LANKOVITS, A.V.

Determination of the size of the fetus in labor and some factors in its development. Vop. okh. mat. i det. 6 no.10:44-49 O '61. (MIRA 14:11)

1. Iz kafedry akusherstva i ginekologii (zav. - chlen-korrespondent AMN SSSR prof. L.S.Persianinov) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.

(FETUS)

LANKOVITS, A.V.

Some terms used in obstetrics. Vop. okh. mat. i det. 7 no.1:70-74 Ja '62. (MIRA 15:3)

1. Iz kafedry akusherstva i ginekologii lechebnogo fakul'teta (zav. - chlen-korrespondent AMN SSSR prof. L.S. Persianinov) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.
(OBSTETRICS--TERMINOLOGY)

MATSPANOVA, O.D., kand. med. nauk; LANKOVITS, A.V., prof.; KRASOVSKIY, Ye.B., doktor med. nauk, red.; LIBENZON, L.L., kand. med.nauk, red.

[Authors abstracts of scientific papers completed in 1961] Avtoreferaty nauchnykh rabot, vypolnennykh v 1961 g. Red. koll.: O.D.Matspanova i dr. Moskva, 1962. 118 p. (MIRA 16:11)

1. Moscow. (Province) Oblastnoy nauchno-issledovatel'skiy institut akusherstva i ginekologii. 2. Direktor Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta akusherstva i ginekologii (for Matspanova). 3. Zamestitel' direktora po nauchnoy chasti Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta akusherstva i ginekologii (for Lankovits).
(OBSTETRICS) (GYNECOLOGY) (PEDIATRICS)

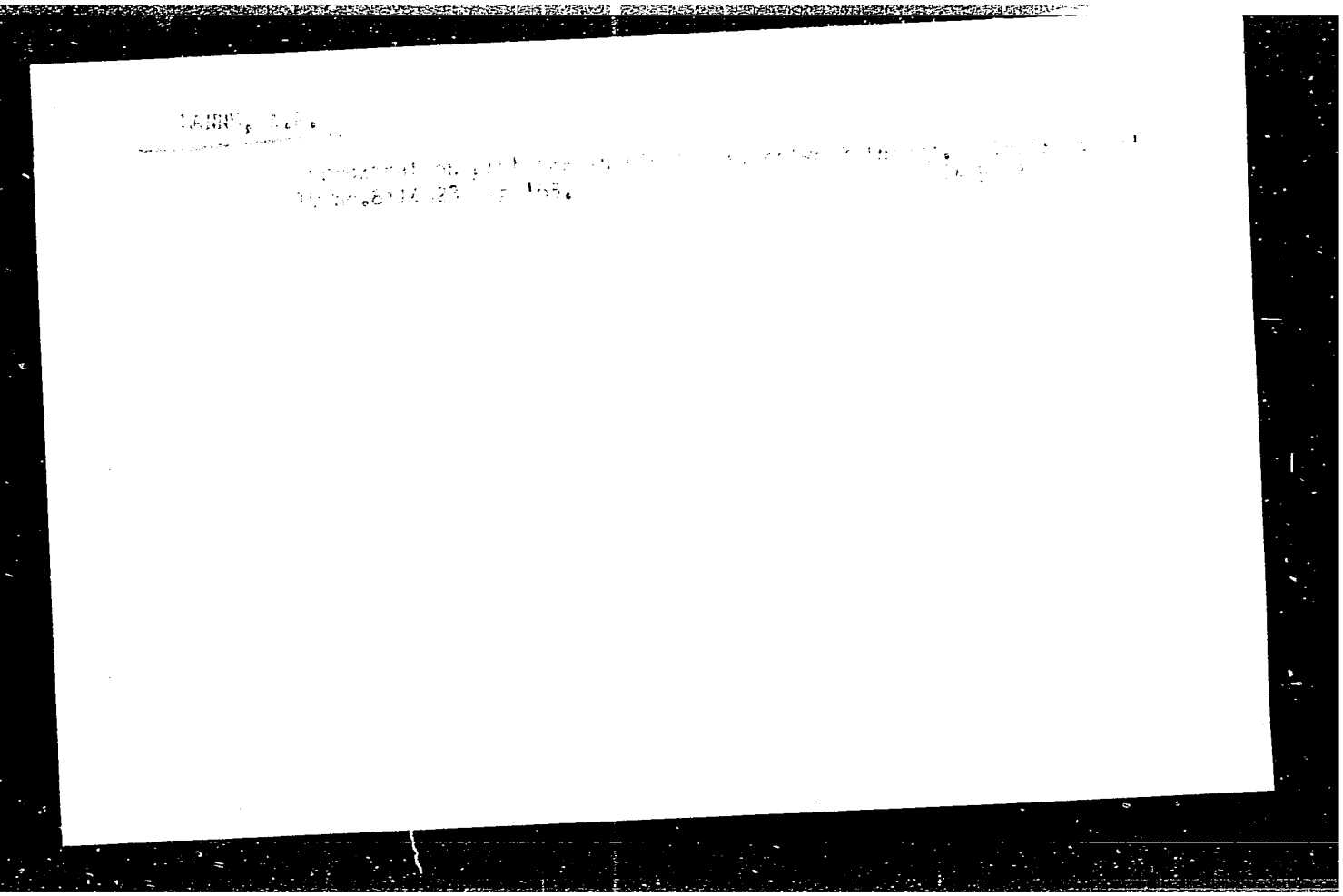
LANKOVITS, A.V.

Cesarean sections in Moscow Province in 1961. Vop. okh. mat. i det. 8 no.7:57-63 Jl '63. (MIRA 17:2)

1. Iz Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta akusherstva i ginekologii (direktor - kand. med. nauk O.D. Matspanova, nauchnyy rukovoditel' - prof. A.V. Lankovits).

LANNE, A.A.

Tabulation of transient processes in electric networks synthesized on the basis of Bessel's polynomials. Elektrosviaz' 17 no.9: 43-54 S '63. (MIRA 16:10)



ARZHANNIKOV, Ye.P.; LARN[illegible], A.A.

Optimal characteristics of low-frequency filters. Radiotekhnika 20 no.10:21-30 O '65. (MIRA 18:11)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi.

LANNE, A.A.; SIKAREV, A.A.

Some results of the study of L.I. Mandl'shtam's problem.
Elektrosviaz' 19 no. 12:59-66 D '65 (MIRA 19:1)

L 47212-66

ACC NR: AR6019063 SOURCE CODE: UR/0274/66/000/001/A008/A008

AUTHOR: Lanne, A. A.; Okunev, Yu. B.; Sikarev, A. A.

REF SOURCE: Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR, vyp. 24, 1965, 49-58

TITLE: Statistical evaluation of one class of phase-keyed signals

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 1A46

TOPIC TAGS: signal analysis, phase shift

TRANSLATION: A group signal in a phase-keyed channel can be represented by the following equation:

$$z(t)=\sum_{k=k_1}^{k_2} A_k \cos(k\omega_0 t+\varphi_k+\Delta\varphi_k),$$

where $\omega_0=\frac{2\pi}{T}$; $k_2-k_1+1=n$ is the number of the phase components, T is the pulse width, ϕ_k is the initial phase of the k-th component, and $\Delta\phi_k$ is the random discrete phase shift of the k-th signal component. In the case of determined signals, the peak factor is expressed by

$$K<\frac{S_0}{\sqrt{\frac{1}{2}\sum_{k=k_1}^{k_2} A_k^2}},$$

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L 47212-66

ACC NR: AR6019063

where $S_0 = \min_{\varphi_k} \max_{0<t<T} \left| \sum_{k=k_1}^{k_2} A_k \cos(k\omega_0 t + \varphi_k) \right|$

and $S_0 < C \sqrt{\ln n} \sqrt{\sum_{k=k_1}^{k_2} A_k^2};$

C is an absolute constant. It was established that for a group phase-keyed signal with a number of components $n>6$, the selection of the original phases do not affect the statistical properties of the signal. Evaluation of statistical signal characteristics are also presented and examples illustrating the application of the results are given. 5 figures, 1 table, 1 reference. N. G.

SUB CODE: 17/ ~~SUBM DATE: none~~

Card 2/2 fv

KADEN, N.N.; LANOVAYA, V.P.

Morphology of the gynoecium and the fruit of geranium. Nauch. dokl. vys. shkoly; biol. nauki no.4:104-109 '63. (MIRA 16:11)

1. Rekomendovana kafedroy vysshikh rasteniy Moskovskogo gosudarstvennogo universiteta im. Lomonosova.

MUSHKALO, L.K.; SHEYKO, D.I.; LANOVAYA, Ye.I.

Condensat' n of o-aminoselenophenol with unsaturated ketones. Report No 2. Ukr.khim.zhur. 30 no.5:502-503 '64.
(MIRA 18:4)

1. Kiyevskiy gosudarstvennyy universitet.

MUSHKALO, L.K.; LANOVAYA, Z.I.

Condensation of unsaturated carbonyl compounds and β-halo ketones with β-aminoethylmercaptans. Ukr.khim.zhur. 21 no.5:631-635 '55. (MLRA 9:3)

1. Kiyevskiy gosudarstvennyy universitet imeni T.G. Shevchenko, Kafedra organicheskoy khimii.

(Carbonyl compounds) (Ketones) (Thiols)

LANOVOY, I. D.: Master Med Sci (diss) -- "The use of the Soviet antibiotic albomycin in treating endometritis (Experimental-clinical investigation)". Kiev, 1956. 20 pp (Kiev Order of Labor Red Banner Med Inst im Acad A. A. Bogomolets), 200 copies (KL, No 7, 1959, 129)

LANOVOY, I.D.

Using albomycin in clinical obstetrics and gynecology [with summary in English]. Akush. i gin. 33 no.6:37-40 N-D '57. (MIRA 11:3)

1. Iz kafedry akusherstva i ginekologii (zav.-prof. A.V.Anisimov) i kafedry farmakologii (zav.-prof. F.V.Kovshar') Stanislavskogo meditsinskogo instituta.

(PUERPERIUM, compl.
endometritis, ther., albomycin)
(ANTIBIOTICS, ther. use
albomycin in puerperal & postabortive endometritis)
(ABORTION, compl.
endometritis, ther., albomycin)
(ENDOMETRITIS, ther. same)

IVANOVA, T.I.; LANOVCY, I.D.; ASMOLOVSKIY, G.V.; FEDOROV, R.V.

Therapeutic effect of monomycin in experimental endometritis.
Antibiotiki 9 no.5:462-463 My '64. (MIRA 18:2)

1. Iva o-Frankovskiy meditsinskiy institut.

IVANOVA, T.I., prof.; VIKTOROVSKAYA, Ye.N., dotsent; LANOVOY, I.D.; KRIVOSHEYEVA, M.V.

Use of albomycin in treating women with inflammatory diseases of the genitalia. Sov.med. no.3:121-122 '62. (MIRA 15:5)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. A.V. Anisimov) i kafedry mikrobiologii (zav. - prof. T.I. Ivanova) Stanislavskogo meditsinskogo instituta (dir. - dotsent G.A. Babenko).

(GENERATIVE ORGANS, FEMALE—DISEASES)
(ALBOMYCIN)

S/190/60/002/009/012/019
B004/B060

AUTHORS: Lanovskaya, L. M., Gantmakher, A. R., Medvedev, S. S.

TITLE: Polymerization of Ethylene by Means of the Combined Catalyst α-$TiCl_3$ - AlR_3 in the Presence of Various Monomers. I. The Effect of Various Monomers on the Polymerization of Ethylene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9, pp. 1391-1397

TEXT: The authors wanted to study the interaction of various unsaturated compounds with the combined catalyst, and its effect on the polymerization of ethylene under conditions at which these compounds still polymerize at a negligibly low rate. The authors describe the purification of the reagents, the reaction vessel (Fig. 2) with magnetic stirrer and

thermostat, and a device (Fig. 1) which served for introducing the octane solvent and the $(i\text{-}C_4H_9)_3Al$ into the reaction vessel. The measurements were made at a constant ethylene pressure of 200 torr by the method developed by A. I. Gel'bshteyn and M. I. Temkin (Ref. 8). The experimental procedure was worked out by Gritsenko and Lanovskaya. α-methyl styrene, isoprene, butadiene, and isobutylene were used as admixtures. In the first series of experiments (Table 1, Fig. 3), the monomer was filled into the reaction vessel before introducing the ethylene. In the second series of experiments (Tables 1,2, Figs. 4-6), the ethylene was first polymerized during two hours, the monomer was then added, and polymerization was carried on for five more hours. In the experiments specified in Table 1, the authors used $TiCl_3$ which was obtained from $TiCl_4$ by reduction by means of antimony. Table 2 specifies

Polymerization of Ethylene by Means of the Combined Catalyst α-$TiCl_3$ - AlR_3 in the Presence of Various Monomers. I. The Effect of Various Monomers on the Polymerization of Ethylene

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the experiments in which $TiCl_3$ was produced by the reduction of $TiCl_4$ by means of titanium metal. Experiments revealed that the polymerization rate of ethylene is retarded in the presence of one of the monomer compounds mentioned. The molecular weight of the resulting polyethylene is, however, not influenced thereby. As to their reaction-retarding effect, the various monomer compounds are mentioned in the order butadiene, isoprene > styrene > isobutylene > α-methyl styrene. Diene hydrocarbons, thus, have the greatest retarding effect. The addition of monomers prior to or after the beginning of polymerization bears no influence on this effect. The authors mention a discussion by A. R. Gantmakher on a lecture by A. A. Korotkov at the International Symposium in Prague, 1957. There are 6 figures, 2 tables, and 8 references: 2 Soviet, 4 US, and 2 German.

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Polymerization of Ethylene by Means of the Combined Catalyst α-$TiCl_3$ - AlR_3 in the Presence of Various Monomers. I. The Effect of Various Monomers on the Polymerization of Ethylene

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B004/B060

V

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: April 11, 1960

Card 4/4

S/190/60/002/011/010/027
B004/B060

15.8101

AUTHORS: Lanovskaya, L. M., Gantmakher, A. R., Medvedev, S. S.

TITLE: Polymerization of Ethylene by Means of Combined α-$TiCl_3$-AlR_3 Catalyst in the Presence of Various Monomers. II. Some Problems Concerning the Polymerization Mechanism in the Presence of Combined Catalysts

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11, pp. 1655 - 1658

TEXT: This is a discussion of the results obtained by the authors in Ref. 1 concerning the effect of various monomers on the polymerization of ethylene by α-$TiCl_3$-AlR_3 catalysts. The authors' experiments revealed that additions of isobutylene, styrene, isoprene, or butadiene reduce the polymerization rate of ethylene, complexes of these monomers being formed on the catalyst surface. The ability to form complexes is reduced in the series butadiene > isoprene > styrene > isobutylene > α-methyl styrene. This succession is analogous to the series obtained by other researchers for

Polymerization of Ethylene by Means of Combined α-$TiCl_3$-AlR_3 Catalyst in the Presence of Various Monomers. II. Some Problems Concerning the Polymerization Mechanism in the Presence of Combined Catalysts

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compounds of platinum, silver, and other metals. The authors base on their experimental results to conclude that the monomers react with the titanium component of the catalyst. A reaction with the aluminum component, which is a Lewis acid, would yield another series of activities. The following reaction scheme is given:

$$TiCl_3 \cdot Al\begin{matrix}R\\R\\M_nR\end{matrix} + M \underset{k_2}{\overset{k_1}{\rightleftharpoons}} M \cdot TiCl_3 \cdot Al\begin{matrix}R\\R\\M_nR\end{matrix} \quad (1) \qquad M \cdot TiCl_3 \cdot Al\begin{matrix}R\\R\\M_nR\end{matrix} \xrightarrow{k_3} TiCl_3 \cdot Al\begin{matrix}R\\R\\M_{n+1}R\end{matrix} \quad (2).$$

Polymerization by combined catalysts thus does not have a typical anionic course, but is a more complicated process. This has some resemblance with polymerization in the presence of lithium alkyls, but differs from it by specific properties which depend on the structure of the combined catalyst. The authors mention A. A. Babushkin, L. A. Gribov, and A. D. Gel'man. There are 14 references: 5 Soviet, 4 US, 3 British, 1 French, and 1 German.

Card 2/3

85414

Polymerization of Ethylene by Means of Combined α-$TiCl_3$-AlR_3 Catalyst in the Presence of Various Monomers. II. Some Problems Concerning the Polymerization Mechanism in the Presence of Combined Catalysts

S/190/60/002/011/010/027
B004/B060

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: May 5, 1960

Card 3/3

LANOVSKAYA, L.M.; MAKLETSOVA, N.V. [deceased]; GANTMAKHER, A.R.; MEDVEDEV, S.S.

Polymerization of ethylene in the presence of various composite catalysts based on $TiCl_3$. Vysokom. soed. 7 no.4:741-746 Ap '65.

Nature of the active centers in the processes of polymerization in the presence of composite catalysts based on $TiCl_3$. Ibid.: 747-750

(MIRA 18:6)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

ARSEYEV, Aleksandr Vasil'yevich; LANOVSKAYA, M.R., red.izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Burning of natural gas] Szhiganie prirodnogo gaza. Moskva, Metallurgizdat, 1963. 407 p. (MIRA 17:2)

SEMENENKO, N.A., doktor tekhn.nauk, prof., nauchn. red.; LANOVSKAYA, M.R., red.; GINZBURG, R.Ya., tekhn. red.

[Power engineering processes in cyclone smelting] TSiklonnye plavil'nye energo-tekhnologicheskie protsessy; trudy nauchno-tekhnicheskogo soveshchaniia, provedennogo Moskovskim energeticheskim institutom v marte 1962 g. Nauchn. red. N.A.Semenenko. Moskva, Metallurgizdat, 1963. 119 p. (MIRA 16:10)

1. Moskovskiy energeticheskiy institut (for Semenenko).
(Smelting furnaces) (Separators (Machines))

NEPOMNYASHCHIY, Igor' Lazarevich; BURSHTEYN, M.D., red.; LANOVSKAYA, M.R., red. izd-va; ATTOPOVICH, M.K., tekhn. red.[deceased]

[Design and construction of coking machines]Koksovye mashiny, ikh konstruktsii i raschety. Izd.2., perer. i dop. Moskva, Metallurgizdat, 1963. 388 p. (MIRA 16:2)
(Coking plants—Equipment and supplies)

LANOVSKIY, M.G.

LANOVSKIY, M.G.

Experience in eliminating shortcomings in factory operation.
Tekst.prom. 14 no.5:44-45 My '54. (MLRA 7:6)

1. Glavnyy inzhener Glavlenkhlopproma.
(Textile industry)

LANOVSKIY, M.G.

For an early fulfillment of the fifth five-year plan. Tekst.prom. 15 no.8:4-6 Ag'55. (MLRA 8:11)

1. Glavnyy inzhener Glavlenkhloppproma
(Textile industry)

LANOVSKIY, M.G.,

Simplifying the managerial structure of cotton textile enterprises.
Tekst.prom.15 no.10:68-69 O'55. (MLRA 8:12)

1. Glavnyy inzhener Glavlenkhloppproma
(Cotton manufacture)

LANOVSKIY, M.G.

Manufacture of printed, varicolored zephyr. Tekst.prom. 16 no.10:69 O '56. (MLRA 10:1)

1. Glavnyy inzhener Glavlenkhlopproma.
(Cotton fabrics)

LANOVSKIY, M.G.

LANOVSKIY, M.G.

Development of the textile industry in the Leningrad Economic Region. Tekst.prom.17 no.11:16-19 N '57. (MIRA 10:12)

1. Glavnyy inzhener Upravleniya tekstil'noy promyshlennosti Leningradskogo sovnarkhoza.
(Leningrad economic region--Textile industry)

LANOVSKIY, M.G.

Improving the assortment and increasing the output of fabrics for children's clothing. Tekst. prom. 18 no.8:17-20 Ag '58.
(MIRA 11:10)

1.Glavnyy inzhener upravleniya tekstil'noy promyshlennosti Leningradskogo sovnarkhoza.
(Textile fabrics) (Children's clothing)

LANOVSKIY, M.G.

Struggle for technical progress. Tekst.prom. 20 no.2:7-12 F '60. (MIRA 13:6)

1. Glavnyy inzhner Upravleniya tekstil'noy promyshlennosti Leningradskogo sovnarkhoza.
(Leningrad Province--Textile industry)

LANOVSKIY, M.G.

Expansion of the textile industry in the Leningrad Economic Administrative Region. Tekst.prom. 21 no.9:26-29 S '61. (MIRA 14:10)

1. Glavnyy inzh. Upravleniya tekstil'noy promyshlennosti Lensovnarkhoza. (Leningrad Economic Region—Textile industry)

LANOVSKIY, M.G.

On the road toward complete automation of production processes.
Tekst.prom. 22 no.6:5-8 Je '62. (MIRA 16:5)

1. Glavnyy inzh. Upravleniya tekstil'noy promyshlennosti Leningradskogo soveta narodnogo khozyaystva.
(Textile industry) (Automation)

LANOVSKIY, M.G., red.; SKOL'NIK, I.D., red.

[Scientific and technial contest papers of the members of the Scientific and Technical Society of the Textile Industry for the period from 1962 to 1963; materials on an exchange of experience in production technology] Konkursnye nauchno-tekhnicheskie raboty chlenov NTO tekstil'noi promyshlennosti za 1962 - 1963 g.; materialy po obmenu proizvodstvenno-tekhnicheskim opytom. Leningrad, Nauchno-tekhn. ob-vo legkoi promyshl. Leningr. pravlenie, 1964. 89 p. (MIRA 18:4)

LANOWSKA, J.

2780. Preliminary studies on the influence of the environment upon the mycorrhiza in potato plants. J. Lanowska *Acta microbiol. polon.*, 1955, 4, 265—270 (Z Dzialow Ekologii IHAR i Mikrobiologii IUNG w Pulawach, Poland).—Mycorrhiza were observed in all plants of *Solanum tuberosum* taken from a fungi but none of those grown on forest soil for 3 years. The fungi entering into the symbiotic relationships with the potato were morphologically different in the field and in the forest soil. The development of the mycorrhiza was most pronounced in the plants which were transferred every year to a new field. (Polish with English summary)

B. Virky

LANOWSKA, Jadwiga

Investigations concerning the appearance of mycorrhiza in potatoes of the Lorch variety in field and forest clearing plantations. Rocz nauk roln rosl 82 no.3:779-804 '61.

1. Zaklad Ekologii Rolniczej, Instytut Uprawy, Nawozenia i Gleboznawstwa, Pulawy.

KARPENKO, B.K., kand. tekhn. nauk; IVANOVA, I.G., inzh.; LANOVOY, V.G., inzh.; SHCHERBINA, B.A., inzh.

A d.c. motor with printed armature winding. Energ. i elektrotekh. prom. no.3:33-36 Jl-S '65. (MIRA 18:9)

LANSHCHIKOV, M.T.; LAPTEV, V.L., starshiy inzh.

Increase in the protection of automatic block systems of electrified railroad districts against overvoltages caused by lightning strokes. Avtom., telem.i sviaz' 6 no.4:32-33 Ap '62. (MIRA 15:4)

1. Nachal'nik laboratorii signalizatsii i svyazi Sverdlovskoy dorogi, vneshtatnyy korrespondent zhurnala "Avtomatika, telemekhanika i svyaz'" (for Lanshchikov). 2. Laboratoriya signalizatsii i svyazi Sverdlovskoy dorogi (for Laptev).
(Railroads--Signaling--Block system) (Electric protection)

LANSHCHIKOV, M.T.; ALYAKIN, G.A.

A device for locating electric lines. Avtom., telem. i sviaz' 6 no.7: 29-30 Jl '62. (MIRA 16:2)

1. Nachal'nik laboratorii signalizatsii i svyazi Sverdlovskoy dorogi, vneshtatnyy korrespondent zhurnala "Avtomatika, telemekhanika i svyaz'" (for Lanshchikov). 2. Starshiy inzh. laboratorii signalizatsii i svyazi Sverdlovskoy dorogi (for Alyakin).

(Electric lines--Underground) (Electric lines--Measurement)

LAN'SHIN, A.P.

Activate the work of production conferences. Put' i sut. khoz. no.3:1-2 Mr '58. (MIRA 11:4)

1. Sektetar' TSentral'nogo komiteta profsoyuza rabochikh zheleznodorozhnogo transporta.
(Railroads)

LANSHIN, I.A.

Municipal economy of the capital. Gor.khoz.Mosk. 35 no.9:15-20 S '61. (MIRA 14:10)

1. Zaveduyushchiy otdelom Moskovskogo gorodskogo komiteta Kommunisticheskoy partii Sovetskogo Soyuza.
(Moscow--Municipal services)

LANSHIN, I.A.

Prepare the city for winter in good time. Gor. khoz. Mosk. 36 no. 9:1-5 S '62. (MIRA 15:10)

1. Zaveduyushchiy otdelom gorodskogo khozyaystva Moskovskogo gorodskogo komiteta Kommunisticheskoy partii Sovetskogo Soyuza. (Moscow—Municipal services—Cold weather conditions)

SHAKHPARONOV, M. I. and LANSHINA. L. V.

LANSHINA, L. V.

"THe Microstructure of Sound,"

report presentedat the 6th Sci. Conference on the Application of Ultrasound in the Investigation of Matter, 3-7 Feb 58, Moscow, organized by Min. of Education RSFSR and Moscow Oblast Pedagogic Inst. im N. K. Krupskaya

6.8000 (3201, 1099, 1162)

S/020/60/133/003/029/C 31/XX
B004/B064

AUTHORS: Lanshina, L. V., and Shakhparonov, M. I.

TITLE: The Fine Structure of the Rayleigh Dispersion of Light in Solutions and the Dispersion of Hyperacoustic Vibrations

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 3, pp. 624 - 626

TEXT: The apparatus used by the authors to photograph the fine structure of the Rayleigh line of dispersed light has already been described in Ref. 1. The authors investigated mixtures of acetone and water at 25°C with a molar ratio of acetone of 0.0; 0.06; 0.2; 0.4; 0.7, or 1.0, and mixtures of water and methanol with a molar ratio of the latter amounting to 0.15; 0.36; 0.6; or 1.0. Measurements were made by means of the Hg line λ = 4358 A, and for pure water also with λ = 4046 A. The photographs were phctometrically treated with an МФ-4 (MF-4) microphotometer. Fig. 1 shows the propagation velocity of hyperacoustic vibrations in acetone - water ($\omega \approx 0.6 \cdot 10^{10}$ sec^{-1}, $\Lambda \approx 22 \cdot 10^{-6}$ cm) and methanol - water mixtures ($\omega \approx 0.5 \cdot 10^{10}$ sec^{-1},

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$\Lambda \approx 22.0 \cdot 10^{-6}$ cm) as computed from the equation $\Delta\nu/\nu = 2n(v/c)\sin(\theta/2)$. The data of Refs. 4, 5 on the propagation velocity of ultra-acoustic vibrations ($\omega \approx 56 \cdot 10^{-5}$ sec^{-1}, $\Lambda \approx 24 \cdot 10^{-3}$ cm) are added for comparison. A considerable negative dispersion of hyperacoustic vibrations was found to exist; $\Delta\nu/\nu$ reached about 5%, while the root mean square of deviation was only about 1.4%. The negative dispersion vanishes with falling water concentration x_1, i.e., for acetone - water at $x_1 = 0.65$ and for methanol - water at $x_1 = 0.5$. This negative dispersion is explained by the structural relaxation of water, and corresponds to the well-known anomalies of water. Moreover, the integral intensity I_c of the central component and the intensity I_{tr} of the translational component by Mandel'shtam and Brillouin were compared, and the refractive index n_λ was represented as a function of concentration (Fig. 2). Considerable positive deviations from the Raoult law were observed in the acetone - water mixture. The fluctuations of concentration attain their

The Fine Structure of the Rayleigh Dispersion of Light in Solutions and the Dispersion of Hyperacoustic Vibrations

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maximum at $x_1 \approx 0.4$. In this range of concentration, n_λ passes through a maximum and $I_c/2I_{tr}$ through a minimum. In the methanol - water mixture which is almost ideal, the fluctuations of concentration are slight. $I_c/2I_{tr}$ passes through a maximum in the same range of concentration in which n_λ attains its maximum. There are 2 figures and 6 references: 5 Soviet and 1 Indian.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: March 7, 1960 by V. V. Shuleykin, Academician

SUBMITTED: March 7, 1960

LANSHINA, L. V.

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PHASE I BOOK EXPLOITATION SOV/5469

Soveshchaniye po kriticheskim yavleniyam i flyuktuatsiyam v rastvorakh. Moscow, 1960.

Kriticheskiye yavleniya i flyuktuatsii v rastvorakh; trudy soveshchaniya, yanvar' 1960 g. (Critical Phenomena and Fluctuations in Solutions; Transactions of the Conference, January 1960) Moscow, Izd-vo AN SSSR, 1960. 190 p. 2,500 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova. Khimicheskiy fakul'tet.

Responsible Ed.: M. I. Shakhparonov, Doctor of Chemical Sciences, Professor; Ed. of Publishing House: E. S. Dragunov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE : This collection of articles is intended for scientific personnel concerned with chemistry, physics, and heat power engineering.

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Critical Phenomena and Fluctuations SOV/5469

COVERAGE: The book contains 24 of the 26 reports read at the Conference on Critical Phenomena and Fluctuations in Solutions organized by the Chemical Division of Moscow State University, January 26-28, 1960. The reports contain results of investigations carried out in recent years by Soviet physicists, chemists, and heat power engineers. The Organizing Committee of the Conference was composed of Professor Kh. I. Amirkhanov, A. Z. Golik, I. R. Krichevskiy (Chairman), V. K. Semenchenko, A. V. Storonkin, I. Z. Fisher, and M. I. Shakhparonov (Deputy Chairman). References accompany individual articles.

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AVAILABLE: Library of Congress (QD545.S73)

JF/dfk/jw
10-28-61

Card 9/9

LANSHINA, L.V.; SHAKHPARONOV, M.I.

Fine structure of the Rayleigh line of scattered light, and the propagation velocity of hyperacoustic oscillations in water. Dokl. AN SSSR 137 no.4:830-832 Ap '61. (MIRA 14:3)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. Predstavleno akademikom V.V. Shuleykinym.
(Underwater acoustics)
(Light--Scattering)

SHAKHPARONOV, M.I.; TUNIN, M.S.; LANSHINA, L.V.; SUKHOTINA, G.G.

Hyperacoustic properties of liquids and molecular structure.
Ukr.fiz.zhur. 7 no.7:792-796 Jl '62. (MIRA 15:12)

1. Moskovskiy universitet.
(Sound—Speed) (Molecules)

S/185/62/007/007/010/010
I048/I248

AUTHORS: Shakhparonov, M.I., Tunin, M.S., Lanshina, L.V., and Sikhotina, G.G.

TITLE: The hypersacoustic properties of liquids and the structure of molecules

PERIODICAL: Ukrains'kyy fizychnyy zhurnal, v.7, no.7, 1962, 792-796

TEXT: The dispersion of sound velocities in the hypersacoustic range was studied in a number of pure liquids, using the technique described by I.L. Fabelinskiy in UNF 63, 355, 1957. The experiments were carried out at 20-85°C and were based on the examination of the fine structure of the 4538 Å Rayleigh line. The

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S/185/62/007/007/010/010
I048/I248

The hyperacoustic properties of...

absorption of ultrasonic waves with frequencies of 8.5 - 34.4 Mc/sec was also measured. Accuracy was ±0.3 - 1% in the ultrasonic, and ±2 - 3% in the hypersonic ranges. Dispersion of the sound velocities was observed in the following media: carbon disulfide, methylene chloride, carbon tetrachloride, thiophene, furan, benzene, styrene, and pyridine (all at 20°C), in methylene bromide (at 24°C), in quinoline (at 70°C) and in naphtalene (at 85°C); no dispersion was observed in water, methanol, acetone, toluene, heptane, and cyclohexane, at 20°C. These results show that dispersion takes place in media whose molecules have a four- or six-element "closed ring" structure, or a "double-ring" structure with a π-electron configuration: or in media containing a non-saturated radical in the molecule ; or in media made up of simple molecules

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S/185/62/007/007/010/010
I048/I248

The hyperacoustic properties of...

having π-electrons, i.e., in all whose molecules are compact and possess a relatively large number of mobile electrons. The mechanism of the acoustic dispersion in non-dissociated liquids is discussed, and a certain analogy is discovered between the structure of a molecule and its tendency towards fluorescence and acoustic relaxation. There are 2 tables.

ASSOCIATION: Moskovskiy universitet (The University of Moscow)

Card 3/3

NOVOZHILOV, V.V., doktor ekon. nauk, prof., otv. red.; LANSKAYA, K.A., red.

[Mathematicoeconomic problems; transactions] Matematiko-ekonomicheskie problemy; trudy. Leningrad, Izd-vo Leningr. univ., 1963. 88 p. (MIRA 17:7)

1. Leningradskaya konferentsiya po voprosam primeneniya matematiki v sotsialisticheskoy ekonomike. 1st, 1961.

LANSKAYA, K. [A.]

B.T. B.M.I. 1288

A. Borzdyka and K. Lanskaya, Effect of Carbon Content on High Temperature Strength of 14% Cr, 14% Ni, 2.5% W Steel. METALLURG, vol. 15, 1940, No. 10, pp. 25-31; 3300 words.

LANSKAYA, K. A.

Jan/Feb 48

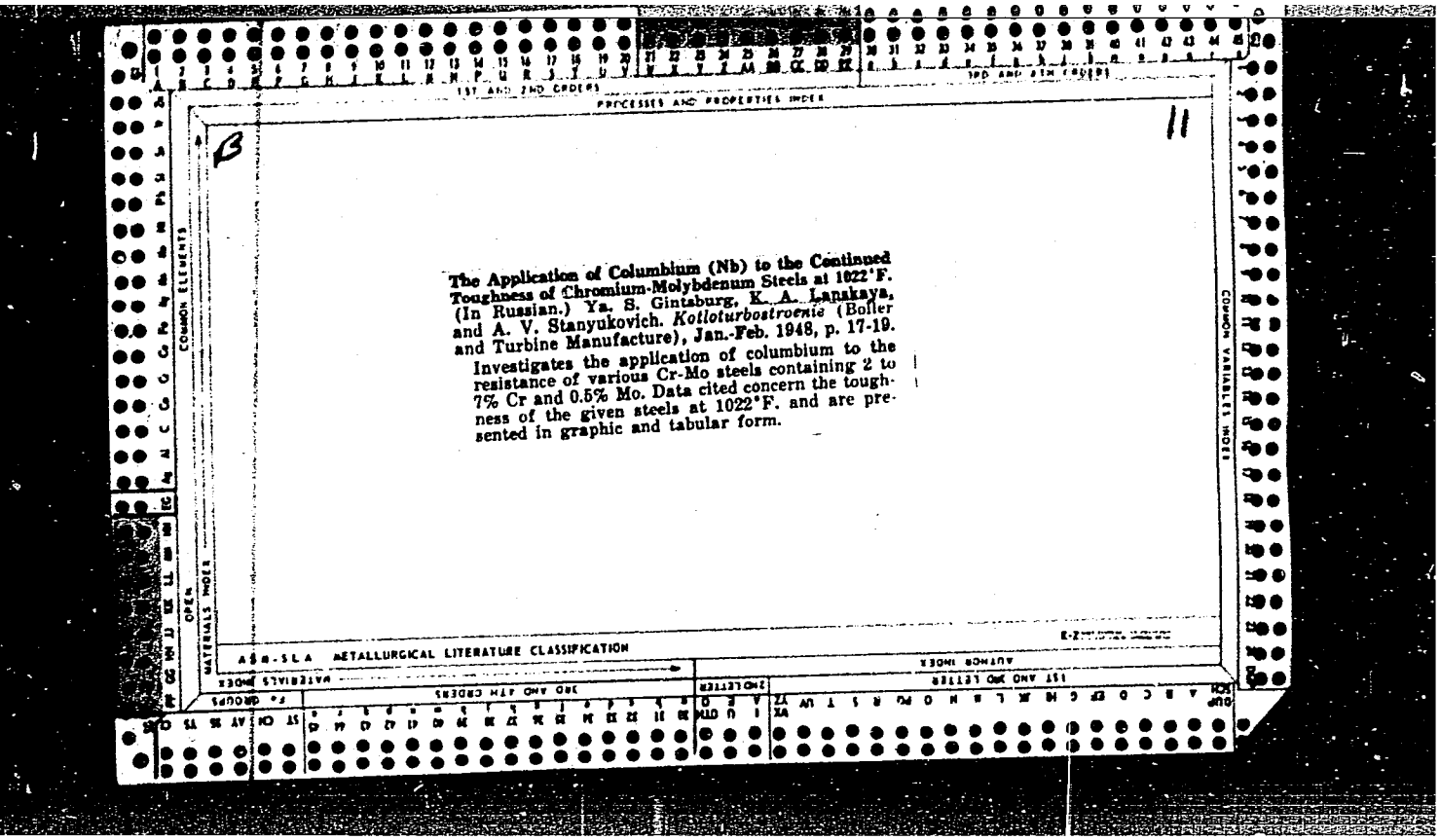
USSR/Metals
Steel, Chromium Molybdenum
Columbium

"The Effect of Niobium on the Lasting Solidity of Chrome Molybdenum Steel at 550°," Ya. S. Gintsburg, Cand Tech Sci; A. V. Stanyukovich; K. A. Lanskaya, Engr, Cen Sci Res Turboboiler Inst imeni I. I. Polzunov, 2½ pp

"Kotloturbostroy" No 1

Studies effect of niobium on its resistance to prolonged tension of a series of molybdenum-chrome steels containing 2÷7% Cr and 0.5% Mo. Gives date on stability of chrome-molybdenum-niobium steels at 500°.

PA 1/49T71



The Application of Columbium (Nb) to the Continued Toughness of Chromium-Molybdenum Steels at 1022°F. (In Russian.) Ya. S. Gintsburg, K. A. Lanskaya, and A. V. Stanyukovich. *Kotloturbostroenie* (Boiler and Turbine Manufacture), Jan.-Feb. 1948, p. 17-19.

Investigates the application of columbium to the resistance of various Cr-Mo steels containing 2 to 7% Cr and 0.5% Mo. Data cited concern the toughness of the given steels at 1022°F. and are presented in graphic and tabular form.

LANSKAYA, K.A.

ESTULIN, G.V.; RYLNIKOV, A.P.; LANSKAYA, K.A.

"Metal testing at elevated temperatures." IA.S. Gintsburg. Reviewed by G.V. Estulin, A.P. Ryl'nikov, K.A. Lanskaia. Zav.lab. 21 no.4:509-511 '55 (MLRA 8:6)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Metals -- Testing) (Gintsburg, IA.)

LANSKAYA, K.A.

18(2) PHASE I BOOK EXPLOITATION SOV/2192

Pridantsev, Mikhail Vasil'yevich, and Kseniya Alekseyevna Lanskaya

Stali dlya kotlostroyeniya (Steels for the Manufaqture of Boilers) Moscow, Metallurgizdat, 1959. 303 p. 4,500 copies printed.

Ed.: G.K. Shreyber; Ed. of Publishing House: Ye. N. Berlin; Tech. Ed.: P.G. Islent'yeva.

PURPOSE: This book is intended for scientific workers of institutes and educational institutions, and engineers and designers dealing with the production and application of heat-resistant steels.

COVERAGE: The book presents data on changes in the structure and properties of steels subjected to high temperatures and stresses for a long period of time and data on the effect of carbon, alloying elements, impurities, and structural factors on the properties of pearlite and austenite heat-resistant boiler steels. Problems of the theory of creep, heat resistance, and the principles of alloying are discussed. Information is also given on

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the properties of pearlite and austenite heat-resistant steels for boiler installation and on other designs intended for long-time service at temperatures of 500-700° C. The authors thank Senior Scientific Worker R.M. Kireyeva of the Steel Institute of TsNIIChM and laboratory technicians R.A. Raykel'son and L. M. Maksimova. There are 115 references: 74 Soviet, 33 English, 5 German, and 3 French.

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LANSKAYA, K.A.

PHASE I BOOK EXPLOITATION SOV/3559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.M. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

PHASE I BOOK EXPLOITATION SOV/4164

Vsesoyuznoye soveshchaniye po splavam redkikh metallov. 1st, Moscow, 1957

Redkiye metally i splavy; trudy... (Rare Metals and Alloys; Transactions of the First All-Union Conference on Rare-Metal Alloys) Moscow, Metallurgizdat, 1960. 438 p. 3,150 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut metallurgii; USSR Komissiya po redkim metallam pri nauchno-tekhnicheskom komitete.

Ed.: I.K. Shapovalov; Ed. of Publishing House: O.M. Kamayeva; Tech. Ed.: P.G. Islent'yeva.

PURPOSE: This collection of articles is intended for metallurgical engineers, physicists, and workers in the machine-building and radio-engineering industries. It may also be used by students of schools of higher education.

COVERAGE: The collection contains technical papers which were presented and discussed at the First All-Union Conference on Rare-Metal Alloys, held in the Institute of Metallurgy, Academy of Sciences USSR in November 1957. Results of investigations of rare-metal alloys, titanium, and copper-base alloys with additions of rare metals are presented and discussed along with investigations of rhenium, vanadium, niobium, and their alloys. The effect of rare-earth metals on properties of magnesium alloys and steels is analyzed. The uses of rhenium as a dehydrating catalyst, electroplating material, and material suitable for making plugs for automobile electrical systems are discussed. Also, the effect of the addition of certain elements on the properties of heat-resistant steel is examined and alloys with special physical properties (particularly semiconductive alloys) are discussed. No personalities are mentioned. Soviet and non-Soviet references accompany some of the articles.

PART II. TITANIUM, AND COPPER-BASE ALLOYS WITH RARE-METAL ADDITIONS

Rare Metals (Cont.) SOV/4164

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LANSKAYA, KA

LANSKAYA, K.A.

Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut ... energy metallurgii

Spetsial'nyye stali i splavy (Special Steels and Alloys) Moscow, Metallurgizdat, 1960. 488 p. (Series: Its: Sbornik trudov, vyp. 17) Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Institut kachestvennykh staley; Gosudarstvennyy planovyy komitet Soveta Ministrov SSSR; and Glavnoye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy.

Ed.: M.V. Pridantsev; Ed. of Publishing House: A.L. Ozeretskaya; Tech. Ed.: V.V. Mikhaylova.

PURPOSE: This book is intended for engineering and research personnel in the metallurgical and machine-building industries.

COVERAGE: This book contains papers on the physical properties of special industrial steels and alloys. Individual papers treat the problem of flake formation in steels and preventive measures, the effect of alloying additions and heat treatment on the structure and properties of steel, steel corrosion and preventive measures, and the properties of chromium-nickel alloys. There are 120 references: 87 Soviet, 22 English, 9 German, and 2 French.

Pridantsev, M.V. [Professor, Doctor of Technical Sciences], and K.A. Lanskaya [Candidate of Technical Sciences]. The Effect of Carbon on Heat-Resisting Properties of Low-Alloy Boiler Steels 80

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Pridantsev, M.V., and A.V. Morilina [Engineer]. Effect of Service Life on Corrosion of Chromium-Nickel Alloys 349

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Pridantsev, M.V., and D.A. [illegible]. Effect of Phosphorus on [illegible] Chromium-Nickel Austenitic Steels

PRIDNATSEV, M.V., prof., doktor tekhn.nauk; LANSKAYA, K.A., kand.tekhn.nauk

Effect of carbon on the heat-resisting properties of low-alloy boiler steel. Sbor. trud. TSNIICHM no.17:80-85 '60. (MIRA 13:10)
(Steel alloys) (Heat-resistant alloys)

PRIDANTSEV, M.V., prof., doktor tekhn.nauk; LANSKAYA, K.A., kand.tekhn.nauk

New steel without molybdenum for cracking plants. Sbor. trud. TSNIICHM no.17:86-98 '60. (MIRA 13:10)
(Steel alloys--Thermal properties)

34530
S/659/61/007/000/017/044
D217/D303

18.1151

AUTHORS: ~~Lanskaya, K.A.,~~ and Gorchakova, E.N.

TITLE: Microalloying of heat resistant tube steels

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 7, 1961, 169 - 177

TEXT: Small additions of B, Ce, La, Zr, Ca and Ba have found wide application in industry in manufacturing heat resistant and stainless steels and alloys. Many investigations have been carried out within the last few years on the influence of these elements on the properties of various alloys, but the nature and mechanism of this influence are not fully understood. Therefore, the authors made an attempt to discover the mechanism of the influence of each additive both as a deoxidizer and as an alloying element, apart from their influence as modifiers, desulphurizers and elements promoting the formation of high melting point compounds with harmful impurities. For this purpose, the materials were chosen so as to be free of any non-ferrous metals (Pb, Zn, Sn, etc.) and so as to contain a mini-

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Microalloying of heat resistant ...

mum of sulphur. New accurate methods for determining small additions were developed for this purpose: Chemical, spectral and spectrochemical analyses. N.N. Sorokina, V.M. Golubeva, F.A. Ozerskaya and A. M. Krichevskaya participated in this work. The investigation was carried out on two steels belonging to different classes, in order to verify the influence of small additions on the properties of α- and γ- base solid solutions of iron. The Cr-Mo-V steel 12ХМФ (12Kh MF) and the Cr-Ni-Nb steel ВИ694 (VI694) were melted in 10 and 30 kg furnaces. The following additions (in %) were made to these steels: 0.005 - 0.10 B, 0.05 - 0.50 Ca, 0.05 - 0.50 Ba, 0.03 - 1.00 Zr, 0.01 - 0.50 Ce and 0.01 - 0.50 La. All additions were made to the steels after deoxidation with Si, Mn and a nickel-manganese alloy. Cerium was added in the form of mish metal or ferro-cerium, boron as ferro-boron, zirconium as 30 % or 46 % silicozirconium, calcium as silicocalcium, barium as an aluminum-barium alloy and metallic barium; lanthanum was only added to steel ЭИ694 (EI694). It was found that Ca and Ba act only as deoxidants of steel; they reduce the gas content of the metal and purify it from non-metallic impurities, especially SiO_2. Additions of Ce + La and Zr to perli-

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tic steel have a deoxidizing effect (basically they reduce the Al_2O_3 content of the metal), whereas when added to austenitic steel they also act as alloying elements, strengthening the material. Boron is an active deoxidizer, but its main effect is its ability to act as an alloying element in the grain boundaries of the α- and γ-solid solutions, (which are the weakest portions at high temperatures) owing to the fact that boron is a surface-active element. There are 5 figures, 2 tables and 3 Soviet-bloc references.

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PRIDANTSEV, M.V., doktor tekhn.nauk, prof.; IANSKAYA, K.A., kand.tekhn.nauk

Development and application of heat resistant pipe steel. Teplo-energetika 9 no.8:2-6 Ag '62. (MIRA 15:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. (Steel) (Pipe, Steel)

LANSKAYA, K.A.; KIREYEVA, R.M.

Structural transformations in Fe-Cr-Ni austenitic steels with various chromium to nickel ratios. Sbor.trud.TSNIICHM no.27: 139-148 '62. (MIRA 15:8)
(Chromium-nickel steels--Metallography)
(Phase rule and equilibrium)

LANSKAYA, K.A., KIRYEVA, R.M.

Structural transformations in Fe-Cr-Ni austenite steels with different Cr/Ni ratio.

SPECIAL STEELS AND ALLOYS (SPETSIAL'NYYE STALI I SPLAVY), Collection of Studies, Issue 27, 240 pages, published by the State Scientific and Technical Publishing House for Ferrous and Non-Ferrous Metallurgy, Moscow, USSR, 1962.

S/133/63/000/003/004/007
A054/A126

AUTHORS: Lanskaya, K.A., Kireyeva, R.M., Gorchakova, E.N.

TITLE: On the quality of 12 Х1 МФ (12Kh1MF) grade billets and tubes

PERIODICAL: Stal', no. 3, 1963, 242 - 247

TEXT: Investigations carried out into the mechanical properties of 12Kh1MF grade billets and tubes of various diameter and wall-thickness revealed a considerable non-uniformity as to characteristics, depending on their section, diameter and wall-thickness. In view of the fact that the investigated samples originated from the same grade of steel it could be assumed that this anisotropy in properties must be put down to differences in the heat treatment of billets and tubes. Great deviations were found mainly with respect to notch toughness. The tests on the effect of heat treatment (rate of cooling and annealing temperature) showed that the optimum results as to mechanical properties and heat resistance are obtained upon normalizing at 960 - 980°C and annealing at 730 - 750°C for 3 h (for tubes up to 25 - 30 mm wall-thickness). For thick-walled tubes an increased rate of cooling should be applied by means of pressurized air

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On the quality of 12 X1MΦ (12Kh1MF) ....

or water-oil cooling after heating to 960 - 980°C with subsequent annealing. The respective tests were carried out at the TsNIIChM applying 15 different cooling rates. Over-heating and under-heating had varying effects on the properties. Annealing at 800 - 830°C ensures a notch toughness of 20 - 25 kgm/cm^2 but deteriorates heat resistance. The anisotropy in mechanical characteristics can be reduced by ensuring that in the heat treating furnaces the tubes are heated uniformly lengthwise and across, moreover, by applying devices which increase the cooling rate. Uniform values for notch toughness, for instance, were obtained at a cooling rate of 36°C/min. There is also a difference in mechanical properties for transverse and longitudinal samples. Low values can be found for transverse contraction and extension of transverse samples cut out from billets, whereas this is not observed in longitudinal specimens. This is explained by the higher gas content (mainly hydrogen), a higher amount of nonmetallic inclusions and a higher degree of deformability of some heats. In general, no direct relationship could be established between the properties of the billet and those of the finished tube. With the present method of assessing the quality, carried out for billets (over 140 mm in diameter) on longitudinal specimens cut out from 90 mm squares and on transverse specimens cut from the finished tube,

On the quality of 12 Х1 МФ (12Kh1MF) ....

their characteristics cannot be compared. To render this possible, i.e., to make the properties of billets and tubes comparable, both should be investigated by reference to transverse specimens. The investigations and tests described refer to the Yuzhnotrubnyy zavod (Yuzhnotrubnyy Plant) and the Chelyabinskiy truboprokatnyy zavod (Chelyabinsk Tube-Rilling Plant). There are 7 figures.

ASSOCIATION: ЦНИИЧМ (TsNIIChM)

PRIDANTSEV, M.V., doktor tekhn.nauk, prof.; LANSKAYA, K.A., kand.tekhn.nauk

Safety factor and choice of permissible stresses in the calculation of boiler pipes. Teploenergetika 10 no.1:61-64 Ja '63. (MIRA 16:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

(Boilers) (Steampipes)

L 12896-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3000676 S/0096/63/000/006/0002/0006

AUTHOR: Lanskaya, K. A. (Candidate of technical sciences)

TITLE: Structure and properties of steels used in boilers at high and ultra-high temperatures and pressures

SOURCE: Teploenergetika, no. 6, 1963, 2-6

TOPIC TAGS: steel pipe, microstructure, heat resistance, heat treatment, durability

ABSTRACT: Experiments were conducted to find out the influence exerted by the structure of steel on its heat resistance, to study the stability of hardened and tempered steel structures subjected to continuous heating, and to determine the heat resistance of alloy steels with metastable structures. Because of increasing temperatures and pressures of the steam used in boiler and turbine plants and because of the change to machinery demanding higher heat resistance, these problems have become important in recent years. The influence of structure on the sustained strength of steel pipes with various compositions and mechanical properties was tested and the results tabulated. It was concluded that certain heat treatments for pipes must be selected from the results of sustained strength tests, not from mechanical characteristics determined in tensile and impact experiments. Mechanical

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L 12896-63
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properties (especially resistance to impact) may serve as indicators of the heat treatment to which the steel was subjected, but do not project the sustained resistance to heat of these steels. Moreover, similar mechanical properties may be produced by various types of heat treatment, but only the properly chosen type will assure the desired heat resistance. Considering the relationship between the structure of steel and its heat resisting qualities, the author recommends microstructural control of pipe steel. Orig. art. has: 7 figures and 1 table.

ASSOCIATION: TsNIIChERMET

SUBMITTED: 00 DATE ACQ: 21Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 000 OTHER: 000

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LANSKAYA, K.A.; KIREYEVA, R.M.; GORCHAKOVA, E.N.

Quality of pipe billets and 12Kh1MF steel pipe. Stal' 23 no.3: 242-247 Mr '63. (MIRA 16:5)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Steel ingots--Testing) (Pipe, Steel)

ACCESSION NR: AP4012428 S/0129/64/000/002/0013/0018

AUTHORS: Lanskaya, K.A.; Gorchakova, E.N.; Kireyeva, R.M.

TITLE: Structural transformation in 12Kh1MF steel during heat treatment

SOURCE: Metalloved. i term. obrab. metallov, no. 2, 1964, 13-18

TOPIC TAGS: structural transformation, 12Kh1MF steel, heat treatment, chrome molybdenum vanadium steel, impact strength, vanadium carbide, yield strength, yield point, hardness

ABSTRACT: Due to high heat resisting properties, chromium-molybdenum-vanadium steel forced chromium-molybdenum steel out of the reactor production. It was established that vanadium in such steel strengthens the solid solution and decreases the rate of diffusion processes of elemental redistribution, particularly the molybdenum. In addition, the presence of thermally-stable, finely-dispersed vanadium carbides inhibits the development of displace-

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ment processes during plastic deformation. However, low values of impact strength are observed at room temperature in many chromium-molybdenum-vanadium steel products. To establish the reason for this, the structure and properties of chromium-molybdenum-vanadium 12Kh1MF steel were studied at TsNIIChM on metal of 5 industrial heats melted at the "Krasny*y Oktyabr" factory in 140 ton open hearth furnaces. During continuous cooling of 12Kh1MF steel, the transformation or austenite can proceed in 3 zones depending on the cooling rate: ferrite-perlite, interstitial and martensite. Components of different sizes are then cooled at one rate by changing cooling conditions. Tempering of hardened or normalized 12Kh1MF steel at 600-650C causes separation of finely dispersed vanadium carbides and accompanied by an increase of the yield strength, yield point, and hardness and a decrease of impact strength. With an increase in tempering temperature, agglomeration of vanadium carbides occurs which decreases strength properties and increases plastic properties and impact toughness. During tempering of annealed steel, vanadium carbides are not separated and mechanical properties are not changed, since

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ACCESSION NR: AP4012428

vanadium carbides were fully separated in the cooling process during annealing. Low and unequal values of impact strength in heat-treated, thick-walled tubes were observed due to an insufficient cooling rate and break in temperature during tempering in factory furnaces. High heat resisting properties with sufficiently high temporary mechanical properties were reached after heating at 960-980C, cooling from this temperature at a rate of no less than 200-300 degrees/min., and tempering at 730-750C. Orig. art. has: 4 figs., 3 tables.

ASSOCIATION: TsNIIChM

SUBMITTED: 00	DATE ACQ: 03Mar64	ENCL: 00
SUB CODE: ML	NO REF SOV: 003	OTHER: 000

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LANSKAYA, K.A., kand. tekhn. nauk

Properties of thick-walled pipes from 12KhlMF steel , their bends, and welded joints. Teploenergetika 11 no.12:9-14 D '64
(MIRA 18:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina.

L 11959-65 EWT(m)/EWA(d)/EWP(t)/EWP(b) AFWL/ASD(m)-3 MJW/JD/MLK

ACCESSION NR: AT4046856 S/0000/64/000/000/0284/0290

AUTHOR: Lanskaya, K. A.

TITLE: Structure as a factor in the heat-resistance of boiler steel

SOURCE: AN SSSR. Nauchny*y sovet po probleme zharoprochny*kh splavov. Issledovaniya staley i splavov (Studies on steels and alloys). Moscow, Izd-vo Nauka, 1964, 284-290

TOPIC TAGS: boiler steel, perlite steel, steel structure, cooling rate, austenitic transformation, steel heat resistance, steel mechanical property/steel 12Kh1MF, steel 12Kh2MFSR

ABSTRACT: The author discusses the effect of cooling rate (1 to 1000 degrees centigrade/min.) on the structure, stress-rupture strength and mechanical properties of two steels of the perlite type: 12Kh1MF with 1% Cr, 0.25-0.35% Mo and 0.15-0.30% V, and 12Kh2MFSR with 1.5-1.8% Cr, 0.5-0.8% Mo, 0.15-0.30% V, 0.005% B and an unspecified percentage of Si. On the basis of thermokinetic diagrams of the steels, revealing the course of austenite transformations in the ferrite-perlite region (at 1-6 degrees/min.), intermediate region (at 200-250 degrees/min.) and martensite region (at up to 1000 degrees/min.) as a function of cooling rate, samples with ferrite-perlite, intermediate

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and martensite structures, desired for tests, were prepared by appropriate thermal treatment. From the results, graphs of stress-rupture strength were plotted in a logarithmic system of double strain vs time allowing an extrapolation to 10,000 and 100,000 hrs. A highly tempered martensite structure was found to be the most effective positive factor for heat-resistance, considerably exceeding the intermediate and ferrite-perlite structures in promoting stress-rupture strength. "E. N. Gorchakova took part in the preparation of the thermokinetic diagrams." Orig. art. has: 4 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 16Jun64 ENCL: 00 SUB CODE: MM

NO REF SOV: 001 OTHER: 002

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L 7999-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) JD

ACC NR: AP5026533 SOURCE CODE: UR/0286/65/000/019/0073/0073

INVENTOR: Lanskaya, K. A.; Gorchakova, E. N.; Surovtseva, Ye. D.; Lapitskaya, Ye. M.; Malysheva, V. P.; Zemzin, V. N.; Smirnova, I. D.

TITLE: Ferritic steel. Class 40, No. 175238 [announced by the Central Scientific Research Institute of Ferrous Metallurgy im. I. P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 73

TOPIC TAGS: steel, ferritic steel, heat resistant steel, silicon containing steel, manganese containing steel, chromium containing steel, molybdenum containing steel, vanadium containing steel, niobium containing steel, tungsten containing steel

ABSTRACT: This Author Certificate introduces a ferritic steel containing silicon, manganese, chromium, molybdenum, vanadium, niobium, and tungsten. In order to increase the rupture and creep strength, the steel has the following composition in %: 0.08—0.15 C, 0.4—1.0 Si, 0.4—1.0 Mn, 2.0—10.0 Cr, 0.5—2.0 Mo, 0.15—0.50 V, 0.5—1.5 Nb, and 6—10 W. [WW]

SUB CODE: MM/ SUBM DATE: 09Apr64/ ATD PRESS: 4145

nw

Card 1/1 UDC: 669.15-194.57

L 62786-65 EWI(m)/EPF(n)-2/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4/
Pu-4 IJP(c) MJW/JD/HW/JG

ACCESSION NR: AP5016539 UR/0096/65/000/007/0041/0046
669.15-194:621.772.4

AUTHOR: Lanskaya, K. A. (Candidate of technical sciences)

TITLE: Grade EI695R Cr-Ni-W-Nb steel with boron

SOURCE: Teploenergetika, no. 7, 1965, 41-46

TOPIC TAGS: heat resistant steel, austenitic steel, boiler steel, Laves phase, X ray micrography, niobium carbonitride, superheater tube, steam line tube/ EI695R steel (1Kh14N18V2BR steel)

ABSTRACT: The results of an investigation of steel EI695R (1Kh14N18V2BR) are presented. This steel is a highly heat-resistant austenitic boiler steel. The steel is designed for longtime service at 650-700°C. The high heat-resistant properties of this steel are due to its alloying with tungsten, niobium, boron, and cerium. Boron is added in the amount of 0.005%; the actual amount of boron in the metal is 0.0025% -- an amount which does not exceed its solubility in solid solution. Cerium is added in the amount of 0.02%. Both boron and cerium alloy the grain boundaries and thus increase the heat resistance of steels and alloys. The stability of the structure and properties of steel EI695R at high temperatures over a prolonged

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period of time is assured by keeping the Cr/Ni ratio at less than unity. The chemical composition of EI695R steel is as follows: 0.07-0.12% C, ≤ 0.60% Si, 1.0-2.0% Mn, 13.0-15.0% Cr, 18.0-20.0% Ni, 2.0-2.75% W, 0.9-1.3% Nb, ≤ 0.30% Cu, < 0.020% S, ≤ 0.030% P, 0.002-0.005% B, 0.02% Ce. Phase chemical analysis and X-ray micrography of specimens of EI695R steel austenitized at 1100-1150°C revealed the presence of carbonitride phase of niobium Nb(CN). The kinetics of the transformations that occur in this steel in the course of its longtime aging (at 650-900°C for 3000-5000 hr) is as follows: γ-solid solution + Nb(CN) → γ-solid solution → Laves phase + Nb(CN). The Laves phase, though the amount in which it is present is very small (not more than 1%), may markedly affect the steel's resistance to high temperatures. During aging under stress, which is analogous to long-time tensile tests or performance at high temperatures and pressures, the Laves phase forms mostly in the grain body, along the slip lines, thus strengthening the grain body and so increasing heat resistance. The plastic properties of the steel following its longtime strength tests are sufficiently high, and so are its mechanical properties. Thus, for example, after 17,000 hours of creep tests and tensile tests, no substantial change occurred in the mechanical properties of the specimens. The physical properties of steel EI695R include: specific weight 8.1 g/cm^3; heat conductivity λ = 0.036 cal/cm·sec °C. All this warrants recommending steel

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EI695R for broader use in the manufacture of superheater and steam-line tubes as well as of fittings operating in installations with superhigh steam parameters. Orig. art. has: 8 figures, 6 tables.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy)

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NR REF SOV: 007 OTHER: 000

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