

Elastic constants of molecular ...

S/070/63/008/002/004/017
E021/E120

were measured, e.g. the volume compressibility is equal to $20 \times 10^{-6} \text{ cm}^2/\text{kg}$. It was shown that the results obtained experimentally agreed with theoretical values calculated by the method of A.I. Kitaygorodskiy (Dokl. AN SSSR, v.137, 1, 1961, 116) and A.I. Kitaygorodskiy and K.V. Mirskaya (Kristallografiya, v.6, 3, 1961, 406).
There is 1 table.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds, AS USSR)

SUBMITTED: August 25, 1962

Card 2/2

GABUDA, S.P.; LUNDIN, A.G.; MIKHAYLOV, G.M.; ALEKSANDROV, K.S.

Position of hydrogen atoms in natrolite. Kristallografiia 8
no.3:388-392 My-Je '63. (MIRA 16:11)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Sibirskiy
tekhnologicheskii institut.

ALEKSANDROV, K.S.; RYZHOVA, T.V.; BELIKOV, B.P.

Elastic properties of pyroxenes. Kristalografiia 8 no.5:738-741
S-O '63. (MIRA 16:10)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

ALEKSANDROV, K.S.; TROPIN, Yu.D.

Appearance of pyramids of growth on surfaces of iron whiskers.
Kristallografiia 8 no.6:928-929 N-D'63. (MIRA 17:2)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

GABUDA, S.P.; MIKHAYLOV, G.M.; ALEKSANDROV, K.S.

Behavior of zeolite water and the symmetry of harmotome.
Dokl. AN SSSR 153 no.6:1360-1362 D '63. (MIRA 17:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR. Predstav-
leno akademikom M.M. Dubininym.

ACCESSION NR: AP4017356

S/0126/64/017/002/0237/0242

AUTHORS: Talashkevich, I. P.; Kostin, N. F.; Aleksandrov, K. S.

TITLE: Elastic properties of fiber textured cubic metals

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 2, 1964, 237-242

TOPIC TAGS: modulus of elasticity, shear modulus, polycrystalline material, single crystal, elastic constant, Poisson coefficient, elastic, anisotropy

ABSTRACT: Expressions have been derived to determine the average value of Young's modulus E and the shear modulus G of isotropic polycrystalline material from the elastic constants of fiber-textured cubic metals. In a single axis grain (composed of a cubic system) the various grain elastic constants are determined by means of the elastic constants s_{ijk} of single crystals. These lead to the expressions for

\bar{E} and \bar{G}

$$\bar{E} = \frac{E^r}{1 - \frac{2}{5}(\sigma_d - \sigma_l)},$$

$$\bar{G} = \frac{G^r}{1 + \frac{2}{5} \frac{\sigma_d - \sigma_l}{1 + \sigma_l}},$$

Card 1/3

ACCESSION NR: AP4017356

where σ_d - dispersion Poisson coefficient and

$$\sigma_d - \sigma_d = -\frac{s^*}{s_{33}^*}$$

These are verified experimentally for 10-mm copper specimens of type M1 and MS, annealed at 600C for three hours and drawn through a die at room temperature down to 0.4-1.0 mm diameter. A qualitative analysis is made of the texture of the copper specimens from the change in E and G moduli, based on the fact that in face-centered cubic metals two single axis textures are created upon drawing the specimen with $[111]$ and $[100]$ orientations. The relationship between the sign of the elastic anisotropy and texture coefficient C_4 is given by

$$s_{33}^* = s_{11} - \frac{1}{10} \frac{s}{\pi n_4} C_4, \quad s_{44}^* = s_{44} + \frac{1}{5} \frac{s}{\pi n_4} C_4,$$

where $n_4 = -0.64636$. Orig. art. has: 8 formulas, 1 table, and 1 figure.

ASSOCIATION: Institut fiziki SO AN SSSR (Institute of Physics SO AN SSSR)

Card 2/3

ACCESSION NR: APL017356

SUBMITTED: 27Mar63

DATE AQ: 18Mar64

ENCL: 00

SUB CODE: ME

NO REF SOV: 008

OTHER: 015

Card 3/3

ALEKSANDROV, K.S.; RYZHOVA, T.V.

Internal conical refraction of elastic waves in ammonium
dihydrophosphate. Kristallografiia 9 no.3:373-376 My-Je '64.
(MIRA 17:6)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

L 2872-65 EWT(1)/EWP(e)/EPA(e)-2/EWT(m)/EPF(n)-2/EPA(w)-2/EWP(b)/EWA(h)
 Pab-10/Pu-10/Pu-4/Peb IJP(c) WH

53
52
B

ACCESSION NR: AP5004341

S/0070/65/010/001/0068/0073

AUTHOR: Aleksandrov, K. S.; Talashkevich, I. P.

TITLE: Distribution functions and physical properties of uniaxial piezoelectric textures 21

SOURCE: Kristallografiya, v. 10, no. 1, 1965, 68-73

TOPIC TAGS: distribution function, ferroelectric ceramic, piezoelectric ceramic, spontaneous polarization, anisotropy

ABSTRACT: The article derives the distribution functions of the orientations of the spontaneous-polarization axes in different ferroelectric phases of polarized ceramics, and obtains expressions relating the physical constants of the ceramics with the properties of the single crystals making up the ceramic. Tetragonal, trigonal, and rhombic phases of the polarized piezoelectric ceramic are considered. Unlike in earlier similar derivations, it is not assumed beforehand that the distribution function of the spontaneous-polarization axes of the domains is uniform. The distribution functions obtained for tetragonal, trigonal, and rhombic phases

Card 1/3

L. 28725-65

ACCESSION NR: AP5004341

are illustrated in Fig. 1 of the enclosure, which shows that the distribution is far from uniform within a certain range of angles. The difference between the derived distributions and uniform distributions leads to a change in the spontaneous polarization. Whereas a uniform distribution yields for the tetragonal, rhombic, and trigonal phases values 0.79, 0.85, and 0.79 respectively, the distributions calculated in the present article yield respective values 0.831, 0.912, and 0.866. Some general remarks are made concerning the results of the calculations, the most important being that the use of the obtained distribution functions lead to a noticeable change in the anisotropy of any physical property of the ceramic material, especially for the rhombic and rhombohedral phases. Orig. art. has: 3 figures and 7 formulas.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya AN SSSR (Institute of Physics, Siberian Department AN SSSR)

SUBMITTED: 29Feb64

ENCL: 01

SUB CODE: SS

NR REF SOV: 003

OTHER: 004

Card 2/3

L 28725-63

ACCESSION NR: AP5004341

ENCLOSURE: 01

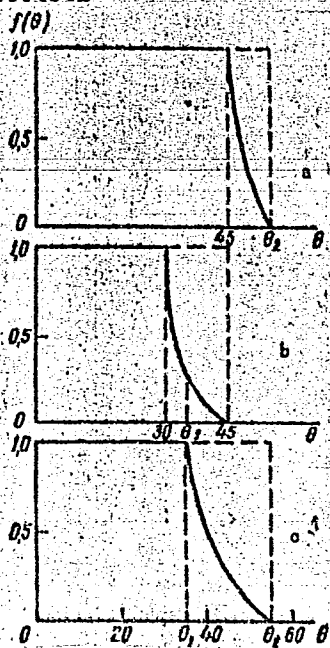


Fig. 1. Plots of distribution functions in different phases:

- a - tetragonal
- b - rhombic
- c - rhombohedral

Card 3/3

RYZHOVA, T.V.; ALEKSANDROV, K.S.

Elastic properties of potassium-sodium feldspars. Izv. AN SSSR.
Fiz. zem. no.1:98-102 '65.

(MIRA 18:5)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

ALEKSANDROV, K.S.; GABUDA, S.P.; LUNDIN, A.G.

Proton magnetic resonance in the ferroelectric $\text{Ca}_2\text{Sr}(\text{CH}_3\text{CH}_2\text{COO})_6$.
Izv. AN SSSR. Ser. fiz. 29 no.6:907-909 Je '65.

(MIRA 18:6)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

ANISTRATOV, A.T.; FOTCHENKOV, A.A.; ALEKSANDROV, K.S.

Measuring the linear electro-optical effect in crystals using
the dynamic method. Izv. AN SSSR. Ser. fiz. 29:973-977 Je '65.
(MIRA 18:6)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

ALEKSANDROV, K.S.

Mean values of tensor quantities. Dokl. AN SSSR 164, no.4:800-803
0 '65. (MIRA 18:10)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR. Submitted
February 26, 1965.

TALASHKEVICH, I.P.; ALEKSANDROV, K.S.

Development of an axial texture in metals with a face-centered cubic lattice. Fiz. met. i metalloved. 20 no.2:270-273 Ag '65.
(MIRA 18:9)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

L 40027-66 EN(1) GW

ACC NR: AP6004990

SOURCE CODE: UR/0011/66/000/002/0003/0019

AUTHOR: Aleksandrov, K. S.; Belikov, B. P.; Ryzhova, T. V.

ORG: Institute of Physics, SO AN SSSR, Krasnoyarsk (Institut fiziki SO AN SSSR); IGEM AN SSSR, Moscow

TITLE: Calculation of elastic parameters of rocks on the basis of mineral composition

SOURCE: AN SSSR. Izvestiya. Seriya geologicheskaya, no. 2, 1966, 3-19

TOPIC TAGS: elastic modulus, propagation velocity, porosity, multiphase rock, *MINERAL MINERALOGY*

ABSTRACT: Elastic moduli of rocks with uniphase and multiphase were investigated on the basis of quantitative evaluation of their composition. The data were compared with the experimental values obtained from some selected rocks. Because the errors in the determination of the elastic properties of minerals usually range from 3 to 10%, the Voigt-Reuss-Hill method, described in detail by Belikov (1964), was employed for studying uniphase rocks; it was assumed that a multicomponent aggregate is elastically isotropic. A formula

$$\frac{1}{A'} = \sum_i \frac{V_i}{A_i}$$

was used for the evaluation of the mean elastic modulus (A') of an aggregate, where V_i is the specific volume of i component and A_i is the elastic modulus of i mixture component. Some experimental values of the elastic properties were obtained using the

Card 1/3

UDC: 552.12 + 549.1

L 40027-66

ACC NR: AP6004990

10

extended to Yu. K. Andreyeva, G. D. Afanas'yev, I. V. Ginzburg, V. I. Gon'shakova, V. A. Kononova, L. M. Lebedev, A. S. Marfunin, V. F. Morkovkin, V. G. and N. G. Udovkina.
Orig. art. has: 3 formulas and 8 tables.

SUB CODE: 08/ SUBM DATE: 08Jun65/ ORIG REF: 017/ OTH REF: 029

ms
Card 3/3

L 26744-66 EWT(1)/EEC(k)-2

ACC NR: AF6011469

SOURCE CODE: UR/0170/66/011/002/0255/0258

AUTHOR: Anistratov, A. T.; Aleksandrov, K. S.

ORG: Institute of Physics, Siberian Department, AN SSSR (Institut fiziki Sibirskogo otdeleniya AN SSSR)

TITLE: Conditions for separate measurement of the linear and quadratic electro-optical effects

SOURCE: Kristallografiya, v. 11, no. 2, 1966, 255-258

TOPIC TAGS: electrooptic effect, piezoelectric crystal, electric polarization

ABSTRACT: The authors show that even when the linear and quadratic electrooptical effects exist simultaneously in piezoelectric crystals, they can be measured separately by either static or dynamic methods. The proof is based on an evaluation of the charge occurring in the polarization constants of such crystals following application of an electric field, expressed in terms of the strain and the rotation of the optical axis. This conclusion is corroborated by a theoretical analysis and it is pointed out in the conclusion that the possibility of separating the two effects has never been employed before. The authors propose to review in a future paper the presently available experimental data from the point of view of their deduction. The authors thank A. A. Potchenkov for participating in a discussion of the results. Orig. art. has: 13 formulas.

SUB CODE: 20/ SUBM DATE: 04 Jan 65/ ORIG REF: 010/ OTH REF: 011

Card 1/1 FV

UDC: 548.0: 537.228

ACC NR: AP6036322

SOURCE CODE: GE/0030/66/018/011/K017/K020

AUTHOR: Aleksandrov, K. S.; Reshchikova, L. M.; Beznosikov, B. V.

ORG: Institute of Physics, Siberian Department of the Academy of Sciences, Krasoyarsk

TITLE: Behavior of the elastic constants of KMnF_3 single crystals near the transition of puckering

SOURCE: Physica status solidi, v. 18, no. 11, 1966, K17-K20

TOPIC TAGS: elasticity, phase transition, ^{single}crystal structure, cubic crystal

ABSTRACT: An investigation was made of the anomaly in the elastic behavior of KMnF_3 single crystals. KMnF_3 has two phase transitions. Above 184K the crystals have a cubic structure. Below this temperature they possess orthorhombic symmetry. The crystals were grown from a melt of MnF_2 and KFHF in Ar and HF gas atmosphere. The specimen had orientations of [100] [110], and [111], and linear dimensions of 1.9545, 1.3560, and 1.3203 cm, respectively. The velocities of longitudinal and shear elastic waves in these directions were measured by an ultrasonic pulse method (3×10^7 cps). A sharp anomaly in the elasticity of KMnF_3 single crystals was found in the vicinity of the upper phase transition. All velocities (V) rise with the temperature in the cubic phase in the range investigated. For the majority of crystals, the slopes of $C_{ik}(T)$ and $V(T)$ curves (C_{ik} is the elastic constant) are negative. At 20 to 30° above the transition (for the above-mentioned crystals the

Card 1/2

ACC NR: AP6036322

transition point is 198K) all the longitudinal and one of the shear wave $[\rho v^2 = 1/2(C_{11} - C_{12})]$ velocities begin to decrease. This decrease in velocities is accompanied by a sharp increase in ultrasonic attenuation. The velocities of longitudinal waves have non-zero values at the transition point. There are no magnetic and dielectric anomalies in KMnF_3 at this transition. The lattice parameters of the low-temperature phase have a linear temperature dependence. The transition point increases with the Na content in the system $(\text{K}_{1-x}\text{Na}_x)\text{MnF}_3$, where $x \leq 0.1$. The direction of this shift is in accordance with Isupov's data for the puckering transitions in other crystals of the perovskite family. Orig. art. has: 2 figures. [WA-14]

SUB CODE: 20/ SUBM DATE: 22Sep66/ ORIG REF: 003/ OTH REF: 004/

Card 2/2

ALEKSANDROV, L.

Tractors-Repairing

Organization of tractor repair on the "Shishovskaia" Machine-Tractor Station.

MTS 12 No. 3, 1952.

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

2

ALEKSANDROV, L.

Anniversary conference. Avt. transp. 38 no. 5:59 My '60.
(MIRA 14:2)

1. Predsedatel' orgkomiteta po provedeniyu yubileynoy konferentsii avtotransportnogo fakul'teta Moskovskogo inzhenerno-ekonomicheskogo instituta im. Sergo Ordzhonikidze.
(Moscow—Universities and colleges)

ALEKSANDROV, L., dotsent

Scientific conference on interurban haul service. Avt.
transp. 40 no.3:61 Mr '62. (MIRA 15:2)
(Transportation, Automotive)

KONSTANTINOV, A.; ALEKSANDROV, L.; KHMEL'NITSKAYA, L., red.;
SINYUKHIN, V., tekhn. red.

[Guide to the exhibition of Achievements of the National
Economy of the U.S.S.R.] Putevoditel' vystavki dostizhenii
narodnogo khoziaistva SSSR. Moskva, Otdel informatsii i
pechati VDNKh SSSR, 1962. 74 p. (MIRA 17:2)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR.

ALEKSANDROV, L.

Development in the free Pirin Mountain region. p. 4.
(GEOGRAPILA Vol. 5 No. 3, 1955, Sofiya)

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 9,
Sept. 1955, Uncl.

ALEKSANDROV, L.

ALEKSANDROV, L. Kara-Kum Canal. p. 11.

Vol. 5, no. 9, 1955
GEOGRAFIIA
Sofiya, Bulgaria

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

ALEXANDROV, L.

Cuba, island of sugar production. p. 12

GEOGRAPHIA VOL. 5, no. 10, 1955

Sofiya, Bulgaria

so. EAST EUROPEAN ACCESSIONS LIST VOL. 5, no. 7 July 1956

ALEKSANDROV, L.

The Chu Valley, p. 12.

(Geografiia, Vol. 7, no. 4, 1957. Sofia, Bulgaria)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

ALEKSANDROV, L.

"Fergana the Valley of White Gold."

p. 10 (Geografiia, Vol. 8, No. 5, 1958, Sofia, Bulgaria)

Monthly Index of East European Accessions (FEAI) LC, Vol. 7, No. 11,
Nov, 1958

ALEKSANDROV, L. A.

AID P - 1882

Subject : USSR/Meteorology and Hydrology

Card 1/1 Pub. 71-a - 25/26

Author : Aleksandrov, L. A.

Title : ~~Twenty five years of Soviet radio sounding~~
Twenty five years of Soviet radio sounding

Periodical : Met. i gidro., no.2, 65, 1955

Abstract : The article reports several conferences commemorating the 25th anniversary of the construction of the radio-sounding instrument designed by Professor P. A. Molchanov.

Institution : None

Submitted : No date

[A.]
ALEKSANDROV, L., dots.

Training of engineers-economists should be on the level of
current objectives. Avt.transp. 37 no.11:50 N '59.

(MIRA 13:2)

(Transportation, Automotive--Study and teaching)

BRONSHTEYN, Lev Abramovich, dotsent, kand.tekhn.nauk; ALEKSANDROV, L.A., kand.ekon.nauk, retsenzent; USHAKOV, B.P., kand.tekhn.nauk, retsenzent; KUDRYAVTSEV, A.S., prof., doktor ekon.nauk, zaslužennyy deyatel' nauki i tekhniki RSFSR, obshchiy red.; IOFFE, M.L., red.; MAL'KOVA, N.V., tekhn.red.

[Organization and planning of automotive transportation units]
Organizatsiia i planirovanie avtotransportnykh predpriatii.
Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i
shosseinykh dorog RSFSR, 1959. 439 p. (MIRA 13:2)

1. Moskovskiy inzhenerno-ekonomicheskii institut imeni Sergo
Ordzhonikidze (for Ushakov).
(Transportation, Automotive)

ALEKSANDROV, L.A.; AKSENOVA, Z.I.; ARTEM'YEV, S.P.; AFANAS'YEV, L.L.;
BONSHTEYN, L.A.; BURKOV, M.S.; BUYANOV, V.A.; VELIKANOV, D.P.;
VERKHOVSKIY, I.A.; GOBERMAN, I.M.; DAVIDOVICH, L.N.; NEGTEREVA,
G.N.; ZEMSKOV, P.F.; KALAHUKHOV, F.V.; KOLESNIK, P.A.; KOZHIN,
A.P.; KRAMARENKO, G.V.; KRUZE, I.L.; KURSHEV, A.N.; OSTROVSKIY,
N.B.; PASHINA, S.N.; SEMIKIN, N.V.; TARANOV, A.T.; TIKHOMIROV,
A.K.; ULITSKIY, P.S.; USHAKOV, B.P.; FILIPPOV, V.K.; CHERNYAVSKIY,
L.M.; CHUDINOV, A.A.; SHUPLYAKOV, S.I.; TIKHOMIROV, N.N.

Petr Valerianovich Kaniovskii; obituary. Avt.transp. 37
no.4:57 Ap '59. (MIRA 13:6)
(Kaniovskii, Petr Valerianovich, 1881-1959).

ALEKSANDROV, L. A. kand.ekon.nauk

Mechanization of loading and unloading operations is the most important objective of automotive transportation workers. Avt.transp. 38 no.8:35-36 Ag '60.

(MIRA 13:8)

(Loading and unloading--Technological innovations)

BOGORODITSKIY, N.P.; REYNOV, N.M.; ALEKSANDROV, L.A.

Temperature dependence of ϵ'' of the compound CaZrO_3 at liquid
helium temperatures. Fiz. tver. tela 1 no.2:350-352 F '59.
(MIRA 12:5)

(Calcium zirconate--Electric properties)
(Low temperature research)

5.4600 (A)
24.2400

S/057/60/030/06/16/023 81595
B012/B064

AUTHORS: Aleksandrov, L. A., Bogoroditskiy, N. P., Lisker, K. Ye.,
Fridberg, I. D.

TITLE: On the Temperature Dependence¹⁾ of the Dielectric Constant²⁾
of the Ion Dielectrics in a Wide Temperature Range

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol.30, No.6, pp.699-704

TEXT: With reference to the papers (Refs. 1, 2) investigations are described of a series of clear crystalline phases and their mixtures as applied in radio ceramics. The purpose of these investigations was to obtain further data on the character of the temperature dependence of the temperature coefficient $TK\epsilon$ of the dielectric constant in a wide temperature range. The ceramics which were investigated are listed and the production of the samples and the mode of the experiments is described. Since in many dielectrics ϵ varies strongly with temperature, $TK\epsilon$ was calculated in every case for a narrow range of temperature of $15 \pm 20^\circ\text{C}$. This coefficient has the symbols $TK\epsilon_d$ (d = differential). The data obtained by the experiment are given and discussed. Fig. 2 gives the temperature dependences of the

Card 1/2

On the Temperature Dependence of the
Dielectric Constant of the Ion Dielectrics
in a Wide Temperature Range

S/057/60/030/06/16/023 81595
B012/B064

investigated compounds in the range of $(-150) + (+150)^{\circ}\text{C}$. It is seen that for most of the ion dielectrics (polycrystalline ceramics, glasses, mica) $\text{TK}\epsilon_d$ decreases with a drop in temperature, but in some cases (calcium stannate, calcium zirconate) a minimum of $\text{TK}\epsilon_d$ is observed. Those dielectrics in which $\text{TK}\epsilon$ is subject to a particularly strong change (up to 2.5 - 3 times) can be divided into two groups. These are explained in detail. On the basis of the investigations made it can be assumed that in the various ceramic dielectrics a relaxation polarization at low temperatures exists, i.e., in ceramic dielectrics with and without titanic dioxide. The paper by V. A. Ioffe (Ref. 6) is mentioned. There are 7 figures and 6 references: 3 Soviet and 3 English.

SUBMITTED: December 18, 1959

Card 2/2

ALEKSANDROV, L.

PA 236T33

USSR/Electronics - Time-Delay

Jun 52

"An Electronic Time-Delay Relay," L. Aleksandrov

"Radio" No 6, p 60

Description of an electronic time-delay circuit which provides any delay from 0.5 sec to 1 min in opening or closing an elec circuit. The device has two tubes, i.e., a 6Ts5S (or 5Ts4S) rectifier and a type TG1-0.1/1.3 (TG-2050) thyatron.

236T33

KRYLOV, Nikolay Nikolayevich, professor, doktor tekhnicheskikh nauk;
RIZKIN, A.A., kandidat tekhnicheskikh nauk, redaktor; ALEKSANDROV, L.A.,
redaktor; VOLKOVA, Ye., redaktor.

[Theoretical principles of radio engineering] Teoreticheskie osnovy
radiotekhniki. Izd. 2., stereotipnoe. Moskva, Morskoi transport,
1953. 552 p.

(MLRA 7:5)

(Radio)

ALEKSANDROV, L.

Direct Current Amplifiers, L. Aleksandrov, Moscow. Radio No.3, pp 46-49, Mar '53.

Describes various dc amplifier circuits including 2 stage types with a battery, potentiometer, or neon lamp used as inter-stage coupling. Also gives principles of more complex push-pull types. Discusses operating stability and amplifiers using a carrier frequency.

255T82

ALEKSANDROV, L.

High stability master oscillator. Radio no.6:25-26 Je '53. (MLRA 6:6)
(Radio, Short-wave--Transmitters and transmission)

ALEKSANDROV, I. I.

KAUFMAN, Anatoliy Leonidovich; ALEKSANDROV, I. I., redaktor; LAVRENOVA, N.B.,
tekhnicheskiiy redaktor

[Sound reading and transmission by hand key of radiotelegraph
signals; methods of study] Priem na slukh i peredscha kluchom
radiotelegrafnykh signalov; metodika izucheniia. Moskva, Izd-vo
"Morskoi transport," 1957. 97 p. (MIRA 10:9)
(Radiotelegraph)

ALEKSANDROV, L.A.

PHASE : BOOK KUPOLATION

SOVIET

Vsesoyuznaya konferentsiya po fizike dielektricheskoy. 2d, 1958

Plasma dielektricheskoy i inye fizicheskoy konferentsii (Physics of Dielectrics, Plasma and Ionospheric Conference) on the Physics of Dielectrics, Moscow, 1958. 1960. 312 p. Russian and English. 3,000 copies printed.

Sponsoring Agency: Academy of Sciences, Physicochemical Institute, P.N. Lebedev.

Editorial Board: (Chairman) I.L. Stetsko; (Members) I.M. Doroshin; Editorial Board: (Chairman) G.I. Skanavi; (Members) Doctor of Physics and Mathematics (Physics), and I.V. Filippov, Candidate of Physics and Mathematics.

Purpose: This collection of reports is intended for scientists investigating the physics of dielectrics.

Content: The Second All-Union Conference on the Physics of Dielectrics held in Moscow at the Physicochemical Institute, P.N. Lebedev (Physics Institute, P.N. Lebedev) in November 1958 was attended by representatives of the principal scientific centers of the USSR and of several other countries. This collection contains most of the reports presented at the conference and summaries of the discussions which followed. The reports in this collection deal with dielectric properties, losses, and polarization, and with specific inductive properties of various crystals, chemical compounds, and ceramics. Properties of ferroelectric crystals, and various radiation and irradiation effects on dielectrics are investigated. The volume contains a list of other papers presented at the conference dealing with polarization, losses, and breakdown of dielectrics, which were published in the journal Izvestiya AN SSSR, seriya fizicheskaya, No. 1, 1959. The personalities are mentioned. References accompany each report.

Editorial Board: I.L. Stetsko, and I.D. Filippov. Temperature Dependence of Dielectric Properties of Dielectrics

Platz, I.S. Specific Inductive Capacitance and Dielectric Losses of Some Organic Materials in Strong High-Frequency Electric Fields at Room Temperature (Sobremennyye fiziko-khimiya fiziki, Izd. Sibirskiy fiziko-khimiya i tekhnicheskii nauchnyy issledovaniy institut, Tomsk)

Discussion

Platz, I.S. On the Problem of the Specific Inductive Capacitance of Some Organic Materials in Strong High-Frequency Electric Fields at Room Temperature (Sobremennyye fiziko-khimiya fiziki, Izd. Sibirskiy fiziko-khimiya i tekhnicheskii nauchnyy issledovaniy institut, Tomsk)

Arkhangel'skiy, K.Y. Dielectric Parameters of Double Liquid Systems in the Critical Region (Voprosy fizicheskoy khimii, Institut fizicheskoy khimii, Leningrad)

Yefremov, A.M. Dielectric Dispersion Observed in Some Dielectrics at Audio Range (Voprosy fizicheskoy khimii, Institut fizicheskoy khimii, Leningrad)

Parnas, Ya.M., and I.I. Lebedev. Dielectric Properties of Heterogeneous Dielectrics at Superhigh Frequencies

Discussion

Mikhaylov, G.P., and A.M. Lobanov. Study of ϵ' and ϵ'' in Polymers as a Function of Temperature at Superhigh Frequencies (Institut fizicheskoy khimii, Leningrad)

Brigida, S.M. Dielectric Characteristics (ϵ' and ϵ'') of Impregnated Cable Paper in Relation to the Properties of the Components (Paper and Oil)

Donetskiy nauchnoissledovatel'skiy institut (Moscow Power Engineering Institute)]

Discussion

Kozlovskiy, V.B. Problems of the Dynamic Theory of Thermal Phenomena in Solids

Kozlovskiy, V.B. Dielectric Properties of Solids (Institut fizicheskoy khimii, Leningrad)

Belitskiy, D.A., and V.A. Smirnov. Use of Coaxial Resonators for Measuring Polymer Dielectric Losses and Dielectric Dispersion in Relation to Temperature (Institut fizicheskoy khimii, Leningrad)

Belitskiy, D.A., and V.A. Smirnov. Use of Coaxial Resonators for Measuring Polymer Dielectric Losses and Dielectric Dispersion in Relation to Temperature (Institut fizicheskoy khimii, Leningrad)

Gubilo, A.M., and V.P. Serebryakov. On Charge Stability of Inorganic Electrets (Institut fizicheskoy khimii, Leningrad)

Gubilo, A.M., and V.P. Serebryakov. On Charge Stability of Inorganic Electrets (Institut fizicheskoy khimii, Leningrad)

Gubilo, A.M., and V.P. Serebryakov. On Charge Stability of Inorganic Electrets (Institut fizicheskoy khimii, Leningrad)

NEMAL'TSEVA, T.M., nauchn. sotr.; ALEKSANDROV, L.A., nauchn. sotr.;
KARAMZIN, V.P., nauchn. red.; KAZNINA, L.A., red.;
YERMACHENKOVA, L.M., tekhn. red.

[Organization of atomic energy research in Japan] Organiza-
tsiia nauchnykh issledovaniy po atomnoi energii v Iaponii.
Moskva, Vses.in-t nauchn. i tekhn. informatsii, 1963. 66 p.
(MIRA 16:12)

(Japan—Atomic energy research)

POPOV, A.A.; PUGAYKO, S.V., redaktor; ~~ALEKSANDROV, I.A., redaktor;~~
KRASHAYA, A.K., tekhnicheskiiy redaktor.

[Fuel system of marine diesel engines.] Toplivnaia apparatura
sudovykh dizelei; konstrukttsiia i tekhnicheskaiia ekspluatatsiia.
Moskva, Gos.izd-vo vodnogo transporta, 1954. 226 p.
(Marine engines)(Diesel engines) (MLRA 8:3)

VOZDVIZHENSKIY, B.I.; VASIL'YEV, M.G.; ALEKSANDROV, L.A., redaktor;
KISELEVA, A.A., tekhnicheskiiy redaktor

[Mechanics in boring] Burovaia mekhanika. Izd. 3-e, ispr. i dop.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geologii i okhrane neдр,
1954. 491 p. [Microfilm] (MIRA 8:4)
(Boring)

NEMCHIKOV, Vladimir Ivanovich; KOZHUKHOV, V.P., redaktor; ALEKSANDROW, L.A.,
redaktor; TIKHONOV, Ye.A., tekhnicheskii redaktor.

[Determining tide factors affecting navigation] Opredelenie elementov
prilivo-otlivnykh iavlenii v shturmanskoi praktike. Moskva, Izd-vo
"Morskoi transport", 1956. 80 p. (MLRA 9:5)
(Tides) (Navigation)

BAYEV, Stepan Mikhaylovich; ALEKSANDROV, L.A., red.; LAVRENOVA, N.B.,
tekhn. red.

[Ways to increase labor productivity in maritime transportation during the seven-year plan; lecture given for students of the applied economics of maritime transportation] Puti povysheniia proizvoditel'nosti truda na morskoy transporte v semiletke; lektsiia, pročitannaya dlia izuchaiushchikh kon-kretnuyu ekonomiku morskogo transporta. Moskva, Izd-vo "Morskoy transport," 1959. 80 p. (MIRA 15:9)

(Merchant marine--Labor productivity)

GRIGOR'YEV, Sergey Nikolayevich, prof.; ~~SHCHETININ, N.P., dotsent; Primal~~
uchastiye: YAKOVLEV, K.I., dotsent. YASTRZHEMSKIY, A.S., prof.,
doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki, retsenzent;
VODOLAZHCHEENKO, V.V., dotsent, kand.tekhn.nauk, retsenzent; ~~ALEK-~~
SANDROV, L.A., inzh., red.; VERINA, G.P., tekhn.red.

[Heat engines and compressors] Teplovye dvigateli i kompressory.
Moskva, Gos.transp.zhel-dor.izd-vo, 1959. 363 p. (MIRA 12:10)
(Steam engines) (Gas and oil engines) (Compressors)

LUBOCHKIN, Boris Iosifovich, dotsent, kand.tekhn.nauk; LYSENKO, Vsevolod Konstantinovich, dotsent, kand.tekhn.nauk; FAYVUSHEVICH, V.M., retsenzent; KOLESHNIKOV, O.G., starshiy prepodavatel', retsenzent; ~~ALEKSANDROY, L.A., red.~~ Primal uchastiye KUDINOV, N.N., red.; TIKHONOVA, Ye.A., tekhn.red.

[Marine steam boilers and their operation] Sudovye parovye kotly i ikh ekspluatatsia. Izd-vo "Morskoi transport," 1960. (MIRA 14:4)
590 p.

1. Zamestitel' nachal'nika Leningradskogo Arkticheskogo uchilishcha (for Fayvushevich). 2. Rostovskoye--na--Donu morekhnodnoye uchilishche (for Kolesnikov).
(Boilers, Marine)

ALEKSANDROV, Leonid Afanas'yevich; STRUZHESTRAKH, Ye.I., red.;
DONSKAYA, G.D., tekhn. red.

[Establishment of technical norms in automotive transportation] Tekhnicheskoe normirovanie truda na avtomobil'nom transporte. Moskva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transporta i shosseinykh dorog RSFSR, 1962. 54 p.
(MIRA 15:4)

(Transportation, Automotive---Production standards)

ALEKSANDROW, L. A.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

PER

193-7(1929).—Cement resistant to sulfates and sulfides was prepd. in the usual way from a mixt. of limestone, clay and cinder from pyrites used in the manuf. of sulfuric acid. A cement made from 13 parts of limestone, 1.3 parts clay and 1 part cinder is compared with portland cement. The resp. values are: volatile matter trace, 0.73%; SiO_2 24.22, 24.24%; Fe_2O_3 0.15, 2.96%; Al_2O_3 3.05, 0.04%; CaO 60.18, 65.36%; MgO trace, 0.35%; SO_2 0.35, 0.30%; R_2O 0.05, 0.02%; hydraulic modulus 1.08, 1.97%; silicate modulus 2.63, 2.60%; sp. gr. 3.26, 3.16%; beginning setting 4 hrs. 55 min., 3 hrs. 40 min.; final setting 6 hrs. 20 min., 4 hrs. 20 min. The high content of iron and low Al_2O_3 make this cement very resistant to sodium sulfur compds. A. A. BOBHTLINGER

ALEKSANDROV, L. A.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

YESSHI NOMINY

111111 000 000 111

Methods for calculating raw pastes in the production of portland cement. L. A. ALEKSANDROV. *Stroitelnye Materialy (Building Materials)* No. 1, 8-10 (1930).
A discussion and review of different methods for calcg. pastes of portland cement illus-
trated by tables and diagrams. M. V. KONDOROV

1ST AND 2ND CATEGORIES		PROCESSING AND PROPERTIES INDEX		3RD AND 4TH CATEGORIES	
<p>ca</p> <p>Heavy types of cracking carried out with Surakhanui fuel oil. M. D. TILCHER and L. A. ALEKSANDROV. <i>Repts. Conf. on Cracking Hydrogenation Gaseous</i> 1, 240-56 (1931).—Ordinary cracking of Surakhanui fuel oil in a once-through operation yields about 15% gasoline with little coke, but this yield can be raised to 20% when recycle stock is added. The max gasoline yield attainable is 40%. This yield is accompanied by 14% of gas plus loss and 40% of residue. Cracking with recycling accompanied by coke formation yields gas plus loss 30%, cracked gasoline 50%, residuum 23-25% and coke 7-8%. The cracked residue on being cracked to coke yields gases plus loss 5%, distillate 80-85% and coke 15-10%. By a non-residue cracking of the above fuel oil the following yields can be obtained: gas plus loss 20%, gasoline 54% and coke 20%.</p> <p>A. A. BOKHTELOV</p>		22			
<p>ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>		<p>FROM: 204/17</p> <p>RELIST ONE ONE 111</p>			
<p>FROM: 204/17</p> <p>RELIST ONE ONE 111</p>		<p>FROM: 204/17</p> <p>RELIST ONE ONE 111</p>			

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										MATERIALS INDEX																									
<p>CA</p> <p>22</p> <p>Cracking Grozny paraffin oils to asphalt tar. L. A. Aleksandrov... <i>Nefyanee Khosyastro</i> 25, 40-8(1933).—A fraction b. 200-300° and the steam distillate from the bottoms b. above 300° obtained on cracking Grozny paraffin oils were recycled five times. The yields amounted to 10.7% gas, 61.3% cracked gasoline and 28.8% cracked tar, while the loss was 9.3%. The cracking was carried out always until 0.1% of carboids were formed, the cracking temp. being 450°, pressure 30-40 atm., while the duration of cracking was calcd. so as to avoid an excess of coke. The original cracking stock had a sp. gr. of 0.852, E_w viscosity 1.24 and pour point of —4°, 1.7% (0.782 sp. gr.) b. below 200°, 41.3% (0.828 sp. gr.) b. 200-300° and a residue of 56.5% (sp. gr. 0.803, E_w viscosity 1.51). The results of cracking are tabulated. A. A. R</p>																																																			
<p>ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

1ST AND 2ND COLUMNS										PROCESSES AND PROPERTIES INDEX										100 AND 1TH COLUMNS									
<p>Cracking of the distillates from coking stills. P. Tatarsov, I. A. Aleksandrov and N. V. Popova. <i>Nefteyanov Khimichesk</i> 13:100-2(1933).—Cracking expts. with (1) distillate, (2) gasoline-stripped distillate, (3) fraction b. up to 350° and (4) residue left after distg. the fractions b. below 350° from bottoms obtained in the Winklerkoch cracking unit were carried out in a lab. autoclave at 40 atm. and 425° and for 1 hr. and 40 min. The highest gasoline yields were obtained from the fraction b. below 350°. The performances of the Grozny and the Knowles coking stills are compared, and characteristics of various cuts produced in the cracking are given. A. A. H.</p>																													
<p>ASB-ELA METALLURGICAL LITERATURE CLASSIFICATION</p>																													
FROM 1TH COLUMN										FROM 2TH COLUMN										FROM 3TH COLUMN									
FROM 4TH COLUMN										FROM 5TH COLUMN										FROM 6TH COLUMN									

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																																																																																																																																	
PROCESSES AND PROPERTIES INDEX																																																																																																																																																											
<p>221</p> <p>4</p> <p>A Method for an Accelerated Determination of the Corrosive Properties of Cracked Petrol. I. A. Aleksandrov (<i>Groznenakii Neftyanik</i>, 1934, 4, (5), 62-63; <i>C. Aba.</i>, 1935, 29, 2710).—[In Russian.] A. recommends carrying out the copper-strip test for cracked petrols at 150° C. for 15 minutes, using a flask with a reflux condenser on an oil-bath. These conditions are equivalent to 3 hrs. at 100° C., the loss of light fractions being insignificant.—S. G.</p>																																																																																																																																																											
ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION																																																																																																																																																											
<table border="1"> <tr> <td colspan="13">13000 1111331111</td> <td colspan="13">13000 1111331111</td> <td colspan="13">13000 1111331111</td> <td colspan="13">13000 1111331111</td> </tr> <tr> <td colspan="13">13000 1111331111</td> <td colspan="13">13000 1111331111</td> <td colspan="13">13000 1111331111</td> <td colspan="13">13000 1111331111</td> </tr> </table>																																																				13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111												
13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111																																																																																																																				
13000 1111331111													13000 1111331111													13000 1111331111													13000 1111331111																																																																																																																				

The zinc chloride treatment of cracked gasoline. I. A. Aleksandrov. *Neft* 5, No. 13, p 10(1934). The following recommendations are made: (1) selection of a protective layer for the equipment against corrosion, instead of lining with Cu; (2) selection of a proper carrier resistant to the reagent; (3) selection of a method to ppt. the reagent on the carrier; and (4) the development of reconditioning methods for spent $ZnCl_2$. A. A. Hochlink.

PROCESSING AND PROPERTY INDEX																									
1ST AND 2ND ORDERS																									
<p><i>ca</i></p> <p>Distillates from cracked residues as additional raw material for cracking. L. A. Aleksandrov. <i>Azerbaidzhan'skie Neftyanoe Khozaystvo</i> 1935, No. 5, 87-91. The low yields of gasoline observed in the Winkler-Koch and Jenkins units in Russia are due to a very mild cracking and to the inability of the evaporators and the bubble towers to effect good fractionation. A. proposes to raise the gasoline yield by vacuum distg. the residual oil, followed by subjecting it to a mild cracking, returning it into the evaporator and passing it through the entire cycle in the Winkler-Koch unit. The vacuum still bottoms can be coked or processed in asphalt stills, yielding another 2-3% of gasoline. A. A. Bochtlingk.</p> <p><i>72</i></p>																									
<p>ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION</p>																									
<p>1ST AND 2ND ORDERS</p>																									

PROCESSING AND PROPERTIES																																																																																																							
GROUPS													GROUPS																																																																																										
GROUPS													GROUPS																																																																																										
<p>Selection of the metal for the furnace tubes of new cracking units operated at high pressures. L. A. Aleksandrov and V. P. Sukhanov. <i>Grossenshii Neftyanik</i> No. 5 6, 20-35(1935).—Among the different C and alloyed steels tested in various parts of the cracking equipment, it was found that: (1) Losses (through corrosion) in C steel used in the radiant section exceed those in the lower section of the bubble tower by 10 times. (2) Losses of samples placed in the lower part of the bubble tower in mg./sq. mm./30 days were for C-steel 0.120, Cr-steel 0.031, Cr-Mo-steel 0.028; and for samples placed in the return bends of the cracking coil: C-steel 1.268, Cr-steel 0.020, Cr-Mo-steel 0.011 and Cr-Ni-steel 0.00011 mg./mm./30 days. Details of the investigation are described. Sixteen references. A. A. B.</p>																																																																																																							
<p>ASR-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																																																																							
<table border="1"> <thead> <tr> <th colspan="13">GROUPS</th> <th colspan="13">GROUPS</th> </tr> <tr> <th colspan="13">GROUPS</th> <th colspan="13">GROUPS</th> </tr> </thead> <tbody> <tr> <td colspan="13">GROUPS</td> <td colspan="13">GROUPS</td> </tr> </tbody> </table>																										GROUPS													GROUPS													GROUPS													GROUPS													GROUPS													GROUPS												
GROUPS													GROUPS																																																																																										
GROUPS													GROUPS																																																																																										
GROUPS													GROUPS																																																																																										

1ST AND 2ND CIPHER										3RD AND 4TH CIPHER									
PROCESSES AND PROPERTIES INDEX																			
<p>156</p> <p style="text-align: right;">B-I-2</p> <p>Alkali pretreatment of pressure distillate in [oil]-cracking units. L. A. ALEXANDROV and T. ANOSKOVA (Sov. 1984, 6, No. 1, 8-9).—Addition of about 0.005% of NaOH to pressure distillate from Kala-crude oil eliminated its corrosive action. Ch. Abs. (c)</p>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
SECTION 1										SECTION 2									
SECTION 1										SECTION 2									

22

Investigating the causes of corrosion in cracking installations and methods for combating the former. 1. A. Aleksandrov. *Neft* 6, No. 4, 15-17 (1935). Various steel samples were placed in different portions of the cracking equipment for 150 days. It was found that the tubes and return bends of the radiant section should be constructed of Cr, Cr-Mo or Cr-Ni steel, while the valves of the hot-oil pump should be made of Cr-Ni steel, the latter having also a higher resistance to erosion. Various known methods for the removal of S compounds and naphthenic acids as well as Cl salts are discussed. A. A. Bochtlingk

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										MATERIALS INDEX																									
<p><i>CH</i></p> <p>Distillates from cracked topped crude oils as additional cracking stock. L. A. Aleksandrov. <i>Nefi</i> 6, No. 5, 12-13 (1938).—The yield of cracked gasoline may be brought up to 80% of the stripped crude oil by using the following process: The topped crude oil is preheated in heat exchangers and enters the primary evaporator so as to lower the temp. and to give up the lighter fractions. The mixed vapors pass from the evaporator through the heat exchanger into the bubble tower; the gasoline vapors are discharged and are passed through the gas separator, while the kerosene vapors are sepd. in a small evaporator. The condensate is discharged through the bottom of the tower. The cracked residue from the primary evaporator and the condensate from the heat exchanger enter the secondary evaporator where the lighter fractions are distd. The latter are condensed and passed into the low-pressure cracking coil, where they are subjected to a mild cracking, passing further into the high-pressure coil for a final crack-</p> <p>ing, passing first through the primary evaporator and the tower. The high-pressure coil is fed with the hot condensate from the tower. The kerosene fractions sepd. in the stripper are passed into the reforming coil. The products from all three cracking zones enter into the common evaporator. The separate cracking of the condensate from the tower and of the distillate from the secondary evaporator will permit the operation of the high-pressure coil under conditions similar to those under which it is operated in the usual Winkler-Koch units. A. A. B.</p>																																																			
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>130N 1710312A</p> <p>130N 1710312A</p> <p>130N 1710312A</p>																																																			

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
<div style="position: relative; width: 100%; height: 100%;"> <div style="position: absolute; top: 10%; left: 10%; font-size: 2em; font-family: cursive;">CA</div> <div style="position: absolute; top: 10%; right: 10%; font-size: 3em; font-family: cursive;">22</div> <div style="position: absolute; top: 20%; left: 30%;"> <p>The preparation of ash-free coke in cracking units L. A. Aleksandrov and N. V. Popov. <i>Nefi</i> 6, No. 6, 14-15 (1935).—Coke produced in the soaking tubes of the Winkler Koch and Wickers cracking units is not suitable for electrodes because of the excessive content of Fe and S, while coke from the Jenkins unit is contaminated with lime. A satisfactory coke is obtained in the Winkler Koch evaporator when the unit is operated by the "non-residuum" process, or in special shell stills or Knowles stills. Analytical data and various standards for coke are presented.</p> <p style="text-align: right;">A. A. Bochtlingk</p> </div> </div>																																																			
ASS-5LA METALLURGICAL LITERATURE CLASSIFICATION																																																			
SEARCHED <input type="checkbox"/> INDEXED <input type="checkbox"/> SERIALIZED <input type="checkbox"/> FILED <input type="checkbox"/>																										SEARCHED <input type="checkbox"/> INDEXED <input type="checkbox"/> SERIALIZED <input type="checkbox"/> FILED <input type="checkbox"/>																									
SEARCHED <input type="checkbox"/> INDEXED <input type="checkbox"/> SERIALIZED <input type="checkbox"/> FILED <input type="checkbox"/>																										SEARCHED <input type="checkbox"/> INDEXED <input type="checkbox"/> SERIALIZED <input type="checkbox"/> FILED <input type="checkbox"/>																									



1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										PROCESSES AND PROPERTIES INDEX																									
<p>Methods of combating corrosion of cracking equipment by means of reagents. L. A. Aleksandrov, V. P. Sukhanov and Z. I. Kal'nitskaya. <i>Grazenitsil Neftyanik</i> 6, No. 8, 48-51(1936).—8 compds. are the main elements of corrosion in the cracking process. It is impossible to use chem. reagents in the vapor phase because of the bulkiness of the equipment and the impossibility of avoiding the formation of new active S compds. in the large furnace. The use of solid chem. compds. with the exception of lime, is not recommended because they cannot be penetrated. Lime fed into the evaporator, into the small and the large furnace is the only successful remedy so far established. Since the preheaters and the radiant tubes of the large furnace suffer most through corrosion they must be protected in the first place. Therefore, an amt. of reagent sufficient to protect these parts should be introduced. An excess of reagent causes excessive contamination of the cracked residue. A. A. Boehltink</p>																										<p>20</p>																									
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																										ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																									
SEARCHED																										SEARCHED																									
SERIALIZED																										SERIALIZED																									
INDEXED																										INDEXED																									
FILED																										FILED																									

22

Standardisation of steam distillation of gasoline. I. A. Aleksandrov and I. P. Hoshlinskii. Results are obtained with 6, No. 6, 61 4110.00. Best results are obtained by distg. with steam superheated to 100° at the beginning and 100° at the end of the distn. The steam consumption amounts to 60-70% (by wt.) in distg. 80% of second-grade gasoline. A. A. Hoshlinskii

ASME-51A METALLURGICAL LITERATURE CLASSIFICATION

SECTION	SUBSECTION	DEPARTMENT	CLASSIFICATION
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>   </p> <p> The possibility of increasing the yield of cracked gasoline by using inhibitors. - L. A. Aleksandrov, N. Ryazanovskii and I. Belyuchenko. <i>Grosseniskii Neftyanik</i> 6, No. 11-12, 53-5, (1960). -- Lower yields of cracked gasoline caused by H_2SO_4 treatment can be avoided by substituting to some extent for H_2SO_4 treatment the use of α-naphthol as stabilizers. Calcul. of the economy are given. A. A. Hochtlingk </p>																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
FROM SYMBOL										FROM SYMBOL									
SYMBOLS										SYMBOLS									
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z										A B C D E F G H I J K L M N O P Q R S T U V W X Y Z									

TITLE AND TOPIC		PROCESS AND PROPERTIES INDEX	
<p>Treating pressure distillate in the vapor phase with "Zikreev" clay. L. A. Akhmedov and I. A. Babushkin. <i>Azerbaidzhan'skoe Neftyanoe Khoz.</i> 1936, No. 12, 40-8. Pressure distillate from the Vickers and Winkler-Koch units was treated in the vapor phase during redistn. The gasoline from Baku is less stable than that from Germany mixed-base, topped crude oil; that obtained by cracking Baku gas oil in the Vickers cracking unit, when topped that from the Winkler-Koch cracking unit, is not at-grade oil is used. The quality of the gasoline is not affected by changing the temp. in the filter within 200°C. The capacity of the clay filter per ton of pressure distillate per hr. and per ton of clay has a great effect on the stability of the gasoline without affecting its initial properties. In large-scale units the stability of the gasoline is lowered. The highest yield of pressure distillate per ton of clay should not exceed 0.5-0.5 tons. The corrosiveness of the gasoline is eliminated by introducing small amts. of NH₃ or NaOH into the line after the condenser. The procedure is described in detail and the expl. results are tabulated.</p> <p style="text-align: right;">A. A. Boettlingk</p>		<p>22</p>	

ALEKSANDROV, L. A.

USSR/Petroleum Products
Lubricating Oils
Corrosion

Aug 48

"Use of Corrosion Inhibitors in Lubricating Oils," V.V. Losikov, A.L. Khalif, L.A. Aleksandrov, 5½ pp

"Neft Khoz" No 8

Authors refer to admistures of certain acids to oil, introduced by them in 1944, to protect polished metal parts from corrosion. These admixtures have been successfully used since then, but certain shortcomings resulted. Discusses experimental results of method for obtaining new effective anticorrosion admixtures. They are: MT-2, MT-3, MT-4, with high activity in 0.5% solutions. MT-2, and MT-3 in 5% concentrations do not deteriorate while MT-4 actually improves the de-emulsifying characteristic of oil. Oil stability is influenced slightly. Soviet admixtures surpass US and English admixtures recommended for this purpose. Gives seven tables and illustration of experimental results.

PA 49/49T98

TANDURA, I.P.; SHEPAKIN, N.G.; ALEKSANDROV, L.A., redaktor; NIKITINA, V.N.,
redaktor izdatel'stva; GORDIYENKO, Ye.B., tekhnicheskiiy redaktor

[Experience in setting fuel consumption norms for operations involved
in well drilling] Opyt pooperatsionnogo normirovaniia raskhoda topli-
va pri burenii skvazhin. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry
po geol. i okhrane neдр, 1954. 30 p. (MIRA 10:1)
(Oil well drilling) (Diesel fuels)

ARSHAVSKIY, V.Z.; ALEKSANDROV, L.A.; TSYAN-SHAO-TSZYA [Chiang Shao-chia]

Metal jamming during the process of rolling in T-grooves and
its effect on the amount of deformation of the main elements
of a rail section. Sbor. trud. UNIIM no.11:138-149 '65.
(MIRA 18:11)

ALEKSANDROV, L. I.

USSR/Physics - Steel

21 Oct 50

"Influence of Concentration Stresses Upon the
Speed of Lateral Growth of the Pearlite Grain,"
L. I. Aleksandrov, B. Ya. Lyubov, Inst of Metal
Studies and Phys of Metals, Cen Sci Res Inst of
Ferrous Metallurgy

"Dok Ak Nauk" Vol LXXIV, No 6, pp 1081-1084

Math treatment of diffusion eq to clarify compara-
tively great speeds of decay of solid soln for temp
where speed of normal diffusion is small. Sub-
mitted 22 Jul 50 by I. P. Bardin.

172T91

ALEKSANDROV, L. N.

USSR/Metals - Steel, Structural Analysis Apr 52

"The Field of Stresses Originating During the Decomposition of a Solid Solution Near the Spherical Nucleus of the New Phase," L. N. Aleksandrov, B. Ya. Lyubov, Inst of Metal Studies and Phys, TsNIICHM (Central Sci Res Inst of Ferrous Metallurgy)

"Dok Ak Nauk SSSR" Vol LXXXIII, No 6, pp 833-835

Analyzes effect of stresses, caused by decomposition of solid soln, on growth rate of new-phase nucleus and applies results obtained to calculation of stresses induced in supercooled austenite ($T = 993^{\circ} \text{K}$) of hypoeutectoid concn around sepg ferrite grain. Submitted by Acad I. P. Bardin 29 Feb 52.

223T48

Aleksandrov, L. N.

The field of stress arising near the pearlite nodule during the transformation of austenite. L. N. Aleksandrov (Petrozavodsk, Karelo-Finland SSR). *Izvestiya Akad. Nauk SSSR, 1953, 337-41* (Russian summary, 343); cf. C.A. 48, 6553f. Theoretical-math. The field of stress arising during the growth of a pearlite nodule in eutectoid steel during the isothermal (700°) transformation of austenite was developed (cf. Zakharova and Lashko, C.A. 41, 2389g). A zone of plastic deformation spreading in all directions near the advancing pearlite front is indicated. L. Benconitz.

ALEKSANDROV, L.N.

Metallurgical Abst.
Vol. 21 May 1954
Structure

B.T.R. Vol. 3, No. 3

Mar. 54.

Journal of the Iron & Steel Inst.
Feb. 54

Nuclear Science Abstracts V-8, Jan 15, 1954

(2)
*The Effect of Plastic Deformation Arising During Decomposition of a Solid Solution on the Rate of Growth of a Nucleus of the New Phase. L. N. Aleksandrov and B. Ya. Lyubov (Doklady Akad. Nauk S.S.S.R., 1953, 91, (3), 519-522). [In Russian]. Math. Equations are developed for the rate of growth of spherical nuclei from supersaturated solid soln. which take into consideration the effect of plastic deformation, and they are applied to isothermal growth of ferrite from austenite. The chief conclusion reached is that the stresses set up by the transformation cause the process to be autocatalytic. 6 ref. (Translated by the U.S. National Science Foundation (NSF-tr-95)).—D. M. P.

ALEKSANDROV, L. N.

Dissertation: "Stresses Arising from the Decomposition of Solid Solutions and Their Influences on the Growth Rate of a Nucleus of a New Phase." Cand Phys-Math Sci, Dnepropetrovsk State U, Yoshkarola, 1954. Referativnyy Zhurnal--Khimiya, Moscow, No 13, Jul 54.

SG: SUM No. 356, 25 Jan 1955

Aleksandrov, L. I.

123 - 1 - 104

AUTHORS: Aleksandrov, L. I. Artemenko, N. P., Fel'dman, L.M.

TITLE: Influence of Structural Joints on Strength of Bolts
(O vliyanii konstruktsii soyedineniya na prochnost' boltov).

PERIODICAL: Tr. Khar'kovsk. aviats. in-ta, 1955, vyp.16,
169-174.(USSR)

ABSTRACT: Witnessing the work of screws which brace the flange and drum in the $\text{H}\Pi\text{P}$ -200 plunger pump at the "Gidroprivod" plant in Khar'kov has proved that it is possible to reduce significantly the tension in screws by increasing the rigidity in the joining parts. The calculation of stresses acting on the flange and screws is given. The well known chart of stresses and deformations in screwed joints was established. The stresses and the safety factor for

Card/2

123 - 1 - 104

screws made of carbon and Cr-Ni[chromium and nickel] steels were computed. To increase the rigidity of jammed parts the gap between butts of the flange and drum was eliminated, consequently the screws draw tight the flange to the drum. Previously the center belt of the flange was resting on five rings inserted inside the drum. The cross section of the pump, four design, sketches and one chart are given.

M.B.D.

Ref. Zh., Mashinostroyeniye Nr.1, 1957, Item 104.

ASSOCIATION: Aeronautical Institute in Khar'kov (Khar'kovsk. aviats. in-t)

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

ALEKSANDROV, L.I.; ARTEMENKO, N.P.; KOSTYUK, D.I.; GERONIMUS, Ya.L.,
professory; otvetstvennyy redaktor; OHERNYSHENKO, Ya.T., tekhnicheskiy redaktor

[Cylindrical gearing; theory, calculation and design] TSilindricheskie zubchatye kolea; teoriia, raschet i proektirovanie. Khar'kov, Izd-vo Khar'kovskogo ordena trudovogo krasnogo znameni gos. univ. im. A.M.Gor'kogo. 1956. 317 p. (MIRA 9:9)
(Gearing)

ALEKSANDROV, L. N.

AUTHOR: Aleksandrov, L. N.

126-2-26/35

TITLE: Determination of the activation energies of processes of reconstruction during phase transformations in solid solutions. (Opredeleniye energii aktivatsii protsessov perestroyki pri fazovykh prevrashcheniyakh v tverdykh rastvorakh).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2, pp. 370-371 (USSR)

ABSTRACT: Calculation of the kinetic curve of phase transformation in a solid solution requires knowledge of the activation energy U of the process of reconstruction of its crystal lattice. Experimental determination of this value requires knowledge of the complete transformation diagram of the solid solution. Approximate determination of U can be effected from the speed of germination $n(T)$ of the centres of the new phase or from the speed of growth of the centre of the new phase $v(T, t)$. The conceptions of Lyubov, B. Ya., (Ref.3) on the speed of growth of the nucleus of a new phase during isothermal decomposition of a solid solution permits evaluating the activation energy if the speed of growth $v(T, t)$ is known, T being the

Card 1/2 transformation temperature and t the time of annealing

126-2-26/35

Determination of the activation energies of processes of reconstruction during phase transformations in solid solutions.

of the grain. The growth of the centre of the new phase during the first stage is limited by the speed of reconstruction of the lattice, since removal of the dissolved component of the solid solution by its diffusion into the initial phase begins to limit the speed of growth of the grain only after the grain has grown to relatively large dimensions. In the general case the speed of growth can be expressed by Eq.(2), p.370, and the results obtained by means of this equation are in good agreement with results obtained by Kogan, L.I., and Entin, R.I., (Refs. 2 and 8) and Plotnikov N.P. (Ref.9). The here described method also permits evaluating the activation energy of the diffusion from the speed of growth of the centre of a new phase in the range $t > \tau$, which determines the diffusion of the dissolved component, whereby τ is the time required for growing of the grain to its

Card 2/2 limit dimensions.

There are 9 references, 8 of which are Slavic.

SUBMITTED: March 18, 1957.

ASSOCIATION: Mariyskiy State Pedagogical Institute. (Mariyskiy Gosudarstvennyy Pedagogicheskiy Institut), [located in Yoshkar-Ola, Mariyskaya ASSR]

AVAILABLE: Library of Congress.

ALEKSANDRON, L.I.

PHASE I BOOK EXPLOITATION

SOV/5055

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Gidrodinamicheskaya teoriya smazki. Opory skol'zheniya. Smazka i smazochnyye materialy (Hydrodynamic Theory of Lubrication. Slip Bearings. Lubrication and Lubricant Materials) Moscow, Izd-vo AN SSSR. 422 p. Errata slip inserted. 3,800 copies printed. (Series: Its: Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Eds. for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings": Ye. M. Gut'yar, Professor, Doctor of Technical Sciences, and A. K. D'yachkov, Professor, Doctor of Technical Sciences; Resp. Ed. for the Section, "Lubrication and Lubricant Materials": G. V. Vinogradov, Professor, Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Gus'kova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

Card ~~1/17~~

Hydrodynamic Theory (Cont.)

SOV/5055

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairmen: Ye. M. Gut'yar, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairmen: B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragel'skiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krushchov, Doctor of Technical Sciences; and 5) Friction and Antifriction Materials (Chairmen: I. V. Kragel'skiy, Doctor of Technical Sciences, and M. M. Krushchov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy,

Card 2/17

Hydrodynamic Theory (Cont.)

SOV/5055

Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes of which the present is the third. This volume contains articles concerned with the hydrodynamic theory of lubrication, sliding bearings, and lubrication materials. Among the topics covered are: modern developments in the hydrodynamic theory of lubrication, experimental methods for investigating the performance of bearings under various conditions, the mechanics of lubrication under various conditions, the design of bearings for different applications, the theory and practical applications of lubricating materials, including viscous-plastic lubricants, calculation methods used in the design of bearings for turbo-electric generators and other heavy machinery, experimental data on the lubricating characteristics of many different lubricant materials, the effects of additives, operating and environmental conditions, corrosion, and accelerated wear testing. Many personalities are mentioned in the text. References accompany most of the articles.

~~Card 3/17~~

Hydrodynamic Theory (Cont.)

SOV/5055

TABLE OF CONTENTS:

[I.] HYDRODYNAMIC THEORY OF LUBRICATION. SLIDING BEARINGS

Gut'yar, Ye. M. Modern Trends in the Development of the
Hydrodynamic Theory of Lubrication 3

Aleksandrov, L. I., N. P. Artemenko, L. M. Fel'dman,
and Yu. V. Yakovlev. Setup for Testing Supporting
Bearings of Powerful Turbines 9

Bulovskiy, N. N. Investigation of Friction Processes in
Heavily Loaded Sliding Bearings of Rolling Mills 17

Vypov, G. P. On the Unsteady Motion of a Viscous Incom-
pressible Fluid Between Closely Located Moving Surfaces 25

Golubev, A. I. On the Motion of a Viscous Incompressible
Fluid in Short Bearing Gaps in the Laminar and Turbulent
Flow Regimes 30

~~Card 4/17~~

BEGMAT, I., prepodavatel'; ALEKSANDROV, L.I., starshiy nauchnyy sotrudnik;
REBROV, P.I., kand. veter. nauk

Use of tissue preparations. Veterinariia 37 no.1:8-10 Ja '60.
(MIRA 16:6)

1. Priazovskiy sel'skokhozyaystvennyy tekhnikum (for Begmat).
 2. Novosibirskaya nauchno-issledovatel'skaya veterinarnaya stantsiya (for Aleksandrov).
 3. Nar'yan-Mar'skaya sel'skokhozyaystvennaya opytnaya stantsiya (for Rebrov).
- (Tissue extracts) (Veterinary medicine)

ALEKSANDROV, Lev Iosifovich; ARTEMENKO, Nikolay Pavlovich; FEL'DMAN, Lev Moiseyevich; KOSTYUK, D.I., dotsent, otv. red.; KURILOVA, T.M., red.; TROFIMENKO, A.S., tekhn. red.

[Machine parts; laboratory work] Detali mashin; laboratornye raboty. Khar'kov, Izd-vo Khar'kovskogo gos. univ. im. A.M.Gor'kogo, 1961.
152 p. (MIRA 14:10)

(Mechanical engineering—Study and teaching)

82973

6.4400

S/142/60/003/002/013/022
E192/E382

AUTHOR: Aleksandrov, L.N.

TITLE: Conditions Sufficient for the Parametric Stability
of an Automatic Gain Control System

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, 1960, Vol. 3, No. 2, pp.270 - 274

TEXT: The system considered is shown in Fig. 1. The filter in the automatic gain control network is in the form of a two-stage RC filter (Fig. 2), whose two stages are separated by a buffer amplifier having a gain of unity. The differential equation of the system is:

$$T_1 T_2 \frac{d^2 E_p}{dt^2} + (T_1 + T_2) \frac{dE_p}{dt} + E_p = K_1 U_{BX}(t) K(E_p) \quad (1)$$

When the input signal is not modulated, Eq. (1) has no unstable solutions. However, if the input signal is amplitude-modulated by a function $\varphi(t)$, the automatic control system can become unstable due to the parametric character of the feedback. In this case, it is necessary to carry out a special investigation

Card 1/3

82973

S/142/60/003/002/013/022

E192/E382

Conditions Sufficient for the Parametric Stability of an Automatic Gain Control System

of Eq. (1). This can be done by employing the second method of Lyapunov (Ref. 4). It is assumed that E_p is an arbitrary solution of Eq. (1), corresponding to the initial conditions, while $\bar{E}_p = E_p + x$ is also a solution of Eq. (1) but for different initial conditions. The difference between the initial conditions for the two solutions is referred to as the initial perturbation. By substituting the solution \bar{E}_p into Eq. (1), it is possible to obtain Eq. (2). The function K in this equation can be expanded into the Taylor series, as shown by Eq. (3). By considering only the first two terms of this series and by introducing a new variable τ (defined on p.271), Eq. (2) can be written as Eq. (4), where m is the modulation index for the input signal. Eq. (4) can be written as a system of two differential equations; these are in the form of Eqs. (5), where $\psi(\tau)$ is defined by Eq. (6). Investigation of Eqs. (5) by means of the Lyapunov method shows that the stability criterion for the system is expressed by Eqs. (17) and (18). The investigation of a system is first carried out by Card 2/3

82973
S/142/60/003/002/013/022
E192/E382

Conditions Sufficient for the Parametric Stability of an Automatic Gain Control System

verifying whether it satisfies Eq. (18). If this is the case, the system is stable for any m . Alternatively, by employing Eq. (17), it is possible to determine the values of m which guarantee the stability of the system. There are 2 figures and 6 Soviet references, one of which is translated from English.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Moskovskogo ordena Lenina aviatsionnogo instituta im. Sergo Ordzhonikidze (Chair of Radio-Receiving Equipment of the Order of Lenin Moscow Aviation Institute im. Sergo Ordzhonikidze)

SUBMITTED: July 10, 1959

Card 3/3

A L E K S A N D R O V, L. N.

AID P - 2617

Subject : USSR/Meteorology

Card 1/1 Pub. 71-a - 20/26

Author : Aleksandrov, L. N.

Title : ~~V. I. Chebotarev and A. R. Skue~~ Gidrometricheskiye sooruzheniya (Water gaging installations) Gidro-meteoizdat, 1954 (Book review)

Periodical : Met 1 gidr, 4, 56-57, J1/Ag 1955

Abstract : The book reviewed in this article is devoted to measuring flow conditions on small streams. This book is an approved textbook for hydrometeorological technicums, and deals with the design, construction and operation of water gaging installations. Some criticism is voiced on the carelessness in editing. However, the book is considered to have a great value for students.

Institution : None

Submitted : No date

ALEKSANDROV, L. N. and LYUBOV, B. Ya.

"Effect of Concentration Stresses on the Rate of Lateral Growth of Pearlite Grains," Dokl. AN SSSR 74, No.6, pp. 1081-84, 1950

Evaluation B-78945

ALEKSANDROV, L.N.; LYUBOV, B.Ya., kand. fiz.-mat. nauk.

Effect of concentration stresses on the rate of pearlite grain
edge growth. Probl. metalloved. i fiz. met. no.2:256-270 '51.
(Steel—Metallography) (Strains and stresses) (MIRA 11:4)

ALEKSANDROV, L.N.

Determining the activation energy of rearrangement processes
in solid solution phase transformations. Fiz. met. i metalloved
5 no.2:370-371 '57. (MIRA 11:3)

1. Mariyskiy gosudarstvennyy pedagogicheskiy institut.
— (Solutions, Solid) (Phase rule and equilibrium)

ALEKSANDROV, L.N.

137-58-2-3927

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 236 (USSR)

AUTHOR: Aleksandrov, L.N.

TITLE: Stresses Arising During the Decomposition of Solid Solutions and Their Effect on the Rate of Growth of Nuclei of a New Phase (Napryazheniya, voznikayushchiye pri raspade tverdykh rastvorov, i ikh vliyaniye na skorost' rosta zarodyshey novoy fazy)

PERIODICAL: Uch. zap. Mariysk. gos. ped. in-t, 1957, Vol 12, pp 163-168

ABSTRACT: An examination of the structure and phase transformations of Fe-C alloys is made; a theoretical quantitative analysis of the effect of stresses arising on the decomposition of solid solutions upon the rate of growth of nuclei of a new phase is advanced, and stresses in the vicinity of the growing nuclei are calculated. To make this solution possible, coordinates were selected that move with the surface of growth of the new phase (pearlite). It is assumed that the rate of growth of the nucleus is limited by the introduction of C. Allowance for the effect of concentration stresses on diffusion was made

Card 1/2

137-58-2-3927

Stresses Arising During the (cont.)

in accordance with the equation for diffusion in a field of stress, determined with the aid of an apparatus for the theory of temperature stresses. Determination of the stress field and the concentration field by solution of the diffusion equation, under appropriate conditions near the growing nucleus of the new phase, was made for a case of precipitation of spherical grains (ferrite) and a complex binary precipitate (pearlite). The character of the region of complex stress near the front of crystallization of the pearlite was established. The order of magnitude of the gradients of the component of the tensor of the stresses ahead of the pearlite front was determined (10^5 - 10^7 kg/mm².m). It is shown that as a result of the presence of a stressed state the process takes on an autocatalytic character. The results obtained are in good agreement with experiment.

V. R.

1. Carbon-iron alloys--Phase transitions--Effects of stresses

Card 2/2

SOV/137-58-9-19818

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 244 (USSR)

AUTHORS: Aleksandrov, L.N., Lyubov, B.Ya.

TITLE: A Theoretical Analysis of the Effect of Alloying on the Kinetics of Isothermal Decomposition of Austenite (Teoreticheskiy analiz vliyaniya legirovaniya na kinetiku izotermicheskogo raspada austenita)

PERIODICAL: Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii, 1958, Vol 5, pp 317-326

ABSTRACT: The rate of growth of nuclei of a new phase was determined as a function of time. The rate of nucleation was taken to be constant at a given temperature. The rate of growth is a function of the mechanism of phase transition within a given range of dimensions of the growing nucleus of a new phase. By employing the equation for the volume of a new phase during phase transformations (T) and by utilizing results previously obtained regarding the growth of a spherical nucleus [B.Ya. Lyubov, DAN (Dokl. AN), 1950, Vol 62, p 273], it is shown that, depending primarily on the mechanism of the T, the alloying either expands or reduces the range of dimensions of the nucleus,

Card 1/2

SOV/137-58-9-19818

A Theoretical Analysis of the Effect of Alloying (cont.)

providing the diffusion of the alloying element itself does not retard the process. Critical dimensions were established for a nucleus, determined primarily by the diffusion process. The time required for completion of T's with various mechanisms was expressed analytically as a function of temperature. A formula for determination of the nucleation rate of a new phase is given. In the case of nonalloyed austenite, the mechanism of lattice modification gains in importance as the temperature is reduced; at temperatures below 600°C this mechanism becomes a determining factor. At temperatures above 650° the mechanism of diffusion of C is of predominant importance. The process of diffusion of C determines the rate of T in non-alloyed steels and in steels containing alloying elements which noticeably inhibit the diffusion process (Cr, Mo). In the case of steels alloyed with elements that have a small tendency to retard the diffusion of C (Mn, Ni, W), or which tend to accelerate it, the process of modification of the Fe lattice becomes a decisive factor.

V.R.

1. Austenite--Transformations 2. Alloys--Metallurgical effects 3. Metallurgy
--Theory

Card 2/2