Smirnov, V. S.

Behavior of the azine and phenylhydrazone of cyclohexanone with respect to oxidizing agents. V. S. Smirnov (A. I. Mikoyan Inst. Fish Econ. and Ind., Moscow). Zhur. Obshchei Khim. 26, 528-30(1956).—Heating 11 g. [(CH₂)₅C:N]₂ with 90 ml. 30% H₂O₂ 64 hrs. on a steam bath gave a little cyclohexanone and NH₃; aq. KMnO₄-H₂SO₄ in a similar reaction gave the same products. (CH₂)₅C:NN-HPh heated with 30% H₂O₂ in MePh 64 hrs. gave some cyclohexanone, PhOH, NH₃, and tar; KMnO₄-H₂SO₄ gave the same products.   G. M. Kosolapoff

SMIRNOV, V.S.

Behavior of the azine and phenylhydrazone of cyclohexanone with respect to oxidizing agents. XI. V. S. Smirnov.
J. Gen. Chem. U.S.S.R. 26, 561-2(1956)(Engl. translation).
—See C.A. 50, 14575g.
B. M. R.

[illegible]

[illegible] M. K., [illegible]
[illegible],

[illegible]: [illegible] Reaction of Hydrocarbons of Different Structure in the Presence of Alumina-Chromium-Potassium Catalysts ([illegible] uglevodorodov razlichnogo [illegible] alyumo-khromo-kaliyevogo katalizatora)

[illegible]: [illegible] Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, [illegible], Nr [illegible], pp [illegible] (USSR)

[illegible]: It is taken for granted that in the presence of [illegible] catalysts, [illegible] certain conditions aromatic hydrocarbons are formed from alkanes having 6 and more carbon atoms in the main chain. [illegible] they are not suited for a direct cyclization [illegible] the investigation of the aromatization of [illegible] and [illegible] greatest attention was directed to [illegible] formation of aromatic hydrocarbons and [illegible] of [illegible] hydrocarbons. [illegible] with the reactions of [illegible] products ([illegible]) in the [illegible] chromium-potassium catalysts. [illegible]

ASSOCIATION: Institute of Organic Chemistry imeni N. D. Zelinskiy, AN USSR)

SUBMITTED: February 11, 1958

5(4)

SOV/62-59-8-15/42

AUTHORS: Timofeyeva, Ye. A., Smirnov, V. S., Plotnikov, Yu. N.

TITLE: Effect of Temperature and Volume Rate on the Dehydrogenation
             of n-Hexane According to Its Aromatization Conditions

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
             1959, Nr 8, pp 1432-1437 (USSR)

ABSTRACT: As an introduction some methods already known in publications
             and concerning the aromatization of alkanes are discussed.
             Special mention is made of Moldavskiy's, Kamusher's and
             Kobyl'skaya's method (Ref 2). In the present paper the be-
             havior of cyclohexane in the presence of typical dehydrogena-
             tion catalysts of the composition Al_2O_3, Cr_2O_3, K_2O

             (90.7 : 5.6 : 3.7 mol%) is investigated. Experimental yields
             were compared to the equilibria which were determined by
             thermodynamic calculations. The dehydrogenation of n-hexane
             was accompanied by aromatization in which much more benzene
             than olefines was formed. The method used has already been
             described in reference 6. The refractive index, iodine number,
             and aromatic hydrocarbon content (according to the method of
             relative dispersion) were determined in the liquid catalysate.
             The gas analysis was carried out in a VTI-2 unit. Characteristic
Card 1/2   data found by the experiments are compiled in tables 1-4.

SOV/62-59-8-15/42

Effect of Temperature and Volume Rate on the Dehydrogenation of n-Hexane According to Its Aromatization Conditions

It can be seen from the results that the hexane yield is independent of temperature change and volume rate whereas the benzene yield increases with a mounting temperature but decreases with an increasing volume rate. The thermodynamic calculations carried out show that a maximum of 73% of the amount of cyclohexane corresponding to the state of equilibrium can be obtained. The authors conclude by thanking N. I. Shuykin for his advice and the possibility to carry thru their work in the Laboratory of Organic Catalysis of the Institut organicheskoy khimii AN SSSR (Institute of Organic Chemistry of the Academy of Sciences, USSR). There are 2 figures, 4 tables, and 12 references, 10 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: November 14, 1957

Card 2/2

S/030/60/000/05/15/056
BO15/B003

AUTHORS: Kargin, V. A., Krentsel', B. A., Rekhlin, M. I., Smirnov, V. S.

TITLE: International Symposium on Macromolecular Chemistry and the Exposition of Synthetic Materials in the German Federal Republic

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 5, pp. 68-74

TEXT: The Symposium was convened by the Commission of High-molecular Compounds of the International Association for Pure and Applied Chemistry and was held at Wiesbaden (German Federal Republic) from October 12 to 17, 1959. It was attended by some 1200 scientists from 22 countries. The Soviet delegation consisted of 29 representatives of the main branches of the chemistry and physics of polymers of the USSR. Problems of the physics of the polymers, high-molecular compounds in solutions, the elementary acts as well as the kinetics of polyreactions, the chemistry of organic and inorganic high-molecular compounds, the natural high-molecular compounds and models were discussed. G. P. Mikhaylov

Card 1/2

International Symposium on Macromolecular
Chemistry and the Exposition of Synthetic
Materials in the German Federal Republic

S/030/60/000/05/15/056
B015/B008

reported on the investigation results of the molecular relaxation in
polymers by means of the dielectric method. V. A. Kargin stated that the
globules are to be considered as primary elementary structures in the
orientation and crystallization of polymers. S. S. Medvedev showed that
the development of cationic chains is directly linked with the formation
of complexes between the catalyst and monomer. G. Mark (USA) mentioned
in his report papers by Soviet scientists, especially the investiga-
tions by K. A. Andrianov in the field of the synthesis of organosilicon
polymers. The authors describe next the International Exposition of
Synthetic Materials which was held at Duesseldorf from October 17 to 25,
1959, and at which 21 countries (over 670 firms) were represented. The
authors state that about one half of the exhibits consisted of machines
and the other half of finished products. Among synthetic materials,
polyvinyl chloride, polyethylene and reinforced plastics are especially
mentioned, the authors referring to the papers by V. A. Kargin and N. A.
Plate. It is underlined finally that the work of the experts in the field
of new processing methods is to be regarded as being as important as the
creation of new polymers. There is 1 Soviet reference.

Card 2/2

TIMOFEYEVA, Ye.A.; SMIRNOV, V.S.; ZAYEVA, V.I.

Dehydrogenation of n-decane on oxide catalysts. Kin.i kat. 1
no.2:300-305 Jl-Ag '60.   (MIRA 13:8)
                           (Decane)
                           (Dehydrogenation)
                           (Catalysts)

24393

S/186/60/002/002/007/022

E071/E433

21.4200

AUTHORS: Klokman, V.R., Myakishev, K.G. and Smirnov, V.S.

TITLE: A study of the influence of the formation of complexes
             in the molten state on the coefficient of crystallization
             in the systems $PbCl_2$-$ThXCl_2$-KCl and $CaCl_2$-$CdCl_2$-KCl

PERIODICAL: Radiokhimiya, 1960, Vol.2, No.2, pp.175-182

TEXT: In previous works on the influence of the nature of
solvents on the coefficient of crystallization of radium in nitrate
and chloride systems, the authors expressed a supposition (Ref.2:
Radiokhimiya, 1, 1, 26 (1959)) that in melts, as in solutions, the
formation of complex ions of a macrocomponent in the liquid phase
should lead to an increase in the coefficient of crystallization of
a microcomponent.   In order to confirm this supposition it was
necessary to investigate systems in which the existence of complex
ions in the liquid state was proved by other methods.   For this
purpose the authors chose two systems $PbCl_2$-KCl and $CaCl_2$-KCl.
A review is given of literature on the dependence of physico-
chemical properties on the composition of melts of the above two
systems, proving the existence of complex compounds.   In the
present work the coefficients of crystallization (D) of $ThXCl_2$ in
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S/186/60/002/002/007/022
E071/E433

A study of the influence...

the system $PbCl_2$-KCl and $CdCl_2$ in the system $CaCl_2$-KCl, at various temperatures and compositions of the liquid phase were determined in order to prove the dependence of D on the presence of a complex compound of the macrocomponent in the melt. Specially purified starting salts ($PbCl_2$, KCl, $CaCl_2$) and radium isotope ThX and radioactive Cd115 (the purity of which was checked by the decay curves) were taken for the experiments. The experimental procedure was described earlier (Ref.2 and Ref.4: Radiokhimiya, 1, 5, 514 (1959)). The coefficient of crystallization of radium was determined at 430 and 450°C with the composition of melts 80 and 85 mole % of $PbCl_2$ respectively. It was found that at a constant temperature and composition of the melt, the coefficient of crystallization D is independent of the amount of separated solid phase. With decreasing temperature and correspondingly with increasing content of potassium chloride in the liquid phase, the coefficient of crystallization increases from 0.93 at 450°C to 1.31 at 430°C, i.e. with a change in the temperature of 20°C the value of the coefficient changed by 40%. The determination of the coefficient of crystallization of cadmium chloride was done at 650, 667 and 685°C. Blank experiments were

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on the distribution of $ThXCl_2$ and $CdCl_2$ between the melt and crystals of $PbCl_2$ and $CaCl_2$ respectively, it was demonstrated that in the same way as for solutions, the formation of a complex compound of a macrocomponent in the liquid phase leads to an increase in the value of the coefficient of crystallization.   There are 2 figures, 5 tables and 26 references: 18 Soviet-bloc and 8 non-Soviet-bloc.   Four of the references to English language publications read as follows: H.Bloom and E.Heymann, Proc.Roy.Soc., A, 188, 392 (1947);   F.Duke and R.Fleming, J.Electrochem.Soc., 106, 2, 130 (1959);   B.Harrap and E.Heymann, Trans.Far.Soc., 51, 2, 268 (1955);   N.Boardman, F.Dorman and E.Heymann, J.Phys.Chem., 375 (1949).

SUBMITTED: June 24, 1959

Card 4/4

KRENTSEL', B.A.; ROKHLIN, M.I.; SMIRNOV, V.S.

    International symposium on macromolecular chemistry. (Wiesbaden
West Germany'. Vysokom. soed. 2 no. 3:473-478 Mr '60.
                                       (MIRA 13:11)
           (Macromolecular compounds--Congresses)

KLOKMAN, V.R. ; MEL'NIKOVA, A.A. ; MYAKISHEV, K.G. ; SMIRNOV, V.S.

Effect of complex formation in the melt on the crystallization
coefficient of rudidium chloride in the systems KCL - LiCl, KCl -
BaCl$_2$, KCl - CaCl$_2$. Radiokhimiia 2 no.4:386-392 '60.

(MIRA13:9)

(Rubidium chloride)   (Crystallization) (Chlorides)

KLOKMAN, V.R.; MYAKISHEV, K.G.; SMIRNOV, V.S.

Effect of complex formation in the melt on the crystallization coefficient in the systems $PbCl_2$ – $ThXCl_2$ – KCl and $CaCl_2$ – $CdCl_2$ – KCl. Radiokhimiia 2 no.6:175-182 '60.   (MIRA 14:4)
                        (Systems (Chemistry))
                        (Crystallization)

MINACHEV, Kh.M.; SMIRNOV, V.S.; KONDRAT'YEV, D.A.; LOGINOV, G.A.

Products of the dehydrocyclization of n-hexane and dehydrogenation
of cyclohexane obtained on an alumina-molybdenum oxide catalyst.
Izv.AN SSSR Otd.khim.nauk no.4:724-726 Ap '61.   (MIRA 14:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
                (Cyclohexane)   (Hexane)

TIMOFEYEVA, Ye.A.; SMIRNOV, V.S.; BOGOMOLOV, V.I.

Dehydrogenation of n-octane and of the 250-320° synthine
fraction in the presence of activated charcoal. Izv. AN SSSR.
Otd.khim.nauk no.7:1320-1325 Jl '61.   (MIRA 14:7)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
        (Octane) (Dehydrogenation)

S/062/61/000/009/009/014
B117/B101

AUTHORS: Minachev, Kh. M., Smirnov, V. S., Kondrat'yev. D. A., and
             Loginov, G. A.

TITLE: Effect of thiophene on the catalytic activity of industrial
             aluminomolybdenum catalyst

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh
             nauk, no. 9, 1961, 1669-1672

TEXT: The activity of an aluminomolybdenum catalyst for pure hydrocarbons
and hydrocarbons containing varying amounts of thiophene was studied, for
the purpose of determining the deactivation rate of this catalyst and
comparing the data found with data on poisoning of platinum catalysts
The sulfur content on the catalyst was determined by means of S^{35} tagged
thiophene according to the method given in Ref. 3 (Kh. M. Minachev, G. V.
Isagulyants, and D. A. Kondrat'yev, Izv. AN SSSR. Otd. khim. n. 1960, 902).
All tests were carried out in an ordinary catalytic plant at normal
pressure and in a hydrogen streat. Hydrocarbon purity was tested by gas-
liquid chromatography. Cyclohexane and n-hexane, the hydrocarbons used for

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Effect of thiophene on the ...

S/062/61/000/009/009/014
B117/B101

the tests, were passed thru at a volume velocity of 0.2 hr^{-1}, at a molar ratio H_2 : HC = 5 : 1 (HC denoting the hydrocarbons). The tests lasted 6 to 45 hr. Data obtained in dehydrogenation of cyclohexane at 488°C and in dehydrocyclization of n-hexane at 500°C on the same catalyst have been reported in Ref. 5 (Izv. AN SSSR. Otd. khim. n. 1961, 724) and are used for comparison in the present work. Data obtained on dehydrogenation of cyclohexane containing 1.0, 1.5, 2.0, 3.0, and 5.0% by wt. thiophene show that the aromatizing effect of the catalyst decreases rapidly during the first few hours. After this, the deactivation rate slowly decreases. The degree of catalyst deactivation increases with increasing thiophene concentration. It was found that catalyst deactivation by the products of a radical degradation of cyclohexane is a much slower process than the decrease in aromatizing activity caused by thiophene. By comparison with platinum/alumina catalyst it was seen that the curves of catalyst poisoning and the dependence of catalyst activity on the thiophene concentration possess similar characteristics for both catalysts. In a test with cyclohexane containing 1.5% S^{35}-thiophene it was observed that increasing amounts of sulfur were deposited on the catalyst in the course of the process. After 20 hr work the catalyst had accumulated 1.6% of its own

Card 2/3

PLOTNIKOV, Yu. N.; SMIRNOV, V.S.; TIMOFEYEVA, Ye. A.; KLEYMENOVA, V.M.;
        SHUYKIN, N.I.

Dehydrogenation of n-alkanes in a fluidized bed of oxide catalysts.
Kin. i kat. 2 no.2:267-272 Mr-Ap '61.   (MIRA 14:6)

1. Institut organicheskoy khimii imeni N. D. Zelinskogo AN SSSR.
                    (Paraffins)
                    (Dehydrogenations)

S/204/62/002/004/004/019
E071/E433

AUTHORS: Shuykin, N.I., Timofeyeva, Ye.A., Plotnikov, Yu.N.
             Dobrynina, T.P., Petryayeva, G.S., Smirnov, V.S.

TITLE: The production of alkenes of a composition C_6-C_{10}
             by catalytic dehydrogenation of alkanes

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 457-465

TEXT: The reaction of dehydrogenation of alkanes (C_6-C_{10}) was
investigated in order to find appropriate catalysts and conditions
for selective production of the corresponding alkenes, as well as
to study the possibility of controlling reactions of
dehydrogenation, dehydrocylization and cracking.   The present
paper is a generalization of the authors' researches on these
problems.   It was shown on examples of 2-methylpentane,
3-methylpentane and 2,3-dimethylbutane that alkanes C_6, the long
chain of which contains less than 6 carbon atoms, are comparatively
easily dehydrogenized on an alumochromopotassium catalyst at 500°C
and a volume velocity of 0.5 h^{-1}, yielding from 86 to 89% of
catalysate containing from 32 to 40% of alkenes.   Conditions
for dehydrogenation of 2,2-dimethylbutane were found under which
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S/204/62/002/004/004/019
E071/E433

The production of alkenes ...

96.5% yield of catalysate, containing 10.4% of
3,3-dimethylbutene-1 (practically equilibrium yield) and 4.6% of
cracking products were obtained (no details given). Some
catalysts and process conditions for selective dehydrogenation of
n-hydrocarbons C_6-C_{10} were found under which about 10% yields of
corresponding alkenes were obtained. The possibility of selective
dehydrogenation of n.alkenes (C_6-C_{10}) into alkenes was indicated
by comparison of results obtained with various catalysts which
pointed out the existence of two kinds of active centres on
alumochromium catalysts - dehydrogenating and dehydrocyclizing.
The activity of dehydrocyclizing centres can be considerably
lowered by a treatment of the catalyst with cyclopentadiene or
furfurole with subsequent regeneration.   The possibility of
controlling dehydrogenation, dehydrocyclization and cracking
reactions by carrying out the process in a fluidized bed of an
appropriate catalyst was demonstrated, e.g. on dehydrogenation
of n.nonane over Al_2O_3 + Cr_2O_3 catalyst at 500°C selective
hydrogenation; at 600°C dehydrogenation and dehydrocyclization;
with K-5 catalyst at 600°C - dehydrogenation and cracking with
Al_2O_3 + Cr_2O_3 + K O catalyst at 600°C - dehydrogenation with
Card 2/3

The production of alkenes ...

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cracking and aromatization takes place.   It is stated on the basis
of a large number of experimental data on dehydrogenation of
n.alkanes, that the main mass of alkenes formed consists of isomers
with double bond situated in the middle of the molecule;   e.g. from
n.hexane - hexene-2 and hexene-3,   n.heptane - heptene 2 and
heptene-3,   n.octane - octane 4,   n.nonane - nonene 4,
n.decane - decene-4 and decene-5.   There are 8 tables.

ASSOCIATION: Institut organicheskoy khimii AN SSSR
              im. N.D.Zelinskogo (Institute of Organic Chemistry
              AS USSR imeni N.D.Zelinskiy)

Card 3/3

KOZLOV, P.V., otv. red.; ANDRIANOV, K.A., red.; DOGADKIN, B.A., red.;
    DOLGOPLOSK, V.A., red.; YENIKOLOPYAN, N.S., red.; KARGIN,
    V.A., red.; KOLESNIKOV, G.S., red.; KOROTKOV, A.A., red.;
    KORSHAK, V.V., red.; LAZURKIN, Yu.S., red.; MEDVEDEV, S.S.,
    red.; MIKHAYLOV, N.V., red.; PASYNSKIY, A.G., red.;
    SLONIMSKIY, G.L., red.; SMIRNOV, V.S., red.; TSVETKOV,V.N.,
    red.; FREYMAN-KRUPENSKIY, D.A., tekhn. red.

[Adhesion of polymers] Adgeziia polimerov; sbornik statei.
Moskva, Izd-vo AN SSSR, 1963. 142 p.   (MIRA 16:10)
    (Polymers)   (Adhesion)

KOLESNIKOV, G.S., otv. red.; ANDRIANOV, K.A., red.; DOGADKIN, B.A.,
        red.; DOLGOPLOSK, B.A., red.; YENIKOLOPYAN, N.S., red.;
        KARGIN, V.A., red.; KOZLOV, P.V., red.; KOROTKOV, A.A.,
        red ; KORSHAK, V.V., red.; LAZURKIN, Yu.S., red.; MEDVEDEV,
        S.S., red.; MIKHAYLOV, N.V., red.; PASYNSKIY, A.G., red.;
        SLONIMSKIY, G.L., red.; SMIRNOV, V.S., red.; TSVETKOV, V.N.,
        red.; FREYMAN-KRUPENSKIY, D.A., tekhn. red.

[Heterochain high-molecular weight compounds] Geterotsepnye
vysokomolekuliarnye soedineniia; sbornik statei. Moskva,
Izd-vo "Nauka," 1963. 246 p.   (MIRA 17:3)

KOLESNIKOV, G.S., otv. red.; ANDRIANOV, K.A., red.; DOGADKIN, B.A.,
        red.; DOLGOPLOSK, B.A., red.; YENIKOLOPYAN, N.S., red.;
        KARGIN, V.A., red.; KOZLOV, P.V., red.; KOROTKOV, A.A.,
        red.; KORSHAK, V.V., red.; LAZURKIN, Yu.S., red.; MEDVEDEV,
        S.S., red.; MIKHAYLOV, N.V., red.; PASYNSKIY, A.G., red.;
        SLONIMSKIY, G.L., red.; SMIRNOV, V.S., red.; TSVETKOV, V.N.,
        red.; FREYMAN-KRUPENSKIY, K.A., tekhn. red.

[Carbochain high-molecular weight compounds] Karbotsepnye
vysokomolekuliarnye soedineniia; sbornik statei. Moskva,
Izd-vo AN SSSR, 1963. 287 p.   (MIRA 17:1)

2

SHUYKIN, N. I.; TIMOFEYEVA, Ye. A.; SMIRNOV, V. S.

"St:·dy on catalytic dehydrogenation of C_6-C_{10}-alkanes."

Report submitted to 3rd Intl Cong on Catalysis, Amsterdam, 20-25 Jul 64.

Inst of Organic Chemistry im Zelinskiy, AS USSR, Moscow.

TIMOFEYEVA, Ye.A.; SHUYKIN, N.I.; BALASHOV, I.A.; SMIRNOV, V.S.

Catalytic synthesis of neohexane. Izv. AN SSSR. Ser. khim.
no.9:1699-1701 '65.   (MIRA 18:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

SUB CODE: 13 / SUBM DATE: 17Dec65 / SOV REF: 015

SMIRNOV, Vasiliy Sergeevich.

Transverse rolling: principles of the technical process Moskva, Gos.nauchno-tekhn.
izd-vo mashinostroit. lit-r , 1948. 194 p. (50-28018 rev)

TS340. S6

1. Rolling (Metal-work)

18

DETERMINATION OF FRACTURE STRENGTH OF METALS. V.S. Smirnov.
(Zavodskaya Laboratoriya, 1948, vol. 14, pp. 326-330 (in Russian):
Chemical Abstracts, 1949, vol. 43, Mar. 10, col. 1697).   Cylindrical
specimens of steel and aluminium were rolled with the axis of the
specimen parallel to the axis of the rolls, either at room or elevated
temperatures. A uniform reduction (e.g., 0.1 mm.) was applied in each
pass. After several passes the specimens fractured near the centre
owing to tensile stresses developed within by the rolling operation.
The percentage reduction in diameter at time of fracture was a measure
of the brittleness of the material. When the specimen had a 3:1 ratio
of length to diameter, tensile stresses were equal in all directions
and plastic deformation was avoided.

1. SMIRNOV, V. S.

2. USSR (600)

4. Machine Tools

7. Quick-changing chuck. Stan. i instr. 23 no. 8, '52.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

BOOK   Call No.: AF640208
  Authors: SMIRNOV, V. S., BOGOYAVLENSKIY, K. N., PAVLOV, N. N.
  Full Title: GROOVING OF ROLLS BY USING BARS OF EQUIVALENT CROSS-
                SECTION AREA
  Transliterated Title: Kalibrovka prokatnykh valkov po metodu
                sootvetstvennoy polosy
PUBLISHING DATA
  Originating Agency: None
  Publishing House: State Scientific and Technical Publishing House of
    Literature on Ferrous and Nonferrous Metallurgy (Metallurgizdat)
  Date: 1953   No. pp.: 328   No. of copies: 4,500
  Editorial Staff
    Editor: Smirnov, V. S., Prof. Dr. of Tech. Sci.,
    Technical Editors: Prokhorova, A. S. and Vecheruk, G. I.
PURPOSE: The book is intended for engineers and technologists of rolling
    mills and for graduate students specializing in rolling.
TEXT DATA
  Coverage: This book discusses roll pass design on the basis of the theory
    of Prof. A. F. Golovin set forth in his book Prokatka, Ch. III.
    Kalibrovka, ONTI, 1936 (Rolling. p. III, Grooving). According to the
    authors, Golovin suggests a new and original method of calculating the

SMIRNOV, V.S., doktor tekhnicheskikh nauk, professor; ORRO, P.I., kandidat tekhnicheskikh nauk; SHVEYKIN, V.V., doktor tekhnicheskikh nauk, professor.

"Tensile forces in the cold drawing of tubes". Stal' 15 no.11:1054 N '55.
(MIRA 9:1)

1.Leningradskiy politekhnicheskiy institut (for Smirnov).
2.Vsesoyuznyy nauchno-issledovatel'skiy trubnyy institut (for Orro)
3.Ural'skiy politekhnicheskiy institut (for Shveykin)
(Pipe) (Metal drawing) (Strains and stresses) (Al'shevskii, L.E.)

SMIRNOV, V.S.

USSR/ Engineering - Metal working

Card 1/1   Pub. 128 - 16/35

Authors   : Smirnov, V. S., Dr. Tech. Sc., Prof.

Title   : Formation of internal cracks during transverse forging

Periodical   : Vest. mash. 35/3, 49 - 53, Mar 1955

Abstract   : The term, transverse forging, is adopted for the system in which the blank
that is being processed is turned on its longitudinal axis between blows
of the hammer. An analysis is made of the strain set up by this process
and the conclusion is reached that if the blank is heated between opera-
tions the tensile strain in the axis zone will disappear and the cracks
will not be formed. Three USSR references: Illustrations; diagrams; graphs;
table.

Institution :   .....

Submitted   :   .....

SMIRNOV, V.S., doktor tekhn. nauk prof.

Rigid onds and adhesion area. [Trudy] TSNIITMASH 73:230-242 '55.
(Rolling (Metalwork))   (MIRA 11:3)

Smirnov, V. S.

"Stress State During Upsetting", Obrabotka Metallov Davieniyem,
Trudh LPI Nr 185, Mashgtz, Moscow-Leningrad, 1956, pp 5-16.

SOV/137-57-10-19058

AUTHOR.   Smirnov, V.S.

TITLE.   The Organization and Technology of Periodically Recurrent-shape
            Rolling of Billets for Forming and Machining Machine Parts (Ob
            organizatsii i tekhnologii prodol'noy periodicheskoy prokatki zago-
            tovok dlya shtampovki i obrabotki rezaniyem mashinostroitel'nykh
            detaley)

PERIODICAL. V sb. Ratsionalizatsiya profiley prokata. Moscow, Profizdat,
             1956, pp 318-325

ABSTRACT: In studying the process of deformation in the rolling of periodic-
             ally recurrent shapes, a most important problem is the determina-
             tion of the mechanism of fin formation, and also that of the funda-
             mental laws governing spread and forward slip. Experiments have
             established that minimal fin is produced when reductions are high.
             The nature of the relationship between the draft and the size of the
             fin is clarified. Spread is considerably less in periodic rolling
             than in the ordinary variety, and this establishes additional possibil-
             ities for raising productivity and saving metal.   S.G.

Card 1/1

SOV/124-58-4-4839

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 4, p 162 (USSR)

AUTHORS: Smirnov, V. S. , Yefimov, I. A.

TITLE: The Mechanism of Failure Under Transverse Forging (Mekhanizm razrusheniya pri poperechnoy kovke)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1956, Nr 185, pp 37-44

ABSTRACT: Bibliographic entry
            1. Metals--Forging   2. Metals--Mechanical properties

Card 1/1

SOV/124-58-5-5813

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 127 (USSR)

AUTHOR: Smirnov, V. S.

TITLE: Draw-forming Calculation in Wire Drawing (Raschet vytyazhek
          pri volochenii provoloki)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1956, Nr 185, pp 92-101

ABSTRACT: Bibliographic entry

          1. Wire--Production
          2. Industrial production--Mathematical analysis

Card 1/1

SMIRNOV, V. S.

Smirnov, V. S.; Anisiforov, V. P.; Vasil'chikov, M. V.; Granovskiy, S. P.; Kazanskaya, I. I.; Kuz'min, A. D.; Mekhov, N. V.; Pobedin, I. S.

Poperechnaya prokatka v mashinostroyenii (Cross Rolling in the Machine-building Industry) Moscow, Mashgiz, 1957. 375 p. 4,500 copies printed.

Ed. (title page):Tselikov, A. I., Corresponding Member of the USSR Academy of Sciences, and Smirnov, V. S., Doctor of Technical Sciences, Professor; Ed. (inside book): Kamnev, P. V.; Ed. of Publishing House: Leykina, T. L.; Tech. Ed.: Sokolova, L. V.; Managing Ed. of the Leningrad Branch of Mashgiz: Bol'shakov, S. A., Engineer.

PURPOSE: This book is intended for process engineers and machine designers engaged in the field of metalworking.

COVERAGE: The book contains a systematic discussion of the theory of cross rolling and helical cross rolling, and presents generalized conclusions from theoretical and experimental research work carried out, and experience gained in machine-building and metallurgical plants in the USSR. The cross-rolling processes, which are considered by the author as having wide potentialities, are currently used in several Soviet plants for the manufacture of bearing rolls and rollers,

Card 1/9

SMIRNOV, V. S.

137-58-4-6604

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 41 (USSR)

AUTHOR: Smirnov, V.S.

TITLE: The Role Played by Leningrad Plants and Institutes in the Development of Domestic Metallurgy (Rol' leningradskikh predpriyatii i institutov v razvitii otechestvennoy metallurgii)

PERIODICAL: V sb.: Metallurgiya. Moscow-Leningrad, AN SSSR, 1957, pp 7-14

ABSTRACT: A brief review of the development of metallurgy and the metals sciences in St. Petersburg-Petrograd-Leningrad, including metallography, the manufacture of high-grade steels, electric smelting, and the semi-continuous pouring of metals. Rolling shops are employed as illustrations of measures taken to facilitate the improvement of production and increase in output. The role of the higher educational institutions in Leningrad in the development of the metallurgical industry and the sciences pertaining thereto is noted.

L. Kh.

1 Metallurgy--Development--USSR

Card 1/1

AUTHOR: Smirnov, V. S.

TITLE: Stressed States in Diagonal and Transverse Rolling (Naprya-
            zhennoye sostoyaniye pri poperechnoy i kosoy prokatke)

PERIODICAL: V sb.: Inzhenern. metody rascheta tekhnol. protsessov obra-
            botki metallov davleniyem. Moscow-Leningrad, Mashgiz,
            1957, pp 47-70

ABSTRACT: Transverse and diagonal rolling produce zones of plastic
            and elastic deformation (the elastic nucleus) in the billet. Com-
            bined solution of the equilibrium equations and the plasticity
            equations for plastic shells to determine the elastic nucleus has
            yielded a solution of the two-dimensional problem for a cylind-
            rical body. Utilizing the plane-cross-section hypothesis, ex-
            perimental data, and the elementary propositions of statics, a
            formulation of the boundary conditions and derivation of approx-
            imate equations for the determination of the stresses at any
            point in the cross section of a blank in forging with small reduc-
            tions is obtained. These equations are equally applicable to the
Card 1/2   cases of diagonal and transverse rolling. Calculations in

SOV/137-58-9-19104

Stressed States in Diagonal and Transverse Rolling

accordance with these equations show that a pattern of omnidirectional ten-
sion obtains at the center of the cross section. An equation is derived for
determination of the boundary of the zone of impaired deformation. The data
resulting from calculation in accordance with this equation coincide with the
data of experiments in recrystallization and provide a basis for the assump-
tion that the stresses calculated in accordance with these equations are sim-
ilar in magnitude to those actually existing in the process of working the
metal. Equations for stresses may be utilized in determining the value of
the resistance to rupture, if the critical radius at the moment of failure has
been determined in advance.

Yu.L.

1. Steel--Processing   2. Rolling mills--Performance   3. Stress analysis
4. Mathematics

Card 2/2

AUTHOR: Smirnov, V. S.

TITLE: Stress Distribution in Hollow Cylinders During Their Cross-rolling in a Rotary-piercing Mill (Napryazhennoye sostoyaniye pri poperechnoy prokatke polykh tel)

ABSTRACT: The stress distribution in hollow cylinders (HC) during their rolling with and without a piercing mandrel is determined. The formulae derived are utilized in plotting the diagrams of the distribution of tangential and radial stresses occurring during rolling of HC of various wall thicknesses. It is apparent from these diagrams that radial and axial tensile stresses (S) appear in HC's with small axial openings in the course of rolling operations without a piercing mandrel. When the coefficient of friction is sufficiently large, tangential tensile stresses (TS) also appear in the inner regions of the billet, i.e., a condition of biaxial or triaxial nonuniform tensile stresses exists. A reduction in wall thickness occurring in HC's

Card 1/2

SOV/137-59-1-1764

Stress Distribution in Hollow Cylinders During Their Cross-rolling (cont.)

with sufficiently thick walls in the course of their cross-rolling in a rotary-piercing mill is attributable to the presence of radial TS's. Tangential and axial TS's also tend to promote this process. Immediately after the relief of radial TS's in the inner zone of the cylinder, its internal diameter begins to diminish in the course of rolling, while the thickness of its walls increases, i.e., the HC behaves as a thin-walled object, the deformation of which is governed primarily by compressive stresses. The critical ratio between the inner and the outer diameters, a factor which determines the boundary between thin-and-thick-walled bodies, is a function of various specific experimental conditions.

Yu. L.

Card 2/2

SMIRNOV, V.S., prof., doktor tekhn.nauk, otv.red.; PAVLOV, N.N., red.

[Conference of institutions for higher education on the topic: "Recent achievements in metal rolling."] Trudy Mezhvuzovskoi nauchno-tekhnicheskoi konferentsii na temu: "Sovremennye dostizheniia prokatnogo proizvodstva." Pod red. V.S.Smirnova. Leningrad, 1958. 250 p.   (MIRA 12:8)

1. Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya na temu: "Sovremennyye dostizheniya prokatnogo proizvodstva." 2. Leningradskiy politekhnicheskiy institut im. M.I.Kalinina (for Smirnov).
               (Rolling (Metalwork))

S/123/59/000/007/002/014
A004/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 7,
p. 60, # 24789

AUTHOR: Smirnov, V.S.

TITLE: Recent Achievements of Rolling Mill Production

PERIODICAL: Tr. Mezhvuz. nauchno-tekhn. konferentsii na temu: "Sovrem. dostizh.
             prokatn. proiz-va", Leningrad, 1958, pp. 5 - 14

TEXT: The author presents the achievements in rolling mill production;
increased rolling speeds up to 20 - 25 m/sec for wire mills and up to 30 - 35
m/sec for strip mills. Increase in drive power by 30 %; development of endless
rolling; intensification of the rolling conditions with the aid of planetary
mills; improvements of the metal heating processes; mastering alternating pro-
files by the longitudinal rolling method; developing combined methods of obtain-
ing profiles by bending and welding; combining casting, rolling and other
processes; mastering the rolling of new metals and alloys, etc.
                                                        M.G.N.
Translater's note: This is the full translation of the original Russian abstract.

Card 1/1

SOV/137-58-10-20921

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 78 (USSR)

AUTHOR: Smirnov, V.S.

TITLE: Stressed States in Helical and Transverse Rolling (Naprya-
zhennoye sostoyaniye pri poperechnoy i kosoy prokatke)

PERIODICAL: V sb.: Prokatn. i trubn. proiz-vo. Moscow, Metallurgizdat,
1958, pp 109-136

ABSTRACT: In transverse and helical rolling (HR), the outer layers of
the work piece undergo the most intensive deformation in such
fashion that the deformation (D) spreads gradually to the center
of the section. At some stage in the processes of transverse
and HR, tensile stresses begin to be operative in the axial zone
of the billet along the three major axes, with the result that the
metal is subjected to a   state of uneven tension in all direc-
tions. As the total reduction increases, the difference in the
tensile stresses in the axial zone diminishes and ultimately
becomes less than the σ_s of the metal in its given state. Plas-
tic D in the axial zone ceases, and thereafter the deformation of
the metal is elastic. In the peripheral area plastic D continues.
In connection therewith, tensile stresses in the axial zone

Card 1/2

SOV/137-58-10-20921

Stressed States in Helical and Transverse Rolling

continue to increase, and when the greatest of them equals rupture strength, failure occurs in the axial zone.

B.Ta.

1. Metals—Processing   2. Metals—Stresses   3. Metals—Deformation   4. Metals —Mechanical properties   5. Rolling mills—Performance

Card 2/2

AUTHORS: Smirnov, V.S., Pavlov, N.N., Mochalov, A.Ya.

TITLE: Grooving for Steel Angles by the Equivalent-strip Method (Kali-
brovka uglovoy stali po metodu sootvetstvennoy polosy)

ABSTRACT: A communication is presented on the results of the develop-
ment of the rolling of steel angles when the rolls are grooved
by the method of an equivalent strip. A presentation is made of
the overall course of the calculation of grooving for angle sec-
tions by this method. Prior to the calculation, the relationship
of the spread-ratio correction coefficient to the axial ratio is
determined, since a change in this relationship induces a change
in the effect of the pass walls on the spread. The ratio of the
index of spread to reduction for the rolling conditions on the
given mill (a 470 mill at one of the Leningrad plants) is deter-
mined. It is found that the fluctuating value of the spread ratio
correction coefficient renders impossible any further correc-
Card 1/2   tion of pass dimensions if it is found that they do not properly

SOV/137-58-10-20866

Grooving for Steel Angles by the Equivalent-strip Method

fill with metal. The pass-grooving calculation is adduced. Since 1952 grooving for several angle sections calculated by the method of the equivalent strip has been successfully employed at that plant. An investigation for the purpose of determining roll-separating pressure was conducted during the rolling of angle steel Nr 5 on the 470 mill, and the nature of the distribution of the pressure through the grooves was determined.

B.Ts.

1. Angle bars--Production   2. Rolling mills--Design   3. Rolling mills --Operation

Card 2/2

SOV/3-58-11-4/38

AUTHOR: Smirnov, V.S., Doctor of Technical Science, Professor,
                Institute Director

TITLE: A Question of Raising the Theoretical Training Level of En-
                gineers (Rech' idet o povyshenii teoreticheskogo urovnya
                podgotovki inzhenera)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 11, pp 14 - 16 (USSR)

ABSTRACT: The intended reform of secondary education is being planned
                opportunely. The secondary school will turn out 3.5 million
                persons yearly, of whom only 250,000 will be admitted to
                higher educational institutions thus making it necessary to
                care for the future of over 3 million persons. It is there-
                fore expedient to educate the youth in such a way that they
                are prepared for work. The planned introduction of a 4-year
                or 6-year professional evening school resulting in a com-
                pleted secondary education is regarded by the author as some-
                what cumbersome. He suggests a simpler system of 8 classes
                of ordinary day-time instruction followed by 3 classes of
                an evening school. Turning to higher education, the author
                believes that the offered education, which starts with cor-
                respondence tuition and is continued by resident education,
Card 1/2   is hardly acceptable to the Leningrad Polytechnical Institute

Smirnov, V.S.

PHASE I BOOK EXPLOITATION   SOV/3546

Leningrad. Politekhnicheskiy institut

Obrabotka metallov davleniyem (Metal Forming) Moscow, Mashgiz, 1959. 175 p.
(Series: Its: Trudy, N•, 203) Errata slip inserted. 3,200 copies printed.

Sponsoring Agency: RSFSR. Ministerstvo vysshego i srednego spetsial'nogo
   obrazovaniya.

Resp. Ed.: V.G. Podporkin, Candidate of Technical Sciences, Docent; Ed.:
   V.S. Smirnov, Doctor of Technical Sciences, Professor; Tech. Ed.: L.V.
   Shchetinina; Managing Ed. for Literature on the Design and Operation of
   Machines (Leningrad Division, Mashgiz): F.I. Fetisov, Engineer.

PURPOSE: This book is intended for students taking advanced engineering
   courses, production engineers, and personnel at schools of higher technical
   education and scientific research establishments studying rolling and
   other metal-forming processes.

Card 1/6

SOV/3546

Metal Forming

3. Pavlov, N.N. Investigating the State of Stress in the Twelve-Roll-Mill   29
Roll Cradle
      Load conditions in bearings of a multiple-roll mill were investigated.
      Recommendations for reducing nonuniform wear in mill parts are presented.

4. Smirnov, V.S., and P'ae-uk Han, Angle of Bite in Rolling As Determined by   38
the Class of Surface Roughness of Rolls and Strip
      Dependence of the angle of bite and coefficient of friction in rolling on
      the surface roughness of work and rolls was investigated.

5. Durnev, V.D. Longitudinal Rolling of Periodic Shapes of Variable Cross   49
Section in Two Grooves

6. Smirnov, V.S., and M.F. Nevizhin, Effect of the Shape of Piercing Mandrel   58
and Rolls on Basic Parameters of the Piercing Process

7. Nevizhin, M.F. Dependence of the Coefficient of Axial Slip and the Quali-   76
ty of Tubes on Piercing Speed and the Roll-Inclination Angle

Card 3/6

Metal Forming   SOV/3546

Card 4/6

Metal Forming

SOV/3546

SMIRNOV, V.S., prof., doktor tekhn. nauk, otv. red.; PAVLOV, N.N., red.

[Proceedings of the Scientific Technical Conference of Institutions of Higher Learning on the Subject "Recent Achievements in Metal Rolling."] Trudy mezhvuzovskoi nauchno-tekhnicheskoi konferentsii na temu: "Sovremennye dostizheniia prokatnogo proizvodstva," Leningrad, 1958. Pod red. V.S. Smirnova. Leningrad, Vol.2.   1959.   445 p.   (MIRA 14:7)

1. Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya na temu: "Sovremennyye dostizheniva prokatnogo proizvodstva.".Leningrad, 1958.
2. Leningradskiy politekhnicheskiy institut im. M.I.Kalinina (for Smirnov)

(Rolling (Metalwork))

SMIRNOV, V.S.

PHASE I BOOK EXPLOITATION

Leningrad. Politekhnicheskiy Institut.

Obrabotka metallov davleniyem (Metal Forming) Moscow, Mashgiz, 1959. 175 p.
(Series: Its: Trudy, No. 205) Errata slip inserted. 3,200 copies printed.

Sponsoring Agency: RSFSR. Ministerstvo vysshego i srednego spetsial'nogo
obrazovaniya.

Resp. Ed.: V.G. Podporkin, Candidate of Technical Sciences, Docent; Ed.:
V.S. Smirnov, Doctor of Technical Sciences, Professor; Tech. Ed.: L.V.
Sobatinina (Leningrad Division, Mashgiz); Ed. for Literature on the Design and Operation of
Machines (Leningrad Division, Mashgiz); F.I. Fadiosv, Engineer.

PURPOSE: This book is intended for students taking advanced engineering
courses, production engineers, and personnel at schools of higher technical
education and scientific research establishments studying rolling and
other metal-forming processes. In a series presenting the results of a series
of investigations conducted by the metal-forming department of the Leningrad
skiy politekhnicheskiy institut imeni M.I. Kalinina (Leningrad Polytechnical
Institute imeni M.I. Kalinin). The subjects covered include problems in the
theory and practice of rolling, tube drawing, extrusion and making of compound
dies. The first paper supplements the work of N.I. Treliler and Ye. P. Unksov.
References accompany most of the articles.

4. Smirnov, V.S., and Pisenuk Han, Angle of Bite in Rolling is Determined by
the Kind of Surface Roughness of Rolls and Strip   38
Dependence of the angle of bite and coefficient of friction in rolling on
the surface roughness of work and rolls was investigated.

5. Durnev, V.D. Longitudinal Rolling of Periodic Shapes of Variable Cross   49
Section in Two Grooves

6. Smirnov, V.S., and M.F. Nevinin. Effect of the Shape of Piercing Mandrel   58
and Rolls on Basic Parameters of the Piercing Process

7. Vievishin, M.F. Dependence of the Coefficient of Axial Slip and the Quali- 76
ty of Tubes on Piercing Speed and the Roll-Inclination Angle

8. Chang Shun-Tien. Investigating Plastic Deformation in the Cross Rolling   81
of Discs

9. Smirnov, V.S., and Chang Shun-Tien. State of Stress in Cross and Helical   89
Rolling of Discs

10. Smirnov, V.S., and Chang Shun-Tien. Effect of Some Process Factors on   99
the Susceptibility of a Blank to Core Failure in Helical Rolling
The above five articles present the results of investigations of deforma-
tion, state of stress, and the effect of various process factors on the
quality of tubes, productivity, pressure of work on rolls, and the cover
consumed in cross and helical rolling and in piercing.

11. Bogoyavlenskiy, K.N. Change in the Mechanical Properties of Metal in   105
Rolling in a Structural Mill

12. Bogoyavlenskiy, K.N. Influence of Work Hardening on the Relationship   112
Between Hardness and Other Mechanical Properties of Bent Shapes

13. Bogoyavlenskiy, K.N. Analytical Solution of the Problem of Determining   120
the Increase of Work Hardening in Bent Shapes

14. Bogoyavlenskiy, K.N. Determining Bending Moments Taking Into Account   123
Work Hardening in the Rolling of Strip in a Structural Mill
The above four articles describe the results of investigations of the
bending of shapes from strip. Data on changes in the mechanical pro-
perties and work hardening in bending, and also the determination of
forces and bending moments are presented.

15. Smirnov, V.S., and A.P. Belousov. Stress Analysis in Bending   135

16. Belousov, N.P. Stability of a Pipe During Reduction by Drawing   142
The above two articles are devoted to the investigation of a state
of stress and deformation in drawing.

17. Smirnov, V.S. Experimental Determination of the Generalized Stress-   146
Strain Relationship

18. Smirnov, V.S. Approximate Determination of Residual Stresses Gener-   150
ated in the Cross Rolling of an Infinite Cylinder
An approximate method, based on the theory of small elastic-plastic
strains, for determining residual stresses in cross rolling is
described.

19. Pavlov, N.N. Determining Mechanical Properties of a Steel Band   161
in Relation to the Degree of Work Hardening

GUBKIN, Sergey Ivanovich; SMIRNOV, V.S., red.; ULANOVSKAYA, I.A., red.
    izd-va; ISLENT'YEVA, P.G., tekhn.red.

    [Plastic deformation of metals] Plasticheskaia deformatsiia
    metallov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry. Vol.3.
    [Theory of plastic metalwork] Teoriia plasticheskoi obrabotki
    metallov. 1960. 306 p.   (MIRA 13:5)
            (Metalwork)   (Deformations (Mechanics))

GUBKIN, Sergey Ivanovich [deceased]. Prinimal uchastiye STOROZHEV, M.V.,.
PERLIN, I.Ya., retsenzent; SMIRNOV, V.S., red.; ULANOVSKAYA,
I.A., red.izd-va; ISLENT'YEVA, P.G., tekhn.red.

[Plastic deformation of metals] Plasticheskaia deformatsiia
metallov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi
i tsvetnoi metallurgii. Vol.1. [Physicomechanical principles
of plastic deformation] Fiziko-mekhanicheskie osnovy plasti-
cheskoi deformatsii. 1960. 376 p.   (MIRA 13:2)
        (Deformations (Mechanics))   (Physical metallurgy)

GUBKIN, Sergey Ivanovich; SMIRNOV, V.S., red.; GOROBINCHENKO, V.M., red.
izd-va; ISLENT'YEVA, P.G., tekhn.red.

[Plastic deformation of metals] Plasticheskaia deformatsiia
metallov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry. Vol.2.
[Physicochemical theory of plasticity] Fiziko-khimicheskaia
teoriia plastichnosti. 1960. 416 p.   (MIRA 13:5)
      (Physical metallurgy)   (Plasticity)

POLUKHIN, Petr Ivanovich; FEDOSOV, Naum Maksimovich; KOROLEV, Andrey Andreyevich; MATVEYEV, Yuriy Mikhaylovich; SMIRNOV, V.S., prof., doktor tekhn.nauk, retsenzent; LAUR, G.K., retsenzent; GROMOV, N.P., dotsent, kand.tekhn.nauk, red.; GOROBINCHENKO, V.M., red. izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Rolling mill practice] Prokatnoe proizvodstvo. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 966 p. (MIRA 13:10)

1. Zamestitel' glavnogo inzhenera Magnitogorskogo metallurgicheskogo kombinata (for Laur).
(Rolling (Metalwork))

POLOVNIKOV, Viktor Viktorovich; FILIPPOV, Pavel Fedorovich; BODAZHKOV,
Vyacheslav Aleksandrovich; SEMIBRATOV, Genrikh Gavrilovich;. GIN-
ZBURG, K.S., inzh., retsenzent; SMIRNOV, V.S., red.; LEYKINA, T.L.,
red. izd-va; BARDINA, A.A., tekhn. red.

[Shaping spur gears by rolling] Izgotovlenie tsilindricheskikh zub-
chatykh koles prokatkoi. Pod red. V.S.Smirnova. Moskva, Gos. nauchno-
tekhn. izd-vo mashinostroit. lit-ry, 1961. 187 p.   (MIRA 14:9)

1. Chlen-korrespondent AN SSSR (for Smirnov).
     (Gearing, Spur)   (Rolling (Metalwork))

PHASE I BOOK EXPLOITATION   SOV/5800

Smirnov, Vasiliy Sergeyevich, Vasiliy Dmitriyevich Durnev, and Nikolay Petrovich Kashevskiy

Prodol'naya periodicheskaya prokatka (Longitudinal Periodic-Profile Rolling)
   Moscow, Mashgiz, 1961. 254 p. 6000 copies printed.

Ed. (Title page): V. S. Smirnov, Corresponding Member, Academy of Sciences USSR;
   Ed.: P. V. Kamnev, Candidate of Technical Sciences; Ed. of Publishing House:
   G. A. Mitarchuk; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on
   the Design and Operation of Machines, Leningrad Department, Mashgiz: F. I.
   Fetisov

PURPOSE: This book is intended for technical personnel, and may also be useful to
   students at schools of higher technical education specializing in mechanical
   engineering amd metallurgy .

COVERAGE: Problems of periodic-profile rolling are discussed. Particular atten-
   tion is given to the rolling of periodic profiles used as blanks in pressworking
   and in some cases as finished products. Also discussed are theoretical funda-

Card 1/4

CHIZHIKOV, Yuriy Mikhaylovich; SMIRNOV, V.S., red.; BRINZA, V.N., red. izd-
    va; ATTOPOVICH, M.K., tekhn. red.

    [Rollability of steel and alloys] Prokatyvaemost' stali i splavov.
    Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi me-
    tallurgii, 1961. 451 p.   (MIRA 14:11)
        (Rolling (Metalwork))   (Deformations (Mechanics))

S/137/62/000/001/087/237
A052/A101

AUTHORS: Smirnov, V.S., Nevizhin, M.F.

TITLE: The effect of the mandrel and roll form on the basic parameters
             of the broaching process

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 33, abstract
             1D213 (V sb. "Stal'", Moscow, Metallurgizdat, 1961, 316 - 334)

TEXT: The broaching of CT 45 (St45) rods 40 mm in diameter at the tempera-
ture of 1,200°C was carried out at the Leningrad Polytechnic Institute on a
laboratory mill on rolls 200 mm in diameter and 180 mm long of different forms
(concave, convex and conical) and on different mandrels (conical with a conicity
r/ℓ of 0.17, 0.23, 0.33 with the length of 47 mm and also conical, concave,
convex and streamlined with a nose r5, 10 mm long). 18 combinations were tried
whereby with a concave roll working as a broaching cone the deformation could
not be brought about. The axial slide coefficient, that is the ratio of the
theoretical broaching time to the actual one, the broaching power and the effi-
ciency of the mill attain the maximum at a concave mandrel; at the same time
the minimum power consumption and the pressure on rolls are reached. The best

Card 1/2

S/137/62/000/001/087/237
A052/A101

results were achieved with pointed mandrels and conical rolls; the optimum ratio of the length of the working part of the mandrel to the diameter of its calibrating section was established as 1.8. Elaborated empirical formulas for determining the critical reduction in the nick were derived; the regularity of variation of the reduction coefficient in the rear zone of the deformation seat at the mandrel nose and on the generatrix was revealed; assuming the constancy of the ratio of the volumes displaced in the process of rolling along the length and in the tangential direction, these regularities enable one to determine also the spread coefficient and yield equations for the generatrix of the nose and the lateral surface of the mandrel, and thus to plot the profile of the tool. Calibration methods, considerably simplified compared to those published by V.S. Smirnov previously, are dealt with in detail. There are 7 references, see also RZhMet, 1961, 1D237.

Ye. Bukhman

[Abstracter's note: Complete translation]

Card 2/2

S. 148/61/000/001/014/015
A.c. A133

AUTHORS: Smirnov, V. S.; Simasheva, N. P.; Pavlov, N. N., and
Sokolova, L. T.

TITLE: Investigation of the recrystallization process of the ЭИ661
(EI661) alloy

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya,
no. 1, 1961, 176 - 180

TEXT: The investigation purpose was to find the recrystallization
threshold of ЭИ661 (EI661) steel. [Abstracter's note: The chemical compo-
sition is not given.] 1) Imprints by a 10 mm diameter ball under 3,000 kg
load; heating to different temperature, soaking for 40 min, then cooling
in open air; 2) Imprints with the same ball under 6,000 kg pressure; heat-
ing to different temperatures, soaking for 40 min, cooling; 3) Rolling at
different temperatures with 60% reduction. The recrystallization diagram
(Fig. 5) was plotted using forged half-cylinders 30 mm in diameter and
25 mm high, with a coordinate network traced on the parting surface of one

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of the half-cylinders. The pairs of specimens (i.e. the split cylinders) were placed into ring shells from 1X18H9T (1Kh18N9T) steel with 7.5 mm wall and heated in electric two-chamber furnaces in two stages: preliminary heating to 800°C in 30 min, then to the finally required forging tempera-ture in 15 min. The heated specimens were upset in a crank press at 1.5 - 2.0 m/sec, and cooled in air. The total deformation was 20, 40 and 60%. The deformation of one of the specimens is illustrated (Fig. 4). The etch-ing fluid consisted of 100 g $CuSO_4$; 500 cm³ HCl; 25 cm³ H_2SO_4; 400 cm³ H_2O. The specimens deformed at 1,050 - 1,200°C were difficult to etch and covered with a light-brown film. It was stated that austenite in these specimens was highly workhardened. Relaxed for 48 - 60 hours they etched in 60 sec without any film. The quantity of flat grains was determined us-ing Saltykov's method (Ref. 1; Introduction to stereometric metallography, Published by AN Arm. SSR, 1950), and the quantity of nodule points in 5 to 10 fields. Prior to deformation the mean austenite grain size was 652μ^2, and no great difference in grain size was observed. The grain size increas-ed on account of collective crystallization at higher temperatures and high-er deformations, particularly at the critical degree of deformation. The

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exception was at 1,180°C when the size reduced instead of increasing, not
only at the critical deformation but at high deformation degrees, too. At
1,150°C the grain size was 600 μ^2, and at 1,180° - 500 μ^2; the maximum
size was 5,650 and 2,250 μ^2 respectively. At 1,250°C the grain size at the
critical deformation was 5850 μ^2, and at high deformation degrees 1200 μ^2.
At reductions of over 12% the grain size did not depend on the deformation
degree at any temperature. No second maximum of grain size could be stated
in diagrams despite upsetting to nearly 90% at high temperature. Conclu-
sions: 1) The plotted recrystallization diagrams cover a wide range of de-
formations that occur in practice in specimen tests. 2) The EI661 steel
grain grows with the raising temperature. The exception is at 1,180°C where
the grain size decreases at critical and higher deformation degrees. 3) A
reduced grain size at 1,180°C, is accompanied with an increased plasticity
of the EI661 steel in pressure working. 4) The grain size does not depend
on the degree of deformation at compression above 12%. 5) The temperature
of the recrystallization threshold depends on the deformation degree: it is
about 1,000°C, at low deformation degrees near the critical; at higher de-
formation degrees it is lower. 6) No second maximum forms on the recrystal-
lization diagram. This is due to the peculiar deformation conditions at up-
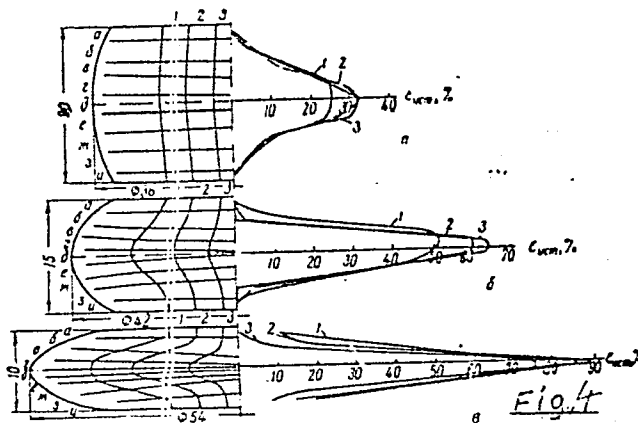
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S/148/61/000/001/014/015

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setting in shells.   There are 6 figures and 1 Soviet-bloc reference.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytech-
             nical Institute)

SUBMITTED: August 15, 1960

Fig. 4.

Fig. 4

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SMIRNOV, V.

PHASE I BOOK EXPLOITATION   SOV/5985

Rokotyan, Ye. S., Doctor of Technical Sciences, ed.

Prokatnoye proizvodstvo; spravochnik (Rolling Industry; Handbook) v. 1. Moscow,
  Metallurgizdat, 1962. 743 p. Errata slip inserted. 9250 copies printed.

Authors of this volume: B. S. Azarenko, Candidate of Technical Sciences; V. D.
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  date of Technical Sciences; V. V. Smirnov, Candidate of Technical Sciences;
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Rolling Industry; Handbook

reviewed. Articles dealing with the classification of rolling mills, general problems of design of rolling-mill stands, lubrication equipment, and the erection of rolling mills are included. The equipment of various types of rolling mills is described, and basic principles of the electric drive and automation of rolling mills are explained. No personalities are mentioned. There are no references.

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Rolling Industry; Handbook

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SMIRNCV, V.S.; CHIFITA, V.

Influence of the inertia force on metal rolling by rolling
mill cylinders. Studii cerc metalurgie 9 no.2:205-221 '64.

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.

Using electrothermal and mechanical analogies to study the
properties of metals and alloys. Trudy LPI no.243:5-11 '65.
(MIRA 18:6)

SMIRNOV, V.S.; CHURDNOVSKIY, A.F.; KAGANOV, M.A.

Theoretical way of evaluating the heat conductivity of porous
alloys at high temperatures. Trudy LPI no.243:12-18 '65.
(MIRA 18:6)

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; ROZOV, I.A.

Using formulas of correlated conductivity for the study of thermal,
electric, and thermoelectric properties of semiconducting materials.
Trudy LPI no.243:19-23   '65.   (MIRA 18:6)

SMIRNOV, V.S.

     Similitude theory in rolling. Trudy LPI no.243:38-43 '65.

     Geometrical similitude in the rolling of corresponding strips.
     Ibid.:44-53   (MIRA 18:6)

SMIRNOV, V.S.; GRIGOR'YEV, A.K.; DAVIL'BEKOV, N.Kh.

Coefficients of metal deformation during rolling in a cogging-down pass. Trudy LPI no.243:54-65 '65.

(MIRA 18:6)

SMIRNOV, V.S.; GRIGOR'YEV, A.K.; LUNEV, V.A.

Analyzing increase in width formulas and methods of the experi-
mental investigation of transverse deformation in rolling. Trudy
LPI no.243:69-78 '65.   (MIRA 18:6)

SMIRNOV, V.S.; KIRITSE, V.

Experimental investigation of gripping conditions. Trudy LPI no.243:79-84 '65.

Effect of inertial forces on metal gripping by rolling mill rolls. Ibid.:85-93

Applying the dimensional theory to determine the degree of elongation in die rolling with fins. Ibid.:96-105

(MIRA 18:6)

SMIRNOV, V.S.; DAVIL'BEKOV, N.Kh.; GRIGOR'YEV, A.K.

Determining metal pressure on the rolls during rolling in diamond passes. Izv. vys. ucheb. zav.; chern. met. 8 no.7:116-119 '65.

(MIRA 18:7)

1. Leningradskiy politekhnicheskiy institut.

SMIRNOV, Vasiliy Sergeyevich, prof.; GRIGOR'YEV, A.K., red.

[Theory of metal working by pressure; summary of lectures
for students specializing in the "Plastic working of
metals" of the physical metallurgy department] Teoriia ob-
rabotki metallov davleniem; konspekt lektsii dlia studen-
tov spetsial'nosti "Plasticheskaia obrabotka metallov" fi-
ziko-metallurgicheskogo fakul'teta. Leningrad, Leningr.
politekhn. in-t, 1965. 227 p. (MIRA 18:12)

1. Chlen-korrespondent AN SSSR (for Smirnov).

L 63992-65   EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(t)/EWP(k)/EWA(c)   EM/JD/HW

AM4040732   BOOK EXPLOITATION   UR/

Smirnov, Vasiliy Sergeyevich (Corresponding Member, Academy of Sciences USSR, ~~Professor~~)

Theory of elasticity and plasticity; summary of lectures for students of the physical metallurgy faculty majoring in the "Plastic treatment of metals" (Teoriya uprugosti i plastichnosti; konspekt lektsiy dlya studentov spetsial'nosti "Plasticheskaya obrabotka metallov" fiziko-metallurgicheskogo fakul'teta) Leningrad, 63. 0139 p. illus., biblio. 1,100 copies printed. (At head of title: MV i SSO RSFSR. Leningradskiy politekhnicheskiy institut im. N. I. Kalinina)

TOPIC TAGS: plasticity, vector analysis, tensor analysis, characteristic function, solid mechanical property, elasticity, mechanical stress, material deformation, creep

PURPOSE AND COVERAGE: All solids found in nature have elasticity characteristics. In the presence of an ideal elasticity the solids will regain their original form and volume after the removal of the load factor. There is a linear equivalent relation between the stress and the deformation of the solids. The study of the theory of elasticity involves the effective force on elastic bodies for

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the determination of stress and deformation. The results of the study are applied in various branches of technology, such as civil engineering, mechanical engineering, aerodynamics, geology, seismology, etc. The present work is published by the Physico-Metallurgical Department of the Leningrad Politechnical Institute. The book is a supplement to higher mathematics which includes the principles of vector and tensor analysis. It serves as a textbook for the course "The theory of elasticity and plasticity" which is a theoretical prerequisite for the course "The theory of metal working by pressure".

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OTHER: 000

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SMIRNOV, V.S. (Leningrad); GRIGOR'YEV, A.K. (Leningrad)

Pressure distribution on rolls in thin sheet rolling with large re-
ductions. Izv. AN SSSR. Otd. tekh. nauk Met. i gor. delo no.1:18-21
Ja-F '63.

(Rolling (Metalwork))   (MIRA 16:3)

SMIRNOV, V.S. (Leningrad); GRIGOR'YEV, A.K. (Leningrad)

Using dimensional analysis for the determination of transverse
deformation in rolling. Izv. AN SSSR. Met. i gor. delo no.5:
92-97 S-O '63.   (MIRA 16:11)

ACCESSION NR: AR4018327   8/0137/64/000/001/D019/D019

SOURCE: RZh. Metallurgiya, Abs. 1D106

AUTHOR: Smirnov, V. S.; Pavlov, N. N.

TITLE: Study of the process of rolling nickel and molybdenum powders

CITED SOURCE: Tr. Kuyby*shevsk. aviats. in-t, vy*p. 16, 1963, 85-92

TOPIC TAGS: powder metallurgy, molybdenum, nickel, metal powder rolling

TRANSLATION: An industrial method has been developed for obtaining compact bands
with high-precision thickness out of Mo and Ni powders with various inclusions, by
means of horizontal rolling. The influence of the engagement conditions, the clear-
ance between rolls, and the width of the feeder on the widening of the Me in the
rolls have been studied here. A method has been worked out for determining the
forces on the rolls, the power, the moments, and other power parameters in the pro-
cess of rolling metal powders. Interrelationships have been established between
power parameters, band thickness, and band width and its density during the hori-
zontal rolling of powders. An oblique method has been worked out for determining
the density of unfinished bands in microvolumes according to microhardness. This

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method was used to study the distribution of the density of the band by width and by length. It was shown, that a considerable difference in the density of the band exists in its center and on its edges.

SUB CODE: MM   ENCL: 00

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SMIRNOV, V.S.; PAVLOV, N.N.; CHUDNOVSKIY, A.F.; SEMENKOVICH, S.A.

Obtaining semiconductor thermoelements by the plastic deformation
method. Trudy LPI no.222:5-7 '63.   (MIRA 16:7)
        (Semiconductors) (Metal powder products)

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; PAVLOV, N.N.; ANDREYEVA, A.N.

Effect of ultrasonic waves on the crystallization and physical
properties of alloys. Trudy LPI no.222:8-14 '63.   (MIRA 16:7)
(Alloys—Metallography) (Crystallization)
(Ultrasonic waves—Industrial applications)

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; PAVLOV, N.N.; ANDREYEVA, A.N.

Effect of vibration on the crystallization of thermoelectric alloys.
Trudy LPI no.222:15-19 '63.   (MIRA 16:7)
    (Alloys--Thermoelectric properties) (Crystallization)

SMIRNOV, V.S.; SIMASHEVA, N.P.; PAVLOV, N.N.

Investigating the recrystallization process of the high-alloy
EI696 steel. Trudy LPI no.222:28-30 '63.   (MIRA 16:7)
(Steel alloys—Heat treatment) (Crystallization)

SMIRNOV, V.S.; PAVLOV, N.N.

Rolling and sintering of metal powders. Trudy LPI no.222:31-39
'63.   (MIRA 16:7)
            (Rolling (Metalwork)) (Powder metallurgy)

SMIRNOV, V.S.; BELOUSOV, N.P.; SHEYDIN, N.A.; MAL'TSEVSKAYA, R.M.

Making use of rolled wood pulp in the manufacture of laminated
wood plastics. Trudy LPI no.222:79-88 '63.   (MIRA 16:7)
          (Laminated plastics) (Veneers and veneering)

SMIRNOV, V.S.

Applying dimensional analysis to the solution of problems in
pressure metal working. Trudy LPI no.222:89-95 '63.   (MIRA 16:7)
(Rolling (Metalwork)) (Dimensional analysis)

SMIRNOV, V.S.; PAVLOV, N.N.; LUNEV, V.A.

Determining pressure on rolls during rolling with the help of
dimensional analysis. Trudy LPI no.222:96-101 '63.   (MIRA 16:7)
(Rolling (Metalwork)) (Dimensional analysis)