

Bibliography

86

AVAILABLE: Library of Congress

GO/fal

7-21-59

Card 5/5

SOV/117-59-4-4/36

The Automation of Grinding Machines.

travel, after the end of the grinding process, which takes from 0.9 to 1.7 minute per sleeve. The grinding wheels "TA3K44SMK" and "KA3EB46SMK" last for 90-200 and 60-85 sleeves, respectively. One operator can operate two automated grinders. The electric block diagram of the system is shown. It is mentioned that soda water is used as coolant. There is 1 diagram.

Card 2/2

ZAKHAROV, M.F., kand.tekhn.nauk; SMIRNOV, Yu.V., inzh.; SHKATOV, Ye.F.,
inzh.

New way of braking asynchronous short-circuited motors by the
method of three-phase short-circuiting. *Izv.vys.ucheb.zav.;*
energ. 3 no.4:40-46 Ap '60. (MIRA 13:6)

1. Ivanovskiy energeticheskiy institut imeni V.I.Lenina. Pred-
stavlena elektromekhanicheskoy seksiiy nauchno-tekhnicheskoy
konferentsii.

(Electric motors, Induction)

SMIRNOV, Yu. V., inzh.

Theoretical principles and technological and economic comparison
of voltage regulators with moving parts. Vest. elektroprom. 32
no. 12:53-60 D '61. (MIRA 14:12)
(Voltage regulators)

SMIRNOV, Yuriy Vasil'yevich, aspirant

Analysis of a.c. voltage regulators serving as passive four-terminal networks. Izv.vys.ucheb.zav.; elektromekh. 5 no.3:298-307 '62.
(MIRA 15:4)

1. Kafedra elektrooborudovaniya promyshlennykh predpriyatiy
i ustanovok Ivanovskogo energeticheskogo instituta.
(Voltage regulators) (Electric networks)

SMIRNOV, Yu.V., inzh.

Problems concerning electric drives with saturable reactors and semiconductor rectifiers. Izv. vys. ucheb. zav.; energ. 5 no.10:52-63 0 '62. (MIRA 15:11)

1. Ivanovskiy energeticheskiy institut imeni V.I. Lenina. Predstavlena kafedroy elektrifikatsii promyshlennykh predpriyatiy i ustanovok. ~~.....~~
(Electric driving)

SMIRNOV, Yu.V., inzh.

Electric drive based on a regulating autotransformer and semiconductor rectifier. Izv. vys. ucheb. zav.; energ. 6 no.5:45-54 My '63.
(MIRA 16:7)

1. Ivanovskiy energeticheskiy institut imeni V.I.Lenina.
Predstavlena kafedroy elektrifikatsii promyshlennykh predpriyatii.
(Electric driving)

SMIRNOV, Yu.V., inzh.

Calculation of the operating modes of multiphase full-wave
rectifier circuits. Izv. vys. ucheb. zav.; energ. 7 no.5:
29-37 My '64. (MIRA 17:7)

1. Ivanovskiy energeticheskiy institut imeni V. I. Lenina. Pred-
stavlena kafedroy elektrifikatsii promyshlennykh predpriyatiy i
ustanovok.

SMIRNOV, Yu.V., incl.

Design of an optimum magnetic power amplifier, Elektrotehnika
35 no.6:15-19 Jn '64, (MIRA 17:8)

SMIRNOV, Yu.V., inzh.

Design of a voltage regulator with a sliding contact. Elektro-
tehnika 35 no.10:51-52 0 '64. (MIRA 17:11)

L 22704-66 EWT(1) SCTB DD/GS/JXT(RML)

ACC NR: AT6009452

SOURCE CODE: UR/0000/65/000/000/0302/0305

AUTHOR: Malakhov, A. N.; Romanov, I. V.; Smirnov, Yu. V.; Ul'yanov, M. Yu.

ORG: none

53
B+1

TITLE: Biological indication of a UHF electromagnetic field

SOURCE: AN SSSR. Nauchnyy sovet po kompleksnoy probleme Kibernetika. Bionika (Bionics). Moscow, Izd-vo Nauka, 1965, 302-305

TOPIC TAGS: medical experiment, bionics, UHF, electromagnetic field

ABSTRACT: The effects of an SHF electromagnetic field on viability and conditioned reflex activity were investigated in a series of experiments on pleroceroids and white mice. In the first experimental series, 5 groups of pleroceroids were irradiated with UHF and SHF waves (7.6 m to 13.7 cm) for periods of 10 to 60 min to determine survival rates. Following irradiation each group of pleroceroids was placed in a physiological solution and kept at an 18° temperature. Death was determined by absence of reaction to needle pricks and to heating, and also by body tone condition. Findings show that the survival rate for

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ACC NR: AT6009452

experimental groups is 4.5 to 5.62 days compared to 7.6 days for the nonirradiated control group. With increase of irradiation period at the same frequency, the survival rate decreases. In another series, conditioned reflex activity in a UHF field was studied in 5 adult male white mice of the same line and age. Mice were conditioned in a plastic chamber (20 x 10 x 7 cm) divided in half by a partition with an opening and push buttons; the electric signal systems were under the floor. Intensity of irradiation was of the order of 20 mwt/cm. Experiments were staged daily using different sequences of UHF stimuli. The development of conditioned reflexes in response to UHF electromagnetic stimuli was difficult and slow and the effects were temporary. Orig. art. has: 2 tables. [06]

SUB CODE: 06/ SUBM DATE: 26Oct65/ ORIG REF: 003/ AID PRESS: 4229

Card

2/2 BK

DUBINSKIY, A.M., kand.tekhn.nauk; SHIMANOVSKIY, V.N., inzh.;
SMIRNOV, Yu.V., inzh.; ZAKRZHEVSKIY, A.Ye., inzh.

Precast reinforced shells in the U.S.S.R. Stroitel'skonstr.
no.1:5-20 '65. (MIRA 19:1)

1. Nauchno-issledovatel'skiy institut stroitel'nykh
konstruktsiy Gosstroya SSSR, Kiyev (for Shimanovskiy,
Smirnov, Zakrzhevskiy).

NEVSKIY, V.A.; S. IRNOV, Z., red.

[Bibliography of Russian otorhinolaryngological literature
(1708-1962) in five volumes] Bibliografiya otechestvennoi
otorinolaringologicheskoi literatury (1708-1962 gg.) v 5
tomakh. Moskva, Vses. nauchn. med. ob-vo otorinolaringo-
logov. Vol.1. 1963. 592 p. (MIRA 17:6)

MESHALOVA, A.N., red.; KRESTOVNIKOVA, V.A., red.; VYGODCHIKOV, G.V.,
red.; SMIRNOV, Z., red.; KLEUSOVA, A., tekhn. red.

[Transactions of the Scientific Conference on the Use of
Polyvalent Vaccines] Sbornik trudov Nauchnoi konferentsii
po probleme assotsiirovannoi vaktsinatsii, 1958. Moskva,
Biuro nauchnoi informatsii, 1959. 253 p. (MIRA 16:5)

1. Nauchnaya konferentsiya po probleme assotsiirovannoy vak-
tsinatsii, 1958. 2. Glavnoye upravleniye institutov vaktsin
i syvorotok Ministerstva zdravookhraneniya SSSR (for Meshalova).
(Vaccination--Congresses)

STUDITSKIY, A.N., *otv. red.*; GRAYEVSKIY, B.Ya., *red.*; GRIGOR'YEV, T.A., *red.*;
YELISEYEV, V.G., *red.*; ZBARSKIY, I.B., *red.*; LIOZNER, L.D., *red.*;
MITSKEVICH, M.S., *red.*; FRIDENSHTEYN, A.Ya., *red.*; KHRUSHCHOV, G.K.,
red.; CHENTSOV, Yu.S., *red.*; SMIRNOV, Z., *red.*; LAVRENT'YEVA, G.,
tekhn. red.

[Transactions of the Second Histological Conference; plastic and
restorative processes] *Plasticheskie i vosstanovitel'nye protsessy*;
trudy Vtoroi gistologicheskoi konferentsii. Moskva, Mosk.
nauchn. ob-vo anatomov, gistologov i embriologov, 1959. 319 p.
(MIRA 14:5)

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im. M.V. Lomonosova, Moskva (for Studitskiy). 2. Laboratoriya radio-
biologii Instituta morfologii zhivotnykh im. A.N. Severtseva AN SSSR,
Moskva (for Grayevskiy, Zbarskiy) 3. Kafedra gistologii, i embrio-
logii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo in-
stituta, Leningrad (for Grigor'yev). 4. Kafedra gistologii i emb-
riologii 1-go Meditsinskogo instituta im. Sechenova, Moskva (for
Yeliseyev). 5. Gruppy biokhimii kletochnykh struktur Instituta mor-
fologii zhivotnykh im. A.N. Severtseva AN SSSR, Moskva (for Zbarskiy).
6. Laboratoriya rosta i razvitiya Instituta eksperimental'noy bio-
logii AMN SSSR, Moskva (for Liozner). 7. Tsentral'naya nauchno-
issledovatel'skaya Laboratoriya 2-go Moskovskogo meditsinskogo in-
stituta im. N.I. Pirogova, Moskva. (for Khrushchov).
(HISTOLOGY--CONGRESSSES)

BOGUSH, L.K., prof., red.; KOLESNIKOV, S.A., prof., red.; SERGEYEV, V.M.,
kand. med. nauk, red.; SMIRNOV, Z., red.; LAVRENT'YEVA, G.,
tekh. red.

[Technic of mitral commissurotomy; transactions of the First
Symposium on the Technic of Mitral Commissurotomy, Moscow, 1960]
Tekhnika mitral'noi komissurotomii; trudy. Moskva, In-t grudnoi
khirurgii, 1960. 95 p. (MIRA 15:1)

1. Simpozium po tekhnike mitral'noy komissurotomii. 1st, Moscow,
1960. 2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for
Bogush).

(MITRAL VALVE---SURGERY)

KOSILOV, S.A., prof., red.; SMIRNOV, Z., red.; CHUMAKOV, G., tekhn. red.

[Methods in physiological investigations of work processes] Metody fiziologicheskikh issledovaniy trudovykh protsessov. Moskva, In-t gigieny truda i profzabolevaniy AMN SSSR, 1960. 127 p.
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NIKULIN, K.G., prof., red.; SMIRNOV, Z., red.; LAVRENT'YEVA, G., tekhn.
red.

[Angina pectoris and myocardial infarct; collection of articles
of the Department of Typological Therapy in honor of Professor
A.I.Geffer's 60th birthday] Grudnaia zhaba i infarkt miokarda;
sbornik trudov kafedry fakul'tetskoj terapii, posviashchennyi
60-letiiu professora A.I.Gefera. Pod red.K.G.Nikulina. Gor'kii,
1960. 382 p. (MIRA 15:1)

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(ANGINA PECTORIS) (HEART—INFARCTION)

BAGDASAR'YAN, S.M., prof.; IVANOV, B.A.; PREOBRAZHENSKAYA, M.M.;
RZHANOVICH, P.K.; SHUR, Ye.I.; SAFONOVA, M.I.; SMIRNOV, Z.,
red.

[Dissertations for the degree of Doctor and Candidate of
Medical Sciences defended from 1951 to 1955] Dissertatsii
na stepen' doktora i kandidata meditsinskikh nauk, za-
shchishchenrye v 1951-1955 gg. Pod red. S.M. Bagdasar'iana.
Moskva. Vol.3. Pt.1. Bibliografiia. 1962. 303 p.
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SMIRNOV-ALY^YEV, G. A.

Teoriia avtoskrepneniia tsilindrov. Moskva, Oborongiz, 1940. 284, diagrs.
(1 fold)

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Theory of automatic coupling of cylinders.

NN

DLC: TA492.C9S5

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of Congress, 1953.

СМЕРНОВ-АЛТАЕВ, Г. А.

Сопrotivlenie materialov plasticheskim deformatsiiam; kratkie osnovy.
Moskva, Mashgiz, 1949. 247 p. 78 illus.

Bibliography: p. 244-245.

Resistance of materials to plastic deformations; fundamentals.

ELC: TG265.S59

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

SMIRNOV#ALYAY.V, G. A., et al.

Technology

Cold stamping in the manufacture of instruments. Moskva, Mashgiz, 1950.

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S. SMIRNOV-ALYAYEV, G. A. (Leningrad)

USSR/Engineering - Plastic Deformation of Metals 1951

"Analysis of Plastic Deformation of Metals by Method of Microstructure Measurements," V. M. Rosenberg and G. A. Smirnov-Alyayev (Leningrad)

Inzhen Sbor, Vol 10, pp 3-16

Describes method of detg deformation of small particles, carried beyond limit of elasticity, of surface layer of metal detail by microscopic measurements. By means of these measurements the character of reciprocal displacements of individual

257T58

metallic grains in the microscopic field can be detd, following which a mathematical treatment of the resultant data enables one to establish degree and type of deformation. Theoretical analysis tested experimentally. Results were satisfactory.

SMIRNOV-ALYAYEV, G.A.

Smirnov-Alyayev,
G.A.

Works on the applied theory
of plasticity

Leningrad Military Mechanical
Institute

SMR SW-AMAYEV, Georgiy Aleksandrovich

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TEORIYA PLASTICHEKIKH DEFORMATSIY METALLOV; VEDENIYA KOMBINIROVANOGO FIZI-
ZMESHENIYA (THEORY OF THE PLASTIC DEFORMATION OF METALS, BY) G. A. SMIR-
NOV-AMAYEV I V. M. ROZEMBERG. MOSKVA, MASHGIZ, 1956. 366 p. ILLUS., DIAGS.,
TABLES. "IZVESTIYA": p. 364-365.

137-58-5-9556

SMIRNOV ALYAYEV, G.A.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 105 (USSR)

AUTHOR: Smirnov-Alyayev, G.A.

TITLE: Methods of Engineering Analysis in the Technology of the Press-working of Metals (Inzhenernyye metody raschetov v tekhnologii obrabotki metallov davleniyem)

PERIODICAL: V sb.: Inzhenern. metody rascheta tekhnol. protsessov obrabotki metallov davleniyem. Moscow - Leningrad, Mashgiz, 1957, pp 5-19

ABSTRACT: The major trends in the development of the theory of plasticity and current methods of stress analysis are examined.

- M. Ts.
1. Metals--Processing
 2. Metals--Deformation
 3. Metals Stresses
 4. Stress analysis

Card 1/1

137-58-4-7106

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 115 (USSR)

AUTHOR: Smirnov-Alyayev, G.A.

TITLE: New Trends in the Development of the Theoretical Fundamentals of Metal Forming (Novyye napravleniya v razvitii teoreticheskikh osnov obrabotki metallov davleniyem)

PERIODICAL: V sb.: Kuznechno-shtampovochn. proiz-vo. Leningrad Lenizdat, 1957, pp 46-50

ABSTRACT: The results of work in the field of development of the theoretical fundamentals of the plastic forming of metals conducted by the Metal-forming Faculty and the Committee on Plasticity Theory of the NTO MASHPROM.

Ye. L.

1. Metals--Plasticity--Theory

Card 1/1

Smirnov-Alyayev, G. A.

"Engineering Calculation Methods in the Technology of Metal Working Under Pressure", pp 108-110 from book "Inzhenernyye Metody Rascheta Tekhnologicheskikh Protesessov Obrabotki Metallov Davleniyem", Edited by V. S. Smirnov, Moscow-Leningrad, Mashgiz, 1957, 216 pp (Kniga 42).

SMIRNOV-ALYAYEV, G.A., prof., doktor tekhn. nauk.

Variable intensity of stresses over the thickness of plates subjected
to finite plane-parallel pressing. Trudy LVMI no.6:6-27 '57.
(Elastic plates and shells) (MIRA 11:5)

18(7); 25(1)

PHASE I BOOK EXPLOITATION

SOV/3079

Smirnov-Alyayev, Georgiy Aleksandrovich, Doctor of Technical Sciences,
Professor

Kratkive osnovy sovremennykh metodov rascheta protsessov obrabotki
metallov davleniyem (Brief Discussion of the Fundamentals of
Modern Design Methods for Metal-forming Processes) Leningrad,
1958. 98 p. (Series: Kovka i goryachaya shtampovka) 6,200
copies printed.

Sponsoring Agencies: Obshchestvo po rasprostraneniyu politicheskikh
i nauchnykh znaniy RSFSR. Leningradskiy dom nauchno-
tekhnicheskoy propagandy, and Nauchno-tekhnicheskoye obshchestvo
mashinostroitel'noy promyshlennosti. Leningradskoye pravleniye.
Komitet teorii plastichnosti.

Ed.: P. V. Kamnev; Tech. Ed.: D. P. Freger.

PURPOSE: This book is intended for technical personnel in the
field of metal forming. The book may also be useful to students
and aspirants specializing in the theory and practice of metal
forming.

Card 1/4

Brief Discussion (Cont.)

SOV/3079

COVERAGE: The book deals with the fundamentals of metal forming, including the mechanics of plastic deformations and the simplification of approximate design methods. The application of design methods to such operations as hot forging and cold stamping is discussed. Examples of the use of auxiliary tables for the design calculations involved in metal-forming operations are presented. No personalities are mentioned. There are 8 references, all Soviet.

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Brief Discussion (Cont.)

SOV/3079

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Brief Discussion (Cont.)

SOV/3079

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AVAILABLE: Library of Congress (TS225.S57)

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VK/mmh
2-19-60

SMIRNOV-ALYAYEV G.
ZHOLOBOV, V.V., kand. tekhn. nauk; SMIRNOV-ALYAYEV, G.A., doktor tekhn. nauk,
prof.

"Steel pressing" by L.V. Prozorov. Reviewed by V.V. Zholobov,
G.A. Smirnov-aliasv. Vest. mash. 38 no.4:84-85 Ap '58. (MIRA 11:3)
(Steel forgings)
(Prozorov, L.V.)

SMIRNOV-ALYAYEV, G.A.

Scientific conference on engineering methods for designing
processes of shaping metals by pressure. Kuz.-shtan, proizv.
1 no.5:47-48 My '59. (MIRA 12:10)
(Forging)

S/182/60/000/001/001/008
A161/A029

AUTHOR: Smirnov-Alvayev, G.A.

TITLE: Monotony of Plastic Deformation in Metalworking by Pressure ¹⁶

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 1, pp. 3 - 7

TEXT: The conception of monotonous (with constant sign) and non-monotonous deformation in cold pressing process is suggested for use in engineering calculations. Deformation is calculated with the use of a "material fiber" (a short line traced on metal before deformation) (Fig. 1), and a circle (Figs. 2 and 3), and three characteristic examples are discussed: 1) Plastic twist of a rod. 2) Plastic compression of a cylinder on butt ends by parallel plates. 3) A very complex deformation process in the surface layer of metal contacting with the tool surface, where the shape of a separate "material particle" deforms the stronger, the closer it is to the surface. The "monotony" criterion provides a reliable means for designers calculating the pressing process to select the tool shape and the process parameters. The calculations can be based on approximate plasticity diagrams obtained in tests with simple tension. There are 4 figures and 3 Soviet references. ✓

Card 1/1

S/122/60/000/004/008/014
A161/A130

AUTHOR: Smirnov-Alyayev, G.A., Professor Doctor of Technical Sciences
TITLE: Resistance of materials to plastic deformation on calculations of pressure working processes
PERIODICAL: Vestnik mashinostroyeniya, no. 4, 1960, 45 - 50

TEXT: A group of staffers of the "Obrabotka materialov davleniyem" (Pressure Working of Materials) Chair of Leningradskiy voyenno-mekhanicheskiy institut (Leningrad Military Mechanics Institute) has been working for years on theoretical foundations for a new teaching subject - "Resistance of materials to plastic deformation". It has to become a separate science branch. The work is yet in the first stage of development. The author outlines in general terms the essence of the subject and emphasizes that even with all the simplifying assumptions attempted before now, a general mathematical solution of the problem is extremely difficult if not downright impossible. Possible additional simplifying assumptions are discussed. The new discipline consists in development of solution methods being as simple as possible for numerical integration of differential equations, reference tables, graphs and other possible auxiliary means. It is a purely engineer-

Card 1/3

S/122/60/000/004/008/014
A161/A130

Resistance of materials ...

body), making it possible to find a direct relation between the stress and the deformation components. This applies not to small-volume deformations alone but to total final as well. A generalized strain-hardening curve (independent from the strain kind) will also be used. An established rule is not to deviate from the condition of monotony of major axis turns of stress-strain system in the Euler space, and immobility of them (as the first consequence of the first monotony condition) in the Lagrange space. This rule makes it possible to select such a transferable coordinate system that its axes will coincide with the major strain axes in any selected small body particle during the entire deformation process. Moreover, it may be said that the discipline bases on the postulate of transformation of elementary sphere into ellipsoid being assumed in the mechanics of solid masses. It will include the results of the latest investigations in the theory of tension, compression, bend and torsion, as well as data on specific laboratory work details. The solution of outlined problems will contribute to progress in the industry. There are 5 Soviet-bloc references.

Card 3/3

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1496, 1045, 1454

S/148/60/000/009/009/025
A161/A030

AUTHORS: Smirnov-Alyayev, G.A., and Gun, G.Ya.

TITLE: An approximate method for the solution of stationary problems of viscous-plastic flow in volume

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 9, 1960, 62-67

TEXT: Up to now no accurate solution could be found for the problem in view of the great mathematical difficulties. The author suggests an approximate method omitting the minor factors and reducing the problem to a two-dimensional one. The flow process is analyzed on one of the major pressure working processes - a prismatic or cylindrical body moving in axial direction and subjected to plastic deformation in contact with a tool. An element is separated by two perpendicular sections Ω and Ω_1 (Fig.1), with depth dz at the time moment t_0 , and the matrix of derived velocity components V on the rectangular coordinates $x, y,$ and z is considered and the minor matrix elements are eliminated. The simplifying kinematic hypo-

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An approximate method for the solution...

20270
S/148/60/000/009/009/025
A161/A030

$$V_x + V_y \operatorname{tg} \beta + V_{z_0} \cdot \operatorname{tg} \varphi = 0 \quad (42)$$

The equations system makes possible the construction of a velocities field of body under deformation, and the determination of specific pressure and friction force on the surface. There are 2 figures and 3 Soviet-bloc references:

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut (Leningrad Military Mechanical Institute)

SUBMITTED: 23 February 1960

Card 3/4

BR

PHASE I BOOK EXPLOITATION

SOV/5920

Smirnov-Alayev, Georgiy Aleksandrovich, Professor, Doctor of Technical Sciences

Soprotivleniye materialov plasticheskoy obrabotki materialov (Resistance of Materials to Plastic Deformation; Engineering Methods of Calculating the Process of Plastic Working of Materials) 2d ed., rev. and en. Moscow, Mashgiz, 1961. 462 p.
Errata slip inserted. 8000 copies printed.

Reviewer: V. A. Gastev, Professor, Doctor of Technical Sciences; Ed.: V. M. Rozenberg, Candidate of Technical Sciences; Ed. of Publishing House: V. P. Vasil'yeva; Tech. Ed.: O. V. Speranskaya; Managing Ed. for Literature on the Design and Operation of Machines: (Leningrad Department, Mashgiz): F. I. Fetisov, Engineer.

PURPOSE: This book is intended for technical personnel, designers, and process engineers in the machine-building industry who are concerned with problems of the plasticity of materials and their pressure working. It may also be used by aspirants and students of mechanical engineering schools of higher technical education.

Card 1/30

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3 1076 000/001/004/015
AC38 A157

AUTHORS: Smirnov-Alyayev, G. A., and G. Ya. Gub.

TITLE: Axially symmetric problem of the theory of plastic flow during the reduction, expansion and drawing of tubes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Chernaya metallurgiya, no. 1, 1961, 89 - 99

TEXT: The authors analyze problems connected with the calculation of stresses and deformations during the reduction, expansion and drawing of thin walled and thick walled tubes. They use the approximated method which they developed on the basis of the theory of ductile plastic flow [Ref. is G. A. Smirnov-Alyayev, G. Ya. Gub. Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1960, no. 9]. The authors present first the basic system of equations for the case of a deformed body with cross section Ω , representing a ring, limited by the circumferences of radii R_0 and r_0 (R_0 - radius of the contact contour, r_0 - radius of the free contour). The deformed body interacting with the tool over the contact surface $S = R(r)$ (Fig. 1). Since one of the body surfaces is free, its deformed state is

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A033/A133

Axially symmetric problem of the theory of...

not known beforehand and depends generally on the axial stresses, on the ratio m to R_0 and also on the friction conditions on the surface. The authors, referring to Ref. 1 base their calculation on the incompressibility equation

$$\frac{dv_r}{dr} + \frac{v_r}{r} + \frac{dv_z}{dz} = 0,$$

where v_r and v_z - radial and axial components of velocity \vec{V} . With the aid of a series of integral and differential equations they determine the velocity field and also the specific pressure and friction forces on the part - tool contact surface. Based on the abovementioned system of equations the authors then determine the change in wall thickness for the drawing of tubes without mandrel through a conical die. The importance of this problem is emphasized by the number of theoretical and experimental solutions achieved in this field [Ref. 2: A. Ludenskiy, G. Pishchikov et al., Stal', 1937, no. 3; Ref. 3: V. I. Karasevich, Tsvetnyye metally, 1946, no. 6; Ref. 4: M. Z. Yermanok, Investiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1958, no. 4; Ref. 5: V. V. Shveykin, G. Ya. Gun, Investiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1959, no. 4;

Part 2/4

SMIRNOV-ALYAYEV, G.A.; GUN, G. Ya.

Theory of longitudinal rolling. Izv.vys. ucheb. zav.; Chern. met.
no.3:108-118 '61. (MIRA 14:3)

1. Leningradskiy voyenno-mekhanicheskiy institut.
(Rolling(Metalwork))

S/148/62/000/009/004/007
E081/E535

AUTHORS: Smirnov-Alyayev G.A. and Gun G. Ya.
TITLE: The theory of finite plastic deformation of a sheet material
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.9, 1962, 150-154

TEXT: The general results are described of investigation of the deformed state by means of variational methods. Applying the current assumptions of the theory of shells, without assuming the magnitude of the strain to be small, formulae are derived which determine the main components and the main directions of strain. The strains $\epsilon_1, \epsilon_2, \epsilon_3$ in the sheet are defined by considering an elementary sphere of radius ρ in the material; under the stress system applied for time t , the sphere becomes an ellipsoid with semi-axes b_1, b_2, b_3 , and the strains are given by

$$\epsilon_1 = \ln \frac{b_1}{\rho} ; \quad \epsilon_2 = \ln \frac{b_2}{\rho} ; \quad \epsilon_3 = \ln \frac{b_3}{\rho} \quad (1)$$

It is assumed that the Kirchoff-Love hypothesis applies, and on
Card 1/3

The theory of finite plastic ...

S/148/62/000/009/004/007

EO81/E535

this basis the distortions and the strains in the sheet are expressed in differential form. The specific strain energy A is given by

$$A = \int_0^{\epsilon_i} \sigma_i d\epsilon_i \quad (12)$$

where σ_i and ϵ_i are stresses and strains defined in terms of the principal stresses and strains. Assuming a power law relation between stress and strain

$$\sigma_i = B \epsilon_i^m ; \quad A = \frac{B \epsilon_i^{m+1}}{m + 1} \quad (13)$$

the Lagrange variational equations are applied to obtain formulae which yield a theoretical solution for the deformed state of the sheet. A procedure is outlined for solving practical problems which in the general case can be formulated as follows:
 The initial shape of the die, the mechanical properties of the material and the boundary conditions (method of clamping the edges, conditions of friction on the surface, displacement of the
 Card 2/3

SMIRNOV-ALYAYEV, G.A.; GUN, G.Ya.

Principles of the theory of continuous forming on shape bending
machines. Izv.vys.ucheb.zav.; chern.met. 5 no.11:99-105 '62.
(MIRA 15:12)

1. Leningradskiy mekhanicheskiy institut.
(Sheet-metal work)

SMIRNOV-ALYAYEV, G.A.; SMIRNOV-VASIL'YEV, K.G.

Particular features of the method of microstructural measurements. Zav.lab. 28 no.6:705-707 '62. (MIRA 15:5)

1. Leningradskiy mekhanicheskiy institut.
(Deformations (Mechanics))

SEIRNOV-ALYAYEV, G.A., prof., doktor tekhn. nauk; ANGERVAKS, A.I.,
inzh., retsenzent; KAMNEV, P.V., kand. tekhn. nauk, red.

[Fundamentals of the calculation of forces in the technology of forging and stamping] Osnovy rascheta usilii v tekhnologii kovki i shtampovki. Izd.2., perer. i dop. Moskva, Izd-vo "Mashinostroenie," 1964. 91 p. (Bibliotekha kuznetsa-novatora, no.2) (MIRA 17:8)

SMIRNOV-ALYAYEV, G.A., prof., doktor tekhn. nauk; VAYNTRAUB, D.A.,
kand. tekhn.nauk; MAZO, S.G., inzh., retsenzent; TEPLITSKIY,
B.M., retsenzent; SVERDLOV, M.I., kand. tekhn. nauk, red.;
VARKOVETSKAYA, A.I., red.izd-va; CHFAS, M.A., red. izd-va;
PETERSON, M.M., tekhn. red.

[Cold stamping in the manufacture of instruments] Kholodnaia
shtampovka v priborostroenii. Izd.2., perer. i dop. Mo-
skva, Mashgiz, 1963. 434 p. (MIRA 16:11)
(Instrument manufacture) (Forging)
(Sheet-metal work)

SMIRNOV-ALYAYEV, G.A., prof., doktor tekhn. nauk; VAYNTRAUB, D.A.,
kand. tekhn.nauk; MAZO, S.G., inzh., retsenzent; TEPLITSKIY,
B.M., kand. tekhn.nauk, red.; VARKOVETSKAYA, A.I., red.izd-
va; CHFAS, M.A., red.izd-va; PETERSON, M.M., tekhn. red.

[Cold forging and sheet-metal work in the manufacture of
instruments] Kholodnaia shtampovka v priborostroenii. Izd.2.,
perer. i dop. Moskva, Mashgiz, 1963. 434 p. (MIRA 17:1)

SMIRNOV-AVERIN, A.P.

✓ 263. Use of Complexons III (EDTA, disodium salt) in the chromatographic separation of Rubidium-87 and caesium. A. P. Smirnov-Averin, G. B. Kostarev and N. N. Kozlov. *Zhur. Anal. Khim.*, 1957, 19 (3), 313-317. The rate of removal of Rb and Cs adsorbed on a column of SBS (Na form) by washing with a 1% soln. of EDTA (disodium salt) is studied by means of the radio-isotopes ⁸⁷Rb and ¹³⁷Cs. The complex of EDTA with Rb is stronger than that with Cs and this fact can be used for the separation of Rb and Cs. A review of published work on other chromatographic separations involving EDTA is given. G. S. Surra

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NS 1/1 1952

AUTHORS: Smirnov-Averin, A. P., Krot, N. N., 75-13-3-3/27
Sokolov, A. B.

TITLE: The Removal of Ethylenediaminetetraacetic Acid From Solutions
by Oxidation (Udalenie etilendiamintetrauksusnoy kisloty iz
rastvorov okisleniyem)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 3, pp 280-
-283 (USSR)

ABSTRACT: Ethylenediaminetetraacetic acid (complexon II) and its di-
sodium salt (complexon III) are very frequently used in ana-
lytical chemistry and in chemical industry (Refs 1-17). In
the performance of analyses it is sometimes necessary to re-
move the complexons from the solution to be analyzed. For this
purpose the oxidative destruction is most suitable. The in-
vestigation of the oxidation of the complexons is of interest,
as oxidizing agents may be present in the solutions to be ana-
lyzed. Only the destruction of ethylenediaminetetraacetic acid
by chlorates in a hydrochloric solution on heating (Ref 18)
and the reaction of the same compound with hydrogen peroxide
in the cold (Ref 19) were described in publications. In the
present work the authors investigated the oxidation of ethyle-
nediaminetetraacetic acid by nitric acid, nitrous acid and
ammonium persulfate. Complexon II in the cold is only very

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The Removal of Ethylenediaminetetraacetic Acid From Solutions 75 13-3-3/27
by Oxidation

slowly oxidized by nitric acid. On heating, the oxidation takes place considerably faster, but a complete destruction is not attained by long boiling with 4n-HNO₃ either. In neutral solutions complexon II is not attacked in the cold by potassium nitrate even at very high concentrations of the latter; on the heat the oxidation only takes place very slowly. Nitric acid is therefore not suitable for the quantitative destruction of complexon II. The nitrate ion does not disturb the complexometric titrations in boiling solutions either, as these titrations are carried out rapidly and in weak acidity. Nitrous acid oxidizes complexon II more strongly than nitric acid. By adding sodium nitrite in small portions to a boiling nitric acid solution of ethylenediaminetetraacetic acid its complete oxidation can be attained. When all NaNO₂ is added at once, no quantitative destruction occurs, as the nitrite is rapidly decomposed under the formation of nitric oxides. Ammonium persulfate very rapidly oxidizes complexon II in a weakly acid solution at boiling temperature. The authors worked out a method for the rapid and quantitative destruction of complexon II by oxidation with ammonium persulfate in a nitric acid solution. As the sulfate ion produced in this reaction sometimes

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The Removal of Ethylenediaminetetraacetic Acid From Solutions by Oxidation 75-13-3-3/27

disturbs the further course of analysis, a second method was also worked out which is based on the oxidation with sodium nitrite in a nitric acid solution. All performed investigations as well as the two working prescriptions are described in detail. There are 4 tables and 23 references, 5 of which are Soviet.

SUBMITTED: February 12, 1957
1. Ethyleneamines---Oxidation

Card 3/3

5(2)
AUTHORS: Krot, N. N., Smirnov-Averin, A. P., Kozlov, A. G. SOV/75-14-3-17/29

TITLE: Spectrophotometric Determination of Magnesium in Uranium
(Spektrofotometricheskoye opredeleniye magniya v urane)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 3, pp 352-355
(USSR)

ABSTRACT: After checking the stability of the solutions of eriochrome black T and its complex formation with magnesium, and after the determination of the optical density of the magnesium complex in the spectrum range of from 500 - 550 m μ eriochrome black T is recommended for the determination of magnesium also in the presence of uranium. Uranium is precipitated at pH ~ 5 with oxy-quinoline. The method permits a determination of 0.005% Mg in uranium with a maximum relative error of +3%. The complex compound between magnesium and eriochrome black T was investigated and a molecular ratio of 1 : 2 was determined. There are 3 figures, 1 table, and 10 references, 3 of which are Soviet.

Card 1/2

81744

S/089/60/008/05/03/008
B006/B056

211330
AUTHORS:

Smirnov-Averin, A. P., Galkov, V. I., Sevast'yanov, Yu. G.,
Krot, N. N., Ivanov, V. I., Sheynker, I. G., Stabenova,
L. A., Kir'yanov, B. S., Kozlov, A. G.

TITLE: Investigation of a Used Fuel Element of the First Nuclear
Power Station 19

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 5, PP. 446 - 447

TEXT: In the present paper the authors give a report on investigations of the isotope composition, the burnup and the state of the shells of used fuel elements of the Pervaya atomnaya elektrostantsiya (First Nuclear Power Station) of the Soviet Union. The fuel elements investigated had been in operation for 1160 days. Carrying out of the remote investigations is briefly described. A thin oxide film was found on the outer shells, but no damage was observed. The outer diameter was measured by means of a remote micrometer at various places, and certain deformations were found. Averaged over the entire length of the element an increase of the diameter from 14.11 ± 0.02 to 14.20 ± 0.02 mm was found. An investigation

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Investigation of a Used Fuel Element of
the First Nuclear Power Station

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B006/B056

of the inner shell showed that it had a brown deposit (about 1μ thick), which was identified as an incrustation (and not as a corrosion product of steel). The burnup was determined according to the Cs^{137} -activity, which was separated chromatographically by the sample from the element; this isotope was especially well suited because of its long half-life. Fig. 1 shows the course of burnup along the element (from bottom to top). The mean burnup amounted to 12.5%. In the case of samples which were taken at a distance of 95 cm from the lower end of the element (range of maximum burnup), the burnup was determined mass-spectrometrically. The uranium content in these samples was 4.32%, which corresponds to a burnup of 16.1%. Fig. 2 shows the distribution of the entire α -, β -, and γ -activities along the element (from bottom to top). The transuranium-isotope content was determined according to the alpha spectra and the number of spontaneous fissions. Fig. 3 shows the distribution of the isotopes Pu^{240} , Pu^{239} , and Pu^{238} , and Am^{241} along the fuel element. The $\text{Pu}^{238,239,240,241}$ and Am^{241} content is given in a Table ($2.54 \cdot 10^{-4}$, 1.20, 0.102 , $1.27 \cdot 10^{-2}$, $1.86 \cdot 10^{-3}$) and is compared with several theoretical

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Investigation of a Used Fuel Element of
the First Nuclear Power Station

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B006/B056

data. The authors finally thank G. M. Kukavadze and R. N. Ivanov for the mass-spectroscopic analysis of the irradiated uranium, and V. N. Sharapov for calculating the isotope composition. There are 3 figures, 1 table, and 2 references: 1 Soviet and 1 American.

SUBMITTED: January 28, 1960

Card 3/3

4

PALIBIN, P.A.; SMIRNOV-AVERIN, A.P.; SEVAST'YANOV, Yu.G.; BULANOV, L.A.;
SHASHARIN, G.A.

Organic heat-transfer agents in reactor engineering. Inzh.-fiz.
zhur. 4 no. 5:127-138 My '61. (MIRA 14:5)
(Nuclear reactors--Materials)

26366

S/089/61/011/002/002/015
B102/B201

21.2200

AUTHORS: Smirnov-Averin, A. P., Galkov, V. I., Ivanov, V. I.,
Meshcheryakov, V. P., Sheynker, I. G., Stabenova, L. A.,
Krot, N. N., Kozlov, A. G.

TITLE: Study of a used fuel rod from the First Nuclear Power Station

PERIODICAL: Atomnaya energiya, v. 11, no. 2, 1961, 122-125

TEXT: This is the second part of a paper, the first having been published in "Atomnaya energiya" v. 8, no. 5, 1960, 446. Results of studies of used fuel rods from the Pervaya atomnaya elektrostantsiya (First Nuclear Power Station) are presented. The element jackets displayed no changes apart from some oxide stains. A comparison between the diameters of a new fuel rod with one after 104 and another after 445 effective burning hours showed that while the diameter had not increased at the upper and lower rod ends, it had grown by less than 0.2 mm in the middle. In order to measure the total α -, β -, and γ -activity, the used fuel rod was divided lengthwise into 10 sections, and each of these parts was dissolved in nitric acid. The α -activity was determined by a Da-49 (Da-49) standard device and an ionization chamber, the
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S/089/61/011/002/002/015
B102/B201

Study of a used fuel rod from the ...

β -activity by a 4π -counter, the γ -activity by an ionization chamber as compared to a radium standard. The activity of the inner and outer tubes bounding the fuel element was also measured; these tubes were made of stainless steel. In the middle, the activity of the outer tube was 30% higher than that of the inner tube. This effect can be explained by the change of the neutron spectrum along the diameter of the fuel element. The burn-up in the used fuel elements was determined on the strength of the absolute activity of cesium which was separated by an ion exchanger. The results of a radiometric determination of the burn-up were compared with mass-spectrometric results, and agreement was found to be good. The mean burn-up of the entire element was found to be equal to 53%. Finally, the isotopic composition of transuranic elements was also determined in the used-up fuel. The first part of the present paper has supplied the results of a radiometric determination of the isotopic composition in case of a 12.5% burn-up of the element. The results of a mass-spectrometric analysis are now given. The substance under investigation was to the emitter (tungsten foil, 40 μ) in the form of an aqueous nitrate solution. A thermal ion source served for the purpose. Results are presented in Fig. 5. They were used to calculate the mean values of isotopic composition. The

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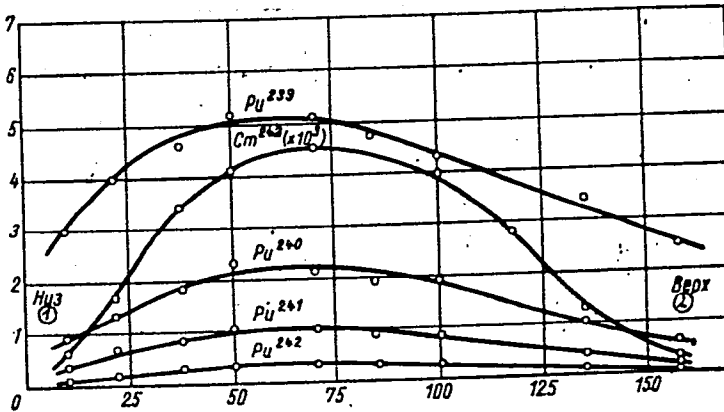
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S/089/61/011/002/002/015
B102/3201

Study of a used fuel rod from the ...

following was found (in kg/ton of uranium): Pu²³⁹ - 4.10; Pu²⁴⁰ - 1.53;
Pu²⁴¹ - 0.64; Pu²⁴² - 0.20; Cm²⁴² - 2.73·10⁻³. There are 5 figures and
2 Soviet-bloc references.

SUBMITTED: September 13, 1960

Fig. 5: Isotopic composition of transuranic elements along the fuel element.
Legend: Ordinate: isotopic concentration in kg/ton of U; abscissa: length in cm; (1) bottom; (2) top.



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29517
S/089/61/011/005/012/017
B102/B104

26.2230

AUTHORS: Smirnov-Averin, A. P., Galkov, V. I., Sheynker, I. G.,
Meshcheryakov, V. P., Stabenova, L. A., Kir'yanov, B. S.

TITLE: Determination of burnup in spent fuel elements

PERIODICAL: Atomnaya energiya, v. 11, no. 5, 1961, 454 - 456

TEXT: The burnup of spent fuel elements was determined by determining the Cs¹³⁴ accumulated as a result of an (n,γ) reaction with the stable isotope Cs¹³³, and Cs¹³⁷. The activity of the mixture Cs¹³⁴ + Cs¹³⁷ was measured by scintillation gamma and beta spectrometers and a γ-β coincidence circuit. The apparatus gamma spectrum of the mixture had two photopeaks, the first was caused by the gamma radiation of Cs¹³⁴ ($\bar{E}_\gamma = 0.80$ Mev), the second by a superposition of the photopeaks of Cs¹³⁷ ($E_\gamma = 0.66$ Mev) and Cs¹³⁴ ($\bar{E}_\gamma = 0.59$ Mev). The internal conversion coefficient was determined from the beta spectrum of Cs¹³⁷ to be 0.119

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Determination of burnup...

29547
S/089/61/011/005/012/017
B102/B104

in accordance with the tabulated value. β - γ coincidences of the isotope mixture were only due to Cs^{134} radiation. From intensity and coincidence counting rate measurements the relative Cs^{137} content in the mixture was determined. The distribution of both the single isotopes and the mixture along the fuel rod had broad maxima in the middle of the rod. The burnup distribution was calculated from the Cs^{137} content. It was found to be in good agreement with mass-spectrometric measurements. The burnup may also be determined from the content of the Tc^{99} fission fragment ($2.2 \cdot 10^5$ years) which is produced in a yield of 6.02%. This isotope, which is the only long-lived one of this element, is extracted by methyl ethyl ketone after dissolving the material and centrifuging the precipitate. For final purification the cationite KY-2 (XU-2) is used. Activity is determined with a 4 π counter. The burnup determined from Tc^{99} was 67%, from the cesium mixture 68%, and from mass-spectrometric measurements 66.2%. There are 5 figures and 2 references: 1 Soviet and 1 non-Soviet. The latter reads as follows: Progress in Nuclear Energy, Ser. III, Process Chemistry, V. I, Appendix III, London, 1956.

EXEMPTED: September 13, 1960
Card 2/2

32009

S/069/62/012/001/012/019
B102/B138

21.5210

AUTHORS: Galkov, V. I., Ivanov, V. I., Smirenkin, G. N.,
Smirnov-Averin, A. P.

TITLE: Investigation of the uranium rod assembly of the 6P-5
(BR-5) reactor

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 56-57

TEXT: Some characteristics and parameters of a uranium-rod assembly exposed to a $5 \cdot 10^{21}$ neutron flux in a BR-5 reactor have been determined. The BR-5 reactor uses plutonium as fuel and uranium as reflecting material; the reflector consists of 3 cm natural uranium + 30 cm nickel. The middle of the assembly studied was 12.6 cm off the reactor center. The distributions of the absolute number of fission events in the uranium and of the capture events in U^{238} were determined for the length of the assembly (28 cm), the first from the absolute activity of Cs^{137} , and the second from the Pu-concentration in the uranium, i.e. its specific α activity. From the Pu separated from the assembly, the Pu^{240} content

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B102/B138

Investigation of the uranium rod...

($\sim 0.1\%$) was determined by comparing the intensities of spontaneous fissions in sample and standard. Correction ($\sim 5\%$) was made for the spontaneous fissions of Pu^{238} . From the Pu^{240} content in plutonium and the Pu^{239} content in uranium, the mean ratio of the capture cross sections of Pu^{239} and U^{238} was calculated. With 1.81 ± 0.15 it was not far from 1.93, the value calculated by multi-group theory (16 groups). From the mean cross sections of 0.23 b (U^{238} , capture) and 2.18 b (Pu^{239} fission) the mean capture cross section for Pu^{239} ($\sigma_c = 0.415 \pm 0.035$ b) and $\alpha = \sigma_c / \sigma_f$ can be determined ($\alpha = 0.19 \pm 0.02$). α is the ratio of the mean cross sections of radiative capture and fission. The α -values determined in dependence on energy agree with those found by V. M. Andreyev (Atomnaya energiya, 4, vyp. 2, 185 (1958)). The authors thank A. I. Leypunskiy, O. D. Kazachkovskiy and I. I. Bondarenko for their interest, and M. K. Golubeva, V. I. Moiseyev, A. S. Tishin, and Yu. M. Turchin for assistance. There are 2 figures and 4 Soviet references.

SUBMITTED: August 16, 1961

Card 2/2

43168

S/089/62/013/006/016/027
B102/B186

AUTHORS: Kir'yanov, B. S., Smirnov-Averin, A. P., Galkov, V. I.

TITLE: Accumulation of technetium in thermal reactors

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 595 - 597

TEXT: Technetium, predominantly used as inhibitor in semiconductor engineering, was separated in considerable amounts from the fuel elements of the Pervaya atomnaya elektrostantsiya (First Atomic Power Plant) where it has accumulated from fission of U^{235} , Pu^{239} , and Pu^{241} . Its production from Mo^{99} by β^- decay is negligible ($< 1\%$). The concentration of Tc^{99} in the fuel elements of this plant is calculated considering U^{235} and $Pu^{239,241}$ fission as well as the storage effect. The calculated curve is compared with the measured values in Fig. 1. There are 2 figures.

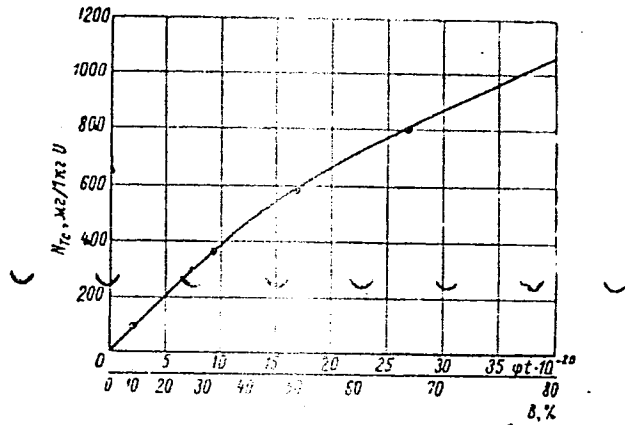
SUBMITTED: March 17, 1962

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Accumulation of technetium...

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B102/B186

Fig. 1. Te^{99} accumulation (N_{Tc} , $\mu\text{g}/\text{kg U}$) as dependent on U^{235} burnup and integral neutron flux (ψt).



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NEFEDOV, V.D.; KHARITONOV, N.P.; LI DE-FU [Li Tieh-fu]; GUSEV, Yu.K.;
SKOROBGATOV, G.A.; SMIRNOV-AVERIN, A.P.; SEVAST'YANOV, Yu.G.;
KHUOBIN, Yu.I.

Tritiation of organosilicon compounds by the method of rebounding
tritium atoms. Zhur.ob.khim. 32 no.2:614-618 F '62. (MIRA 15:2)

1. Institut khimii silikatov AN SSSR i Leningradskiy
gosudarstvennyy universitet.

(Silicon organic compounds)

(Tritium)

SMIRNOV-AVERIN, A.P.; KOVALENKO, G.S.; KROT, N.N.

Extraction of uranium (IV) from nitric acid media by tri-n-butyl phosphate. Zhur. neorg. khim. 8 no.10:2400-2406 '63.
(MIRA 16:10)

(Uranium compounds) (Nitric acid) (Butyl phosphates)

S/089/63/014/003/015/020
B102/B186

AUTHORS: Sevast'yanov, Yu. G., Bulanov, L. A., Kaplan, Ye. P.,
Nefedov, O. M., Smirnov-Averin, A. P.

TITLE: An activation method for quantitative determination of
organically bound sulfur impurities in polyphenyls

PERIODICAL: Atomnaya energiya, v. 14, no. 3, 1963, 324 - 326

TEXT: A great disadvantage of using polyphenyls as coolants and moderators in power reactors is their content of sulfur impurities (due to the production conditions). S^{32} changes over into P^{32} in fast-neutron induced (n,p) reactions, while P^{32} emits betas of 1.7 Mev and renders the coolant regeneration difficult; moreover, sulfur reacts with the tube material to form metal sulfides which cause corrosion. In order to determine the S^{32} content an activation method based on the $S^{32}(n,p)P^{32}$ reaction was developed. The P^{32} activity is determined on comparison with a reference standard (pure Na_2SO_4), the irradiation (total 10^{18} n/cm²)

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B102/B186

An activation method for ...

taking 26 - 28 hrs; between irradiation and analysis a period of 7 - 10 days was used for complete decay of Na^{24} . The induced activity was measured with an end-window counter with a 78 mg/cm^2 aluminum filter. A content of $\sim 0.1\%$ S in a batch of 10 - 20 mg was found to correspond to ~ 3000 pulses/min. Consequently, when the irradiation time can be raised 3 to 5 times, quantities of 0.001 - 0.0005 % S can even be determined. The sensitivity can be further increased by concentrating the sample. There is 1 table.

SUBMITTED: March 10, 1962

Card 2/2

L 9876-63 EPR/EWP(j)/EPF(c)/EPF(n)-2/EPF(n)/BDS/ES(s)-2 AFFTC/ASD/ESD-3/AFWL/
SSD Ps-4/Pc-4/Pr-4/Pu-4/Pt-4 RM/WB/XXX S/0089/63/014/006/0555/0558 78

ACCESSION NR: AP3002260

AUTHOR: Sevast'yanov, Yu. G.; Bulanov, L.A.; Smirnov-Averin, A. P.; Kaplan, Ye. P.; Nefedov, O. M.; Chel'tsova, M. A.; Petrov, A. D.

TITLE: Thermal and radiation stability of certain aromatic compounds

SOURCE: Atomnaya energiya, v. 14, no. 6, 1963, 555-558

TOPIC TAGS: pyrolysis, radiolysis, Gamma radiation, neutron radiation, thermal stability, radiation stability, polycyclic aromatic hydrocarbons, naphthalene, anthracene, biphenyl, terphenyl, alkylated biphenyls, alkylated terphenyls, diphenyl methane, phenoxybiphenyl

ABSTRACT: The pyrolysis and Gamma radiation induced and neutron-radiation induced radiolysis of a number of polycyclic aromatic hydrocarbons, (isopropyl- and phenyl-substituted biphenyls, naphthalenes, and terphenyls; polyphenylenes with methylene bridges between the rings; and phenoxybiphenyl isomers) have been studied. The samples were degassed beforehand to prevent oxidation. A study of pyrolysis at 400C indicated that the stability of biphenyls and terphenyls was two to three orders above that of Alpha-phenylnaphthalene, the alkyl-

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L 9876-63

ACCESSION NR: AP3002260

2

substituted hydrocarbons, and the aromatic ethers. An increase in the number of alkyl substituents in the hydrocarbons decreased their thermal stability. Of the alkyl-substituted hydrocarbons, isopropyl-m-terphenyl was found to be the most stable to decomposition to gaseous products and isopropylbiphenyl the most stable to polymerization. Thermal stability decreased from biphenyl to phenoxybiphenyls. The pyrolysis kinetics was studied by additional pyrolysis of the most stable compound, m-terphenyl, at 194, 475, and 459C. From the results obtained, rate constants of pyrolysis were calculated, and activation energy was found to be about 70 kcal/mol. Pyrolysis at 410C of polyphenylenes with methylene bridges between the rings revealed that their thermal stability was three orders below that of m-terphenyl. In experiments with irradiation of the hydrocarbons in a neutron field (10 sup 13 n/cu cm sec) at 60 and 350C, m-terphenyl was found to be the most stable of all the compounds. An increase in temperature from 60 to 350C increased radiation-induced decomposition by a factor of 3.8. From Gamma-irradiation experiments (dose, 10 sup 21 ev/g) it was found that the energy absorbed was not sufficient to produce radiolytic decomposition of biphenyl, terphenyls, or phenylnaphthalenes. It was concluded that the superior thermal and radiation stability shown by biphenyl and by the terphenyl isomers makes them suitable as heat transfer agents for nuclear power reactors. Orig. art. has: 5 tables.

γ

A

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L 23511-65 EWT(m)/EPF(c)/EPR/EWP(j) P_c-4/P_r-4/P_B-4/P_i-4 RPL WW/
JW/RM

ACCESSION NR: AP4047127

S/0080/64/037/010/2283/2286

AUTHOR: Kaplan, Ye. P.; Kazakova, Z. I.; Sevast'yanov, Yu. G.;
Smirnov-Averini, A. P.; Petrov, A. D.

3
B

TITLE: Preparation and properties of isopropylterphenyl

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 10, 1964, 2283-2286

TOPIC TAGS: isopropylterphenyl, synthesis, preparation, property, diisopro-
pylterphenyl, heat transfer agent, thermal stability, radiation stability, isomeri-
zation

ABSTRACT: The preparation of isopropylterphenyl by alkylation and its isomeri-
zation under alkylation conditions were investigated, as well as its thermal, ra-
diation and viscosity properties. Alkylation of terphenyl with isopropyl chloride
using AlCl₃ catalyst in hexane solution at 0-25C gave mono-tetra isopropylter-
phenyls. The monoisopropylterphenyl yield was optimum with reactant terphenyl:
isopropyl chloride:AlCl₃ ratio of 1:2:0.5; diisopropylterphenyl was maximum with
a 1:4:1 ratio. Isomerization depended on catalyst (no isomerization with H₃PO₄)

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and temperature (isomerization with $AlCl_3$ catalyst increased with temperature). Isopropylterphenyl has high radiation and thermal stability. It can be used as a heat transfer agent in the 300-390C temperature range. Its higher boiling temperature and smaller decomposition in comparison to isopropylidiphenyl make it more promising for this application. Orig. art. has: 4 tables and 1 figure

ASSOCIATION: None

SUBMITTED: 02Sep63

ENCL: 00

SUB CODE: OC, GC

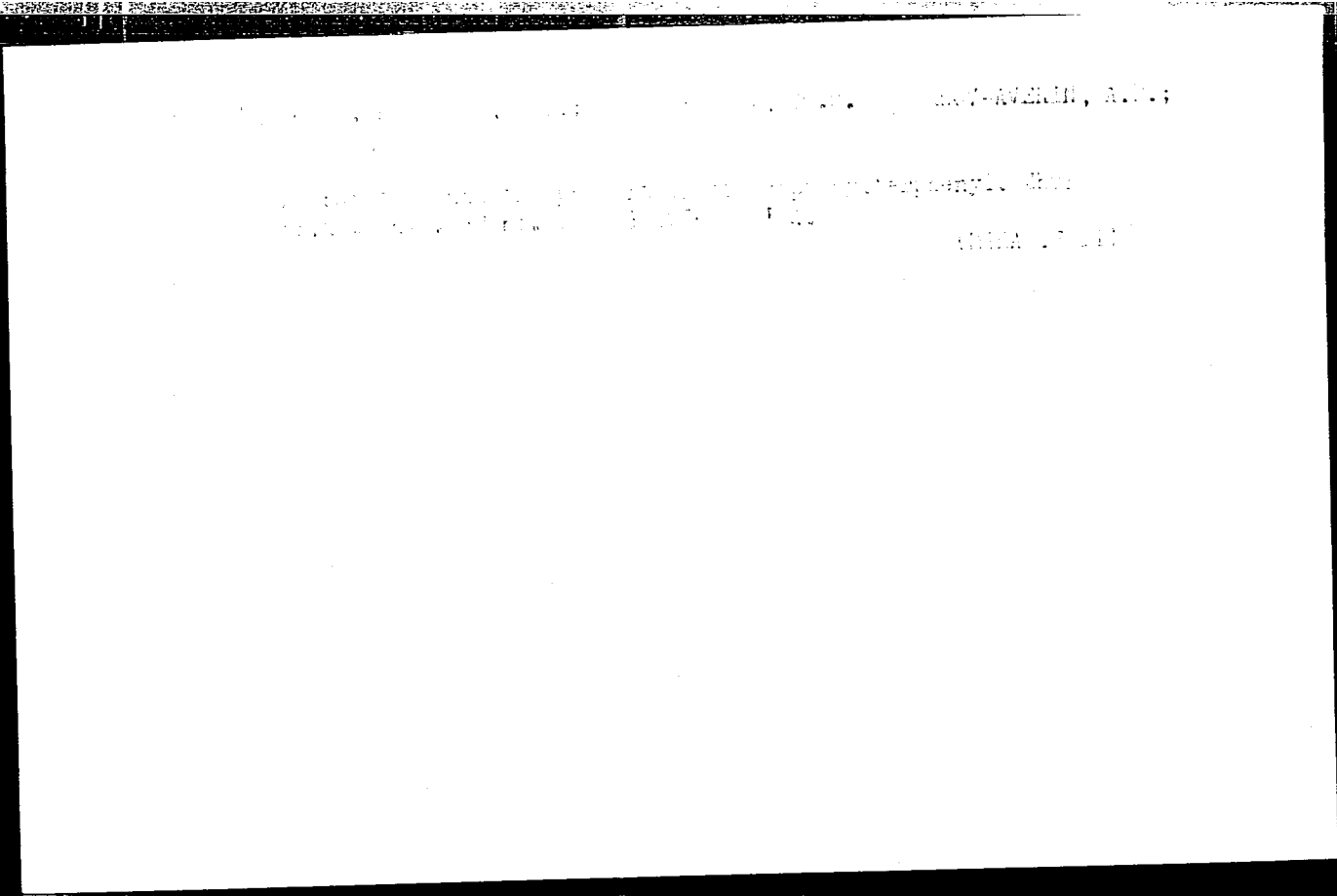
NO REF SOV: 003

OTHER: 007

Card 2/2

DR. BE W-AVERIN, A.P.; KOVALENKO, G.S.; YERMOGLAYEV, N.P.; KROT, N.N.

Microvolumetric complexometric method of determining neptunium.
Zhur. anal. khim. 21 no. 1:76-78 '66 (MIRA 19:1)



ZLOBIN, Anatoliy; SMIRNOV-CHEKKEZOV, A.; AZHAYEV, Vasilii, red.; VASI-
LEVSKIY, Vitaliy, red.; VERSHIGORA, Petr, red.; DANIN, Daniii, red.;
PROMYSLOV, V.F., red.; KORENEV, G., red.izd-va; YAKOVLEVA, Ye.,
tekhn.red.

[Twenty-three stories on builders] 23 rasskaza o stroiteliakh.
Moskva, Mosk.rabochii, 1958. 386 p. (MIRA 12:11)
(Moscow--Construction workers)

1. [Illegible text]

2. [Illegible text]

Text of the publication of [illegible] woolen, [illegible] [illegible], Ygoli, no. 1, 1958.

Monthly List of Russian Acquisitions, Library of Congress, May 1958. UNCLASSIFIED.

CHEN' YUAN'-ZHEN' [Ch'en Yuan-jên] (Kanton); SMIRNOV, KAMENSKIY, Ye. A.
(Pekin)

History and methods of balneological therapy in health resorts of
the Chinese People's Republic. Vop.kur.fizioter. i lech.fiz.kul't.
22 no.6:76-80 N-D '57. (MIRA 11:2)
(CHINA--HYDROTHERAPY)

SMIRNOV-KAMENSKIY, Yevgeniy Arsen'yevich; KHARCHENKO, L.I., red.;
STEBLYANKO, T.V., tekhn.red.

[Two years in China; a Soviet physician's notes] Dva goda v
Kitae; zapiski sovetskogo vracha. Stavropol', Knizhnoe izd-vo.
1959. 196 p. (MIRA 13:5)
(CHINA--SOCIAL CONDITIONS) (CHINA--MEDICINE)

SMIRNOV-KAMENSKY, Ye.A.; KHARCHENKO, L.I., red.; STEBLYANKO, T.V.,
tekhn. red.

[Kislovodsk Health Resort]Kurort Kislovodsk. Stavropol',
Stavropol'skoe knizhnoe izd-vo, 1962. 206 p. (MIRA 15:9)
(KISLOVODSK—HEALTH RESORTS, WATERING-PLACES, ETC.)

SMIRNOV-KAMENSKIY, Yevgeniy Arsen'yevich; KHARCHENKO, L., red.

[Kislovodsk Health Resort] Kurort Kislovodsk. Stav-
ropol' Knizhnoe izd-vo, 1965. 209 p. (MIRA 18:12)

KUKUSHKIN, A.I.; KOGAN, Ya.M.; SMIRNOV-SERGEYEV, A.M.; SHVARTSMAN, D.A.

Operating methods of determining expected production costs. Tekst.
prom. 14 no.6:15-17 Je '54. (MLRA 7:7)
(Textile industry--Costs)

SMIRNEV-TROYANSKIY, P.P.

28(2)

PHASE I BOOK EXPLOITATION

SOV/2712

Akademiya nauk SSSR

Perevodnaya mashina P.P. Troyanskogo; sbornik materialov o perevodnoy mashine dlya perevoda s odnogo yazyka na drugiye, predlozhennoy P.P. Troyanskim v 1933 g. (P.P. Troyanskiy's Translation Machine; Collection of Materials on a Translation Machine for Translating One Language Into Others, Proposed by P.P. Troyanskiy in 1933) Moscow, Izd-vo AN SSSR, 1959. 52 p. 2,000 copies printed.

Ed.: D.Yu. Panov; Ed. of Publishing House: K.P. Gurov; Tech. Ed.: S.G. Markovich.

PURPOSE: This book is intended for readers interested in problems of machine translation.

COVERAGE: This publication describes the work of the late P.P. Troyanskiy, who invented an automatic translation machine in the early 1930's. The volume contains two articles taken from Troyanskiy's manuscripts and comments on these by members of a commission set up by the Presidium of the Academy of Sciences of the USSR in 1957 to study his work. The first

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P.P. Troyanskiy's Translation Machine (Cont.)

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article deals with the linguistic principles of automatic translation, and comments are presented by I.K. Bel'skaya. The second article describes the technical characteristics of a translating machine. The official patent specifications for the machine are reproduced. Comments on the technical aspects are presented by D.Yu. Panov and L.N. Korolev. There are no references.

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I. LINGUISTIC MATERIAL	
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Appendix. Opinions of Professor I.D. Udal'tsov and Academician S.I. Vavilov on <u>P.P. Smirnov-Troyanskiy's Project</u>	28
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Card 2/3	

SMIRNOV-UGRYUMOV, D. V.

23489. KORMLENIYe BYKOVPROIZ-VODITELEY BELKAMI, PRIGOTOVLENNYMI IZ KONSKIKh
BOBOV I OVSYaNKI. SOV. ZOOTEKHNIYa, 1949, N^o 2, c. 68-74.--
BIBLIOGR: 12 NAZV.

SO: LETOPIS' NO. 31, 1949.

USSR/Farm Animals. General Problems.

Abs Jour: Ref Zhur-Biol., No 17, 1958, 78667.

Author : Milovanov, V. K.; Smirnov-Ugryumov, D.V.;
Yel'chaninov, V. V.

Inst :
Title : On Belated "Refutations" of Artificial Insemination.

Orig Pub: Zhivotnovodstvo, 1957, No 9, 7-19.

Abstract: Objections are critically analyzed which have been raised against the expediency of the use of artificial insemination in animal breeding. S. S. Perov objects on the principle of the "sex selection" of Darwin. According to A. A. Mashkovtsev, the method of artificial insemination is contrary to the teachings of Pavlov on conditioned reflexes, decreases fertilization, and impairs the

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1

Q-1

USSR/Farm Animals. General Problems

Abs Jour : Ref Zhur - Biol., No 19, 1958, No 88014

Author : ~~Smirnov-Ugryumov D.V.~~
Inst : All-Union Scientific Research Institute of Animal Husbandry
Title : Techniques and Organization of the Activities of the Central
Station for the Artificial Insemination of Farm Animals

Orig Pub : Tr. Vses. n.-i. in-ta zhivotnovodstva, 1957, 21, 40-45

Abstract : No abstract

Card : 1/1

SMIRNOV-UGRYUMOV, D.V., kand. sel'skokhozyaystvennykh nauk

Increasing the resistance of bull semen to freezing temperatures
by special feeding. Dokl. Akad. sel'khoz. 21 [i.e. 23] no. 12-32:35
'58. (MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhivotnovodstva.
Predstavleno akademikom V.K. Milovanovym.
(Semen) (Bulls--Feeding and feeding stuffs)

PARSHUTIN, G.V.; SMIRNOV-UGRYUMOV, D.V.; USACHEVA, I.G., red.;
PEVZNER, V.I., tekhn. red.; BELOVA, N.N., tekhn. red.

[Artificial insemination of farm animals] Iskusstvennoe ose-
menenie sel'skokhoziaistvennykh zhiivotnykh. Moskva, Sel'-
khozizdat, 1962. 279 p. (MIRA 16:2)
(Artificial insemination)

MIROLYUBOV, Igor' Nikolayevich; YENGALICHEV, Sergey Aleksandrovich;
SERGIYEVSKIY, Nikolay Dmitriyevich; ALMAMETOV, Fotyakh
Zaynulovich; KURITSYN, Nikolay Aleksandrovich; SMIRNCV-
VASIL'YEV, Konstantin Gennad'yevich; YASHINA, Lyudmila
Vasil'yevna; KHRUSTALEVA, N.I., red.; GOROKHOVA, S.S.,
tekhn. red.

[Textbook for the solution of problems concerning the
strength of materials] Posobie k resheniiu zadach po so-
protivleniiu materialov. Moskva, Vysshaya shkola, 1962.
487 p. (MIRA 16:5)

(Strength of materials)

SMIRNOV-VASIL'YEV, K.G. (Leningrad)

Using the method of microstructural measurements in calculating
stress concentrations. Inzh.zhur. 2 no.3:197-198 '62.
(MIRA 15:8)

(Strains and stresses)

SMIRNOV-ALYAYEV, G.A.; SMIRNOV-VASIL'YEV, K.G.

Particular features of the method of microstructural
measurements. Zav.lab. 28 no.6:705-707 '62. (MIRA 15:5)

1. Leningradskiy mekhanicheskiy institut.
(Deformations (Mechanics))

PROCESSING AND PROPERTIES

1ST AND 2ND GROUPS

10

Isolation of resorcinol from dry salts after the neutralization of the alkaline flux. G. K. Hauser and I. V. Smirnov, Zankov. *Mem. Inst. Chem. Tech., Acad. Sci. USSR, N. S. R. No. 9, 127-33* (in Russian 133-4, in English 131) (1948).--Resorcinol was sepd. from the alk. melt by means of sublimation in a specially constructed app. Sublimation was accomplished by drawing through the stirred melt an air stream warmed to 106-108°. Expts. were conducted with 2 and 5% resorcinol melts. The yield time required for sublimation was 30-40 hrs. The yield of resorcinol was 43% and 41 m. 109.5-10.5%. B. Z. K.

METALLURGICAL LITERATURE CLASSIFICATION

SECTION	GROUP	CLASSIFICATION	INDEX	REMARKS
1	2	3	4	5
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96	97	98	99	100

3. 300-3000, 7. 7.

Smirnov-Mashkov, I. V. "On some reaction of cyanomethylpyridine salts", Ukr. Khim. zhurnal, 1948, Issue 1, p. 2-4, - Bibliog.: 6 items.

SC: U-3002, 11 March 58, (Latopis 'nykh Statey, No. 10, 1948).