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mentioned above. Natta and his co-workers investigated the polymerization mechanism by the effect of complex catalysts in detail (Refs 34 - 37, 63). The reduction of the activity of the catalyst in the course of the polymerization process which was observed in several cases probably does not indicate the consumption of active centers but the presence of secondary processes whose probability mainly depends on the method of the production of the catalyst. It was presumed that, besides the addition to the metal-carbon bond, the polymerization is initiated by free radicals which are formed because of the decomposition of unstable organic titanium compounds (Ref 43). A homolytical decomposition of a metallo-organic compound into radicals is actually possible if the ionisation potential is higher than the affinity of carbon at the electron. Attempts were made to combine the ion and radical mechanism (Ref 40). So far, there is however no universal theory of heterogeneous catalysis which would combine the existing ideas on the mechanism of the catalytical effect. Still, remarkable results have been achieved in this field in the course of

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the last years. The so-called electron-direction in catalysis is very promising in this regard; a number of Soviet (Refs 72 - 75) and foreign scientists (Refs 76 - 79) have been working in this field in the last years. In conclusion, the work by Natat and Sinn (Ref 89) has to be mentioned in which a new scheme with regard to the function mechanism of the complex catalysts is suggested. According to this scheme the addition of successive monomer parts to an increasing chain takes place on the inner metal carbon bonds of the complex. In case this scheme proves valid the theory of gradual polymerization will have to be revised. There are 89 references, 22 of which are Soviet.

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MOSEVITSKIY, M.I.

PHASE I BOOK EXPLOITATION SOV/4983

International symposium on macromolecular chemistry. Moscow, 1960.

Mezhdunarodnyy simposium po makromolekulyarnoy khimii, SSSR, Moskva, 14-18 iyunya 1960 g; doklady i avtoreferaty. Sektsiya II. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18; Papers and Summaries) Section II. [Moscow, Izd-vo AN SSSR, 1960] 559 p. 5,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry

Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemists interested in polymerization reactions and the synthesis of high-molecular compounds.

COVERAGE: This is Section II of a multivolume work containing papers on macromolecular chemistry, The papers in this volume treat mainly the kinetics of various polymerization reactions initiated by different catalysts or induced by radiation. Among the research techniques discussed are electron paramagnetic resonance spectroscopy and light-scattering interpolation. There are summaries in English, French and Russian. No personalities are mentioned. References follow each article.

Mihail, R., and J. Herscovici (Rumania). On the Mechanism of the Formation Reaction of Stereoregular Polymers 302

Simon, A., and G. Ghymes (Hungary). On the Kinetics of a Reaction on Zeigler Catalysts 310

Wichterle, O., M. Marek, and I. Trekoval (Czechoslovakia). Kinetics of the Polymerization of Isobutylene on a Heterogeneous Catalyst 322

Boček, V. (Czechoslovakia). Heterogeneous Catalysts for the Polymerization of Alpha Olefins 330

Veselý, K., I. Ambrož, R. Vilim, and O. Hamřík (Czechoslovakia). The Effect of Donor Type Impurities on the Polymerization of Propylene. Catalyzed by the System Titanium Trichloride-Triethyl-aluminum 337

Dolgoplosk, B.A. (USSR). Study of the Factors Leading to the Degradation of Chain Structure During the Ionic Polymerization of Dienes 346

Yerusalimskiy, B.L., Wang Fo-sung, and A.P. Kavunenko (USSR). Study of the Interaction of Organomagnesium Compounds With Salts of Heavy Metals and the Use of Organomagnesium Compounds and Their Complexes to Stimulate Polymerization 355

Santo, I., and K. Gal (Hungary). The Effect of Organic Inner Complexes of Some Metals of Variable Valence on the Kinetics of the Polymerization of Vinyl Compounds 366

Bresler, S.Ye., M.I. Mosevitskiy, I. Ya. Poddubnyy, and Shih Kuang-i (USSR). Study of Some Details of the Mechanism of Polymerization Under the Action of Complex Catalysts 372

Tsvetkov, V.N., S.Ya. Magarik, S.N. Bortsova, and M.G. Gusneva (USSR). Stereospecificity and the Optical Properties of Polymers 378

Birshteyn, T.M., Yu. Ya. Gotlib, and O.B. Ptitsyn (USSR). The Microtacticity of Polymers and Methods of Study 388

Abkin, A.D., A.P. Shevnker, M.K. Yakovleva, and L.P. Mezhirova (USSR). On Carbonium and Carbanion Polymerization Mechanisms Under the Effects of Gamma Radiation 410

Kargin, V. A., and V.A. Kabanov (USSR). Polymerization Processes in Insoluble Molecular Dispersions 453 31

Machaček, Z., Y. Mejzlík, and Z. Pác (Czechoslovakia). Kinetics of the Polymerization of Formaldehyde 253

Vesely, K. (Czechoslovakia). On the Mechanism of Ionic Polymerization 262

Zlámal, Z., and A. Kazda (Czechoslovakia). On the Role of Nonpolar Compounds in the Cationic Polymerization of Isobutylene 272 45

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83561

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B004/B060

5.3830 also 2109,2209

AUTHORS: Bresler, S. Ye., Mosevitskiy, M. I., Poddubnyy, I. Ya., Shi Guan-i

TITLE: Special Features of the Mechanism of the Limitation of Molecular Chains in the Polymerization Under the Action of Complex Catalysts

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 1, pp. 117 - 120

TEXT: The authors studied the polymerization of isoprene by means of a complex catalyst prepared from $Al(iso\text{-}C_4H_9)_3$ and $TiCl_4$. The molecular weights of the polymerization products were determined by ultracentrifuge. The authors found that the polymers obtained exhibited a very low spread of their molecular weight, and macromolecules with a molecular weight below 200,000 - 300,000 were almost completely lacking. They explain this phenomenon by the heterogeneity of the reaction. During its growth the polymer chain is linked at one end to the catalytic complex on the catalyst surface, and is therefore restricted in its formation.

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Special Features of the Mechanism of the Limitation of Molecular Chains in the Polymerization Under the Action of Complex Catalysts

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When tearing off the macromolecule from the surface there occurs an increase ΔS in the formation entropy. The authors found that ΔS increases with the number z of the kinetic segments of the polymer chain: $\Delta S = k\sqrt{z}$ (1) (k = Boltzmann constant). At the active end of the polymer chain there is the alkyl- or halogen-alkyl compound of aluminum, which forms a catalytic complex with $TiCl_4$ on the catalyst surface by means of an intermolecular bridge. The entropy of this intermolecular bond is only 10 - 15 kcal/mole, and therefore this bond constitutes the weakest spot of the complex. On this spot the macromolecule is torn off with a simultaneous dissociation of the complex. This dissociation is discussed, and for the ratio between the probability x saying that the polymer molecule is in solution and the probability x - 1 saying that it is bound to the catalyst surface, equation (3) is written down: $x/(1 - x) = \exp -(\Delta U - T\Delta S)/kT$. ΔU is the energy required for the tearing off of the macromolecule from the surface. From (1) and (3), equation (4) was found for the distribution of the molecular weights in the polymer: $dw/dM = \left\{\sqrt{M/rM_0}\ \exp(-\Delta U/kT + \sqrt{M/rM_0})\right\}/2\left\{1 + \exp(-\Delta U/kT\right.$

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Special Features of the Mechanism of the Limitation of Molecular Chains in the Polymerization Under the Action of Complex Catalysts

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$+ \sqrt{M/rM_0})\}^2$, where w is the part by weight, r is the number of monomeric members, and M_0 is the molecular weight of the monomer. This distribution can be represented by a curve whose dispersion coefficient $\delta M/M$ is given by equation (5) $\delta M/M \simeq 3kT/\Delta U$. At $\Delta U \simeq 10 - 15$ kcal/mole the dispersion coefficient is about 0.1, i.e. very small. Fig. 1 shows the molecular weight distribution in the polymer, Fig. 2 the kinetics of the polymerization of isoprene 1) with catalyst of $Al(iso\text{-}C_4H_9)_3$ and $TiCl_4$ at a ratio of 1 : 1, which was 24 h old; 2) with the same, but freshly prepared catalyst, and 3) with catalysts having an excess of triisobutyl aluminum. In the cases 2) and 3) the catalysts still contained free triisobutyl aluminum, transfer reactions occurred, and also fractions of low molecular weight developed. As opposed thereto, polymers having a very narrow distribution of molecular weights can be prepared by means of catalyst 1). There are 2 tables and 3 references: 1 Soviet, 1 Italian, and 1 French.

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83561

Special Features of the Mechanism of the Limitation of Molecular Chains in the Polymerization Under the Action of Complex Catalysts

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B004/B060

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev). Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of Macromolecular Compounds of the Academy of Sciences USSR)

PRESENTED: April 20, 1960, by V. G. Kargin, Academician

SUBMITTED: March 21, 1960

Card 4/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

To be submitted for the International Symposium on Macromolecular Chemistry, Montreal, Canada, 27 Jul -1 Aug 1961.

USSR

BIRSHTEYN, T. M., Institute of High Molecular Chemistry, Academy of Sciences USSR, Leningrad, jointly with KRIGBAUM, W. R., and KURATA, M., Duke University, Durham, N.C. - "Elasticity of cube lattice chain networks" (Group 2)

DOLADZIN, Boris A., and [illegible], A. A., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov - "Interaction of polyethylene with sulphur" (Groups 4-5)

KARGIN, Valentin A., Head, Laboratory of Colloidal Chemistry, Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow - "The formation of big crystal structures in polymers and their properties" (Group 2. Invited lecture)

KRETSEL', R. A., TOPCHIYEV, A. V., and [illegible], [illegible] A., Institute of Petroleum, Academy of Sciences USSR, Moscow - "Polymerization of some epoxy compounds" (Group 3-B)

MEDVEDEV, Sergey S., SPIRIN, YU. A., [illegible], A. A., POLYAKOV, D. K., and [illegible], A. R., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow - "Polymerization catalysed by lithium and lithium alkyl" (In German) (Group 3-B)

MARKEVICH, N. A., TOPCHIYEV, A. V., and POLAK, L. S., Institute of Petrochemical Synthesis, Academy of Sciences USSR, Moscow - "On the catalytic polymerization and radiochemistry of allylsilans" (Group 3-A)

PIOTROVSKIY, K. B., All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev, Leningrad - "Temperature effect on polymer structure in diene polymerization by alkali metals" (Group 3-B)

POREMSKIY, I. Ya., and [illegible], Ye. G., All-Union Scientific Research Institute of Synthetic Rubber, Leningrad - "Study of branching in regular isoprene polymers" (Group 1)

POSDNYYI, I. Ya. MOSEVITSKIY, M. [illegible] RAB[illegible], M. A., and PEROVNOV, A. [illegible] All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev, Leningrad - "Nature of molecular-weight distribution and properties of styrene-butadiene rubbers depending on polymerization conditions" (Group 3-A)

PRAVEDNIKOV, A. N., TELEGEV, Ye. [illegible], YING, Sho-k'ang, and KEVYSEV, S. S., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow - "Investigation of the mechanism of radiolysis of polymers containing quaternary atoms of carbon" (Group 4-5)

SEVECHOV, Viktor M., Institute of High Molecular Compounds of the Academy of Sciences USSR, Leningrad - "Stereo-regularity and optical anisotropy of macromolecules" (Group not specified)

USMANOV, Khamidan YU., and SUSHKEVICH, T. I., Academy of Sciences USSR, Tashkent, Uzbekistan - "The investigation of the cotton cellulose polydispersity according to the molecular weight" (Group not specified)

YERMOLOVA, N. S., Institute of Chemical Physics of the Academy of Sciences USSR, Moscow - "On the kinetics of formaldehyde polymerization and polyformaldehyde degradation" (Group 3-B)

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23761

S/190/61/003/006/004/019
B110/B216

11,2211 also 2209

AUTHORS: Bresler, S. Ye., Mosevitskiy, M. I., Poddubnyy, I. Ya., Shih kuan-i

TITLE: Specific chain limiting mechanism in heterogeneous polymerization

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 6, 1961, 820-827

TEXT: The authors observed inactivation of polymer isoprene chains by $Al(iso-C_4H_9)_3 + TiCl_4$ catalyst (Ref. 2: Zh. tekhn. fiziki, 28, 2487, 1958) to occur within fractions of a minute after the initiation. The ultracentrifugal molecular weight distribution showed little spread and was shifted to higher values ($\leq$ 200,000-300,000). This indicates a special, as yet unknown, mechanism of termination occurring within a certain small range of molecular weights. During its growth, in which the chain is unilaterally bound to the catalyst, the configuration entropy is presumably lowered. Termination, with a drop in free energy, then occurs on reaching certain molecular dimensions. The present paper treats the theory of the mechanism suggested. The increase or drop in configuration entropy

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occurring on detachment or attachment of the chain to the wall is proportional to the difference between the statistical sums of the free and bound chain. The number of possible configurations for z links is $\nu_z = \gamma(\gamma - 1)^{z-2} \simeq (\gamma - 1)^{z-1}$, where γ = coordination number. The configuration entropy is $S_z = k \cdot \ln \nu_z \simeq k(z - 1)\ln(\gamma - 1)$ (2). The configuration entropy of a unilaterally bound molecule was determined at: $S'_z = k \ln \nu'_z \simeq k(z - 1) \ln(\gamma - 1) - kz^{1/2}$ (7), with $\Delta S = k(3/2\pi)^{1/2} z^{1/2}$. The alkyl or haloalkyl aluminum group at the active end of the chain forms a bridge bond with energy 10-15 kcal/mole with the titanium halide of the catalyst. Termination and dissociation of the catalyst complex occur at this point. The rate constant is given by: $K = (kT/h) \cdot \exp[-(\Delta U^* - T\Delta S)/kT]$, where k = Boltzmann constant, h = Planck constant, ΔU^* = activation energy, ΔS = activation entropy. Since the rate constant K_1 of termination is $K_1 = 10^2 - 10^4$ sec^{-1}, the polymer chain must be repeatedly ruptured during dissociation. The molecular weight distribution reads:

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$$\frac{dw}{dM} = \frac{\frac{1}{2}\left(\frac{3M}{2\pi r M_0}\right)^{1/2} e^{-\frac{\Delta U}{RT} + \left(\frac{3M}{2\pi r M_0}\right)^{1/2}}}{\left(1 + e^{-\frac{\Delta U}{RT} + \left(\frac{3M}{2\pi r M_0}\right)^{1/2}}\right)^2}, \qquad (16)$$

The activation energy is $\Delta U = RT(3\overline{M}_p/2\pi r M_o)^{1/2}$ (18). A maximum in the molecular weight distribution curve was found at

$$\overline{M}_p = [2\pi r M_o(\Delta U)^2/3R^2]\cdot(1/T^2) \qquad (19),$$

$\overline{M}_p$ thus being proportional $1/T^2$. Isoprene was polymerized in pure state (I) and in the form of a 25 % solution (II) in hexane, octane, and benzene; butadiene in a 25 % solution (III) in octane. $TiCl_4 + Al(iso\text{-}C_4H_9)_3$ was used as catalyst. For (I), the ratio $TiCl_4$/monomer was 1:3000 and for (II) and (III) 1:800. The molecular weight and molecular weight distribution of polyisopropylene was measured sedimentometrically in octane, using an ultracentrifuge with a Svensson optical system and phase contrast plate at

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46,000 rpm, corresponding to 150,000 g, that of polybutadiene in a mixture of hexane and heptane (1:1) at concentrations between 0.05 and 0.25 %. For polyisoprene in octane at 20°C, the authors obtained $S_0 = 0.0447 \cdot M^{0.416}$ (S_0 = sedimentation constant). To exclude interfering mechanisms such as transfer and thermal inactivation, polymerization was performed at 20-30°C with a catalyst stored for several hours at room temperature and having a component ratio 1:1. The molecular weight distribution curves for polyisopropylene shown in Fig. 1,a and 6 show little spread and no low-molecular fractions. In accordance with Eq. (19), the polymerization temperature leads to an increased relative spread and lower molecular weights. The formation of a low-molecular polydisperse polymer ($M \simeq 160,000$) at 60°C is due to the socalled "thermal" factor. Free triisobutyl aluminum in the catalyst may also cause termination. The active centers are regenerated under the influence of unbound organo-aluminum compounds. The partial formation of low-molecular components on freshly prepared catalyst is probably due to the absence of maturation and the unification of active centers. This phenomenon is still under study. Provided the number of monomer units r (e.g. 4) of the growing macromolecule is known, the bond

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Specific chain limiting mechanism in...

energy of the growing macromolecule $\Delta U = 2.303[(3.5\cdot10^5)/(2\pi\cdot4.68)]^{1/2}$ $\simeq$17,000 cal/mole may be found by inserting the experimental M_p values (e.g. $\overline{M}_p \simeq 5\cdot10^5$ at 30°C) in (18). Similar relations were found in the case of polybutadiene (Fig. 3). There are 3 figures and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: Ref. 1: G. Natta, J. Polymer Sci., 34, 21, 1959.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev). Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds AS USSR)

SUBMITTED: December 21, 1960

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

28189

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B124/B110

15.8150

AUTHORS Bresler, S. Ye., Mosevitskiy, M. I., Poddubnyy, I. Ya., Shih Kuan-i

TITLE: Effect of the structure of the organoaluminum component of a complex catalyst on the character of isoprene polymerization

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 10, 1961, 1591-1596

TEXT: The authors studied the different catalytic activity of the polymerization centers in the interaction of β-$TiCl_3$ with $Al(iso\text{-}C_4H_9)_3$ on the one hand, and with $AlCl(iso\text{-}C_4H_9)_2$ on the other. They investigated the polymerization of pure isoprene (without a solvent) in the presence of catalysts with the initial components $TiCl_4$ and $Al(iso\text{-}C_4H_9)_3$. In Ref. 7 (Vysokomolek. soyed. 3, 820, 1961), the authors had described the methods of polymerization, the calculation of molecular weights and their distribution in the polymers. Results are shown in the Table. An exchange reaction on the active center of the growing polymer chain is assumed.

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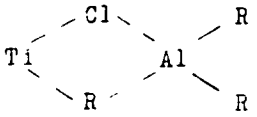
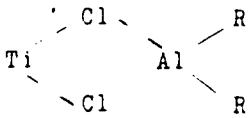
$Cl_2TiClRAlRP + AlR_3 \longrightarrow Cl_2TiClRAlR_2 + R_2AlP$, where P is a polymer radical. A new macromolecular starts growing, and the polymer chain with the Al atom at the end enters into solution. Polymer chains with Al atoms at the end are also formed in the spontaneous dissociation of the catalyst complex at the bridge bond. The dependence of the polymerization rate of isoprene on the composition of the organoaluminum compounds is explained as a consequence of its direct participation in the polymerization. This dependence particularly occurs at low temperatures at which the further reduction of titanium is inhibited by trialkyl aluminum. The different polymerization rates of isoprene may be a consequence of the different adsorption capacity of $Al(iso\text{-}C_4H_9)_3$ and $AlCl(iso\text{-}C_4H_9)_2$ on the surface of $\beta\text{-}TiCl_3$ or of the different electron density of the bonds Al C in the system $TiCl_3$ - AlR_3:



(I) and $TiCl_3$ - $AlClR_2$



(II), which

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Effect of the structure of ...

reduces the reactivity of II. It is, however, possible that both factors (concentration of active centers and reactivity of the active bond) jointly affect the results obtained. There are 1 table and 14 references: 3 Soviet and 8 non-Soviet. The two most recent references to English-language publications read as follows: G. Natta, G. Mazzanti, Tetrahedron 8, 86, 1960; B. Hargitay, L. Rodriguez, M. Miotto, J. Polymer Sci. 35, 559, 1959.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds of the AS USSR); Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev)

SUBMITTED: December 20, 1960

Card 3/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

PODDUBNYY, I.Ya.; GRECHANOVSKIY, V.A.; [illegible], A.I.; PODALINSKIY, A.V.

Hydrodynamic parameters and molecular weight distributions of divinylstyrene copolymers in an "ideal" solvent. Vysokom.soyd. 5 no.7:1042-1047 Jl '63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni S.V.Lebedeva.
(Styrene polymers)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

PODDUBNYY, I.Ya.; GRECHANOVSKIY, V.A.; MOSEVITSKIY, M.I.

Method for determining the molecular weight distribution of cis-1,4-polybutadienes from sedimentation data in an "ideal" solvent. Vysokom.soed. 5 no.7:1049-1053 Jl 63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni Lebedeva.
(Butadiene polymers) (Sedimentation analysis)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

BRESLER, S.Ye.; MOSEVITSKIY, M.I.; TIMKOVSKIY, A.L.

Irregular penetration of DNA into the cells during bacterial transformation. Dokl.AN SSSR 149 no.3:721-724 Mr '63. (MIRA 16:4)

1. Predstavleno akademikom A.N.Belozerskim.
(Nucleic acid metabolism) (Bacteria)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACCESSION NR: AP3003793 S/0190/63/005/007/1042/1048

AUTHORS: Poddubnyy, I. Ya.; Grechanovskiy, V. A.; Moscvitskiy, M. I.; Podalinskiy, A. V.

TITLE: Study of hydrodynamic parameters and molecular weight distributions of divinylstyrene copolymers in an "ideal" solvent

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 7, 1963, 1042-1048

TOPIC TAGS: intrinsic viscosity, divinyl styrene copolymer fraction, molecular weight distribution, sedimentation constant, diffusion coefficient, polarization interferometer

ABSTRACT: The sedimentation, diffusion, and intrinsic viscosity of divinylstyrene copolymer fractions in an ideal solvent (n-octane at 21C) were investigated on the basis of data determined from an ultracentrifuge using the rational method for molecular weight distribution. An independent method for calculating sedimentation constant and the diffusion coefficient is given by

$$M = \frac{s_0}{D_0} \cdot \frac{RT}{1 - \bar{v}\rho}.$$

Card 1/3

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACCESSION NR: AP3003793

The diffusion coefficient was measured by means of a polarization interferometer. In all experiments the solution concentration did not exceed 0.05%. Empirical laws expressing the sedimentation constant S, diffusion coefficient D, and intrinsic viscosity η were found as functions of the molecular weight M in the molecular weight region 5×10^4 to 8×10^5; these are

$$S_0 = 1{,}59 \cdot 10^{-3} M^{0.50},$$
$$D_0 = 1{,}49 \cdot 10^{-4} M^{-0.50}.$$

and

$$[\eta]_0 = 1{,}62 \cdot 10^{-3} M^{0.50}.$$

In the molecular weight theory of Flory-Mandelkern given by the equation

$$M = \frac{S_0 [\eta]^{1/2}}{\Phi^{1/2} p^{-1}} \cdot \frac{N \eta_0}{1 - v_2 \rho},$$

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ACCESSION NR: AP3003793

a value of 2.36×10^6 was found for the parameter $\Phi^{1/2} p^{-1}$.
The sedimentation constant of all fractions investigated was found to depend upon the entire range studied (0.1-0.4%). Expressions for S as a function of M have been determined for finite concentrations and shown to be applicable to molecular weight distribution calculations without extrapolating to infinite dilution.
Orig. art. has: 15 equations, 7 figures, and 5 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 30Dec61 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: OC, MA NO REF SOV: 008 OTHER: 003

Card 3/3

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

BRESLER, S.Ye.; DRABKINA, L.Ye.; MOSEVITSKIY, M.I.; TIMOFEYEV, A.L.

Molecular state of DNA of the T-2 bacteriophage in the process of its intracellular development. Dokl. AN SSSR 156 no. 4:947-950 Je '64. (MIRA 17:6)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. Predstavleno akademikom V.A.Engel'gardtom.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

BRESLER, S.Ye.; KRENEVA, R.A.; KUSHEV, V.V.; MOSEVITSKIY, M.I.

Participation of both strands of DNA in the transfer of genetic information. Biokhimiia 29 no.3:477-486 My-Je '64. (MIRA 18:4)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

[illegible] KRENE[illegible] MOSEVITSKIY, M.I.

Molecular mechanism of [illegible] reactor a transformation. [illegible] (M[illegible] 3[illegible])

[illegible] Institut vys[illegible] [illegible], Leningrad.
Submitted April [illegible]

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACCESSION NR: AP3003794 S/0190/63/005/007/1049/1053

AUTHORS: Poddubny*y, I. Ya.; Grechanovskiy, V. A.; Mosevitskiy, M. I.

TITLE: On the method for determining molecular weight distributions of cis-1,4-polybutadienes from sedimentation data in "ideal" solvent

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 7, 1963, 1049-1053

TOPIC TAGS: polybutadiene, complex catalyst, sedimentation constant, polymer, infinite dilution, hexane, heptane

ABSTRACT: The sedimentation characteristics of two cis-1,4-polybutadiene specimens in near-ideal solutions, obtained by polymerization of various complex catalysts, have been investigated. The first specimen, D-1, was obtained on complex catalyst $Al(iso\text{-}C_4H_9)_3 + TiI_4$ and the second, D-2, on $Al(iso\text{-}C_4H_9)_3 + CoCl_2$. IR spectroscopy indicates that both polymers contain 90% cis-1,4. The solvent was a 1:1 mixture (by volume) of hexane and heptane. It is shown that the concentration dependence of the sedimentation constant S(o) persists over a wide range in the vicinity of the Θ point. The sedimentation constant is determined as a function of the molecular weight M, thus, for D-1 $S|_{c=0}^{mg/ml} = 6{,}24\cdot10^{-3}M^{0.40}$; and for D-2, $S|_{c=0}^{mg/ml} = 4{,}44\cdot10^{-3}M^{0.44}$; $S|_{c=1}^{mg/ml} = 12{,}5\cdot10^{-3}M^{0.35}$; $S|_{c=1}^{mg/ml} = 5{,}51\cdot10^{-3}M^{0.40}$.

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACCESSION NR: AP3003794

An approximate evaluation of the molecular weight distribution of cis-1,4-polybutadiene has been made on the basis of sedimentation data at finite concentrations without extrapolating to infinite dilutions. "The authors are grateful to R. K. Tsvetkova for helping in the diffusion measurements." Orig. art. has: 5 formulas, 3 figures, and 1 table.

ASSOCIATION: Vsesoyuzny"y nauchno-issledovatel'skiy institut sinteticheskogo kauchuka, im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 30Dec61 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: OC,MT NO REF SOV: 008 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

VOLOVEN', V., master sporta, zasluzhennyy trener UkrSSR; MOSEYCHUK, M., master sporta, zasluzhennyy trener UkrSSR

"Tête-à-tête." Kry[illegible] no.7:4-5 Jl '64. (MIRA 18:1)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKO, F. A., kand. tekhn. nauk; RADZIYEVSKIY, V. A., kand. tekhn. nauk

Investigating the causes of the crosswise streak formation in lock-knot warp cloth and the ways of its elimination. Report No. 2: Ways of eliminating the formation of crosswise streaks in tricot cloth. Izv. vys. ucheb. zav.; tekh. leg. prom. no.4:119-125 '62. (MIRA 15:10)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti. Rekomendovana kafedroy tekhnologii trikotashnogo proizvodstva.

(Knitting, Machine)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

AGURIN, Aleksandr Petrovich; GOYKOLOV, Yevgeniy Fedorovich; GROMAKOV, Gavriil Petrovich; ZHOVNIROVSKIY, Nikolay Valentinovich; MOSEYENKOV, Andrey Abramovich; SEREBRENNIKOV, S.S., nauchnyy red.; RYAZANTSEVA, L.I., red. izd-va; NAUMOVA, G.D., tekhn. red.

[Safety measures in the construction and repair of industrial furnaces]Tekhnika bezopasnosti na stroitel'stve i remonte promyshlennykh pechei. [By]A.P.Agurin i dr. Moskva, Gosstroiizdat, 1962. 187 p. (MIRA 15:8)
(Furnaces--Construction) (Industrial safety)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

[illegible], B. I.

"On Some Resonance Phenomena in Systems With Distributed Parameters." Cand Phys-Mat Sci, Chair of Differential Equations, Kiev State Univ T. G. Shevchenko, Min Higher Education USSR, Kiev, 1954. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (1)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

KOSHYENKOV, B.I., aspirant.

Oscillations of systems with distributed parameters while passing through resonance. Stud.nauk.pratsi no.16:49-64 '55. (MLRA 10:2)
(Differential equations) (Vibration)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOV/124-57-4-4683

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 117 (USSR)

AUTHOR: Moseyenkov, B. I.

TITLE: Transverse Oscillation of a Bar Having a Dual Stiffness in a Rotational Transition Regime (Poperechnyye kolebaniya sterzhnya dvoyakoy zhestkosti v perekhodnom rezhime vrashcheniya)

PERIODICAL: Tr. 3-go Vses. matem. s"yezda, Vol I. Moscow, AN SSSR, 1956, pp 224-225

ABSTRACT: Bibliographic entry

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOV, B.I.

Double rigidity rod vibrations in transition rotating conditions [with summaries in Russian and English]. Prykl.mekh. 3 no.2:155-168 '57. (MLRA 10:9)

1. Kiivs'kiy derzhavniy universitet.
(Elastic rods and wires--Vibration)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOV, B.I. [Mosieienkov, B.I.]

Bending vibrations of a round rod under transient rotating conditions. Nauk. zap. Kyiv. un. 16 no.16:203-210 '57. (MIRA 13:3)
(Elastic rods and wires--Vibration)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSHYENKOV, B.I. [Moshienkov, B.I.] (Kiiv)

Lateral vibrations of a rod of dual rigidity under stationary rotation conditions [with summary in English]. Prikl. mekh. 4 no. 2:130-138 '58. (MIRA 11:8)

1. Kiiv'kiy derzhavniy universitet.
(Elastic rods and wires--Vibration)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

24(6) SOV/21-59-9-7/25

AUTHOR: Mosyeyenkov, B.I.

TITLE: On the Phenomenon of Resonance Under the Effect of Forces of the Weight of a Double Rigidity Rotating Rod

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9, 1959, pp 959-962 (USSR)

ABSTRACT: The paper considers the traverse oscillations of a double rigidity rod in a transitional mode of rotation under the effect of forces of its own weight when passing through the first critical number of angular velocity. The differential equation of such traverse oscillations of the rod under the presence of external resistance [Ref 2] with regard to the immovable system of coordinates $Oxyz$ is expressed as follows:

$$\frac{E}{m}\left(\frac{I_1+I_2}{2}\frac{\partial^4\eta}{\partial x^4}+\frac{I_1-I_2}{2}\frac{\partial^4\bar{\eta}}{\partial x^4}e^{2i\theta}\right)+\frac{\partial^2\eta}{\partial t^2}+\frac{\varkappa}{m}\frac{\partial\eta}{\partial t}=g$$

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOV/21-59-9-7/25

On the Phenomenon of Resonance Under the Effect of Forces of the Weight of a Double Rigidity Rotating Rod

on limiting conditions:
$\eta|_{x=0}=0,\ \eta_{xx}|_{x=0}=0,\ \eta|_{x=l}=0,\ \eta_{xx}|_{x=l}=0$

whereby E stands for modulus of Jung; m - linear density; I_1 and I_2-basic moments of inertion of the traverse section area; $\eta(x,t)=y(x,t)+iz(x,t)$ - function of complex meaning which determines the vector of displacement of the center of weight of the rod element in an immovable system of coordinates; $\bar{\eta}(x,t)=y(x,t)-iz(x,t)$ joined function of complex meaning from $\eta(x,t)$; $\frac{d}{dt}=\omega(\tau)$ angular velocity of rotation; $\tau=\varepsilon t$ - "slow time" $(\varepsilon>0)$; $\varkappa$ - coefficient of external rubbing; g - acceleration of the force of weight; l - length of the rod. For the construction of approximate solutions the asymptotic methods of integration of M.M. Krylov and M.M. Bogolyubov are used. These methods were worked out for the system of slowly changeable coefficients by Yu.O. Mytropol's'kyy

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOV/21-59-9-7/25

On the Phenomenon of Resonance Under the Effect of Forces of the Weight of a Double Rigidity Rotating Rod

[Ref 1]. The article contains the first approximate asymtotic solution

$$T = a_1 [e^{i(\varphi+\theta)} + \gamma_1(\tau) e^{-i(\varphi-\theta)}] + a_2 [e^{i(2\theta+\varphi_2)} + \gamma_2(\tau) e^{-i\varphi_2}]$$

and the first approximate systems of the equations

$$\frac{da_1}{dt} = -\frac{a_1}{2}\left[\frac{\varkappa}{mk} + \frac{d}{dt}(\ln P(\tau))\right],$$

$$\frac{d\varphi}{dt} = \mu_1(\tau),$$

$$\frac{da_2}{dt} = -\frac{a_2}{2}\left[\frac{\varkappa}{mk} + \frac{d}{dt}(\ln P_2(\tau))\right] - \frac{a\gamma_2(\tau)}{P_2(\tau) + 2\Delta(\tau)} \sin\varphi_2,$$

$$\frac{d\varphi_2}{dt} + \mu_2(\tau) - \Delta(\tau) - \frac{a\gamma_2(\tau)}{P_2(\tau) + 2\Delta(\tau)} \cdot \frac{1}{a_2} \cos\varphi_2;$$

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOV/21-59-9-7/25

On the Phenomenon of Resonance Under the Effect of Forces of the Weight of a Double Rigidity Rotating Rod

derived and analyzed for this case, taking into consideration the forces of external resistance. It is to be noted that the construction of the asymptotic solution in the first approximation for the equation (1) has been made without limitations with regard to the little importance of the irregularity of rigidities or the asymmetry of the rod's cross section, that is that the import moments of inertion of the cross section may considerably differ from one another. There are 2 Soviet references.

ASSOCIATION: Kyyivs'kyy derzhavnyy universytet (Kiyev State University)

PRESENTED: By I.Z. Shtokalo, Member AS of UkrSSR

SUBMITTED: February 20, 1959

Card 4/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOV, B. I.

"The research of the unsteady one-frequence regimes of oscillations in the systems with distributed parameters."

Paper presented at the Intl. Symposium on Nonlinear Vibrations, Kiev, USSR, 9-19 Sep 61

Kiev State University, Kiev, USSR.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

24.4100

S/044/62/000/007/018/100
C111/C333

AUTHORS: Mitropol's'kiy, Yu. O., Moskeyenkov, B. I.

TITLE: An investigation of instationary oscillating processes in systems with distributed parameters

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1962, 37-38, abstract 7B183. ("Visnyk Kyivs'k. un-tu", 1959, no. 2, ser. astron., matem. ta mekhan., no. 1, 3-17)

TEXT: By aid of the energetic method of Yu. A. Mitropol'skiy one investigates one-frequence processes in a number of concrete mechanical systems with distributed parameters. First of all the method itself is described: Instead of setting up strict equations one starts from the expressions for kinetic and potential energy and the generalised forces and sets up approximative equations for the determination of the phase and the amplitude of the oscillations. In order to obtain the equations of the first approximation one calculates the mean virtual energy which the forces of disturbance at a sine-shaped process would have carried out during a complete oscillation cycle on the virtual displacements which correspond to the variations of the amplitude and the phase. The obtained

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expression is expanded into a Fourier series. In this expansion the authors introduce the symbolic denotations $\frac{\delta \overline{W}}{\delta a}$ and $\frac{\delta \overline{W}}{\delta \psi}$ for the coefficients at the variations δa and $\delta \psi$ and obtain for the determination of $A_1(\tau, a, \psi)$, $B_1(\tau, a, \psi)$ the system

$$\left(\omega_1 - \frac{s}{r\nu}\right)\frac{\partial A}{\partial \psi} - 2\omega_1 a B_1 = \frac{2}{m_1}\frac{\delta \overline{W}}{\delta a},$$

$$\left(\omega_1 - \frac{s}{r}\nu\right) a \frac{\partial B_1}{\partial \psi} + 2\omega_1 A_1 = -\frac{a}{m_1}\frac{d(m_1\omega_1)}{d\tau} + \frac{2}{m_1 a}\frac{\delta W}{\delta \psi}.$$

The equations of the first approximation are

$$\frac{da}{dt} = -\frac{\varepsilon a}{2m_1\omega_1}\frac{d(m_1\omega_1)}{d\tau} + \frac{2\varepsilon}{m_1}\sum_{s=-\infty}^{\infty}\frac{(r\omega_1 - s\nu)\,\sigma_l\,\frac{\delta \overline{W}_s}{\delta a} + 2\omega_1\frac{\delta \overline{W}_s}{\delta \psi}\frac{1}{a}}{4\omega_1^2 - (r\omega_1 - s\nu)^2\,\sigma^2},$$

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$$\frac{d\psi}{dt} = \omega - \frac{s}{r}\nu + \frac{2\varepsilon}{m_1 a}\sum_{\sigma=-\infty}^{\infty}\frac{(r\omega_1 - s\nu)\sigma_1 \frac{\delta\overline{W}_\sigma}{\delta\psi}\frac{1}{a} - 2\omega_1\frac{\delta\overline{W}_\sigma}{\delta a}}{4\omega_1^2 - (r\omega_1 - s\nu)^2\sigma^2},$$

where

$$\delta\overline{W} = \sum_{\sigma=-\infty}^{\infty}\delta\overline{W}_\sigma = \sum_{\sigma=-\infty}^{\infty}\left\{\frac{\delta\overline{W}_\sigma}{\delta a}\delta a + \frac{\delta\overline{W}_\sigma}{\delta\psi}\delta\psi\right\}.$$

where $\delta\overline{W}_\sigma$ is the virtual energy averaged on the oscillation cycle of the σ-th term of the Fourier expansion of the force of disturbance. Analogously one can construct the equations of the second approximation. Considered is the case where there are only potential forces present. The application of the method on systems with distributed parameters is shown by the following examples: transverse oscillations of a bar of the length l, at the end of which there works an axial force;

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

An investigation of instationary . . . S/044/62/000/007/018/100
C111/C333

transverse oscillations of a log with flexible load and force of disturbance. One points to the fact that the described method can also be used for more complicated oscillation systems with distributed parameters.

[Abstracter's note: Complete translation.]

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

L 01469-66 EWT(d) IJP(c)

ACCESSION NR: AT5018550 UR/3156/63/001/001/0051/0059

AUTHOR: Mogeyenkov, B. I. 44,55

25
B+1

TITLE: On the algorithmic possibility of constructing formal solutions for several nonlinear mixed boundary value problems 44,55 16,44,55

SOURCE: AN UkrSSR. Institut matematiki. Seminar po matematicheskoy fizike i nelineynym kolebaniyam. Trudy, v. 1, no. 1, 1963, 51-59

TOPIC TAGS: boundary value problem, partial differential equation, perturbation theory

ABSTRACT: The case considered is when the boundary conditions are quasi-linear with respect to the unknown function, i. e., when the nonlinear functions which make up the unknown function, along with its partial derivatives and boundary conditions, are proportional to a small parameter. The equation studied has the following form

$$L^{\alpha}(u) = \varepsilon f\left(x, t, u, \frac{\partial^{r} u}{\partial x^{\alpha} \partial t^{\beta}}, \varepsilon\right)$$

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ACCESSION NR: AT5018550

The boundary conditions have the form

$$L^{j}_{si}(u^{(s)}) = \varepsilon \varphi_{si}\left(t, u^{(s)}, \frac{\partial^{l} u^{(s)}}{\partial x^{l}}, \varepsilon\right),$$

$$(j \leq 2k-1;\ s=1,2;\ i=1,2,\ldots,k;\ l \leq j)$$

The solution is sought by means of perturbation theory and expansion in orthogonal systems of fundamental functions. The solution is expressed in the form of a power series in the parameter. Orig. art. has: 17 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MA, GP

NO REF SOV: 000 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACCESSION NR: AT4017767 S/3037/63/003/000/0286/0304

AUTHOR: Moseyenkov, D. I. (USSR)

TITLE: Investigation of nonstationary, single-frequency, oscillation modes in systems with distributed parameters

SOURCE: International Symposium on Nonlinear Oscillations. Kiev, 1961. Prilozheniya metodov teorii nelineyny*kh kolebaniy k zadacham fiziki i tekhniki (Applying methods of the theory of nonlinear oscillations in problems of physics and technology); trudy* simpoziuma, v. 3. Kiev. Izd-vo AN UkrSSR, 1963, 286-304

TOPIC TAGS: automation, feedback, control system, control system oscillation, nonstationary oscillation, asymptotic integration

ABSTRACT: The theory of many modern machines of light construction and design requires an accurate dynamic calculation of the structural elements and of the individual assemblies in terms of their strength, with consideration of all the phenomena which may arise during the oscillatory process in these structural elements, assemblies and subassemblies. In the investigation of the nonstationary oscillations of this type of systems with distributed parameters (i.e., systems in which distributed masses are considered), great mathematical difficulties arise, since the corresponding differential equations with

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ACCESSION NR: AT4017767

partial derivatives (both linear and nonlinear) contain variable time-dependent factors. The author points out that, in as much as it is impossible to find general solutions for these equations in the majority of cases, it is of considerable interest to construct, by asymptotic methods, two-parameter families of partial solutions, which correspond to one-frequency modes of nonstationary oscillations in a definite form of dynamic equilibrium. The present paper deals with the asymptotic integration method and with the energetic interpretation of the first-approximation equations, elaborated by Yu. A. Mitropol'skiy (Yu. A. Mitropol'skiy. Nestatsionarny*ye protsessy* v nelineyny*kh kolebatel'ny*kh sistemakh. Izd-vo AN UkrSSR, 1955), used to facilitate the application of derived results to the solution of practical problems. The author briefly describes the use of this method in the investigation of one-frequency oscillatory modes in systems having N degrees of freedom. It is demonstrated that this method for the construction of equations of the first approximation, and also of higher approximations, permits a simple energetic interpretation. Analogously to the situation in systems with N degrees of freedom, in oscillatory systems with distributed parameters, described by partial differential equations, single-frequency oscillatory modes may develop, under certain conditions, in the corresponding forms of the dynamic equilibrium. Consequently, the proposed method is formally extended to oscillatory systems with an infinite number of degrees of freedom and, thus, to systems with distributed parameters in the study of their single-frequency nonstationary oscillatory modes.

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ACCESSION NR: AT4017767

In the concluding section of the paper, the author describes a number of practically important problems, investigated by himself and by Mitropol'skiy, in which a standard approach, based on the proposed method, was used. Among these problems are: 1) the problem of the transverse oscillations of a rod under the influence of a longitudinal sinusoidal force with variable frequency; 2) the problem of the transverse oscillations of a rod under the influence of a moving load and pulsating force; 3) the problem of the bending (buckling) oscillations of a rod of double rigidity in the transitional rotation mode; 4) the nonstationary oscillation mode of a turbine blade with consideration of the energy dissipation in the material and the bending-twisting oscillations of rods of nonsymmetrical section with consideration of internal friction. Orig. art. has: 7 figures and 77 formulas.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 28Feb64 ENCL: 00

SUB CODE: IE, MD NO REF SOV: 009 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MARTYNENKO, Vladimir Semenovich; MOSEYENKOV, B.I., dots., retsenzent; TERESHCHENKO, N.I., dots., retsenzent; KOSTENKO, Yu.I., red.

[Operational calculus] Operatsionnoe ischislenie. Kiev, Izd-vo Kievskogo univ., 1965. 184 p. (MIRA 18:3)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOV, B.I. [Moseienkov, B.I.]

Algorithm for constructing asymptotic approximations of solutions to some boundary value problems and boundary value problems with nonlinear boundary conditions. Dop. AN URSR no.11:1410-1414. '65. (MIRA 18:12)

1. Kiyevskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACC NR: AT6024828 (N) SOURCE CODE: UR/0000/66/000/000/0077/0094

AUTHOR: Moseyenkov, B. I.

ORG: none

TITLE: The construction of asymptotic approximations for solutions of the one-dimensional nonlinear boundary value problem in the study of nonstationary oscillations

SOURCE: AN UkrSSR. Institut matematiki. Matematicheskaya fizika (Mathematical physics). Kiev, Naukova dumka, 1966, 77-94

TOPIC TAGS: boundary value problem, approximation method, asymptotic solution, nonlinear oscillation

ABSTRACT: The quasi-wave equation

$$\frac{\partial^2 u}{\partial t^2} - b^2 \frac{\partial^2 u}{\partial x^2} = \varepsilon f\left(x, \tau, \theta, u, \frac{\partial u}{\partial x}, \frac{\partial u}{\partial t}, \frac{\partial^2 u}{\partial x^2}, \varepsilon\right)$$

is studied under the boundary conditions

$$\begin{cases} \dfrac{\partial u(0, t)}{\partial x} + hu(0, t) = \varepsilon F[\tau, \theta, u(0, t), \varepsilon], \\ \dfrac{\partial u(l, t)}{\partial x} + h_1 u(l, t) = \varepsilon \Phi[\tau, \theta, u(l, t), \varepsilon], \end{cases}$$

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACC NR: AT6024828

describing a simultaneous nonlinear boundary value problem of the non-autonomous type in the presence of small perturbations of a nonstationary character in an oscillatory system. An algorithm is constructed for the solution of such boundary value problems by the method of asymptotic approximations. The non-perturbed boundary value problem is first considered and first approximations are constructed, then extended to the perturbed system. Orig. art. has: 67 formulas.

SUB CODE: 12,20/ SUBM DATE: 17Dec65/ ORIG REF: 005

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

LESIK, N.P.; MOSEYENKOVA, I.G.; USACHEV, P.M.

Determining the location of fractures in the hydraulic process. Trudy VNII no.16:44-63 '58. (MIRA 11:12)
(Oil wells--Hydraulic fracturing)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOVA, I.G.

Measuring the electric conductivity of rock samples by the two-electrode method. Razved. i prom. geofiz. no.38:98-102 '60. (MIRA 14:3)

(Rocks—Electric properties)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOVA, I.G.; LESIK, N.P.; USACHEV, P.M.

Determining the location of hydraulic fractures by means of marker balls. Neft. khoz. 38 no.10:14-17 O '60. (MIRA 13:9)

(Oil wells--Hydraulic fracturing)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

AUTHOR: Moseyenkova, I. G.

S/169/63/000/002/124/127
D263/D307

TITLE: On the relation of the electric conductance of rocks with water and petroleum saturation, and some problems of the method and investigation

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 39, abstract 2D227 (Tr. Vses. neftegaz. n.-i. in-ta, 1962, no. 34, 233-264)

TEXT: Dependence of the saturation parameter of the rock, P_s, on the coefficient of saturation with water, K_w, is characterized by the empirical relation $P_s = K_w^{-n}$. For natural sands and sandstones n varies from 1.18 to 3.15; the most typical value of n for arenaceous rocks is 1.67. The complex relation between P_s and K_w is caused by differences in the clay contents and in the degrees of hydrophobic character of specimens, and also by the imperfection of the applied methods of electric measurements and study of the

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

On the relation of ... S/169/63/000/002/124/127
D263/D307

entire relationship $P_s = f(K_w)$. Use of Archi's relation $P_s = K_w^{-2}$, or Kotyakhov's $P_s = 0.5035\ K_w^{-2.1}$ is not recommended. It is pointed out that the relation obtained by the author agrees with the experimental results of several investigators (29 refs.). [Abstracter's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYENKOVA, I.G.; BOBELYUK, V.P.

Injecting petroleum in water producers as a means of water exclusion. Neft. khoz. 40 no.5:38-41 My '62. (MIRA 15:9)
(Oil field brines)
(Oil fields--Production methods)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

LO[illegible] I , V.[illegible], [illegible] [illegible]; [illegible], G.I., inz[illegible].

[illegible]ness of [illegible] [illegible] ipes fro[illegible] [illegible] [illegible].
[illegible] [illegible] [illegible] '61. [illegible]

[illegible]. Vs[illegible] [illegible] [illegible] institut.
(S[illegible])
([illegible])

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

IOKSHIN, V.A., kand.tekhn.nauk; MOSEYEV, G.I., inzh.

Cooling of wall attached radiational superheaters at the start-up of a boiler. Elek.sta. 32 no.6:7-12 Je '61. (MIRA 14:8)
(Superheaters--Cooling)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, G.I., kand. tekhn. nauk; PETROSYAN, R.A., kand. tekhn. nauk; SHMUKLER, B.I., kand. tekhn. nauk; KUROCHKINA, F.L., inzh.

Cooling conditions of a once-through type PK-33 boiler and steampipes of a 200 Mw. block. Teploenergetika 12 no.8:12-17 Ag '65. (MIRA 18:9)

1. Vsesoyuznyy teplotekhnicheskiy institut.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, G.I., kand.tekhn.nauk; MOKSHIN, V.A., kand.tekhn.nauk; [illegible], V.M., [illegible]

Study of an experimental double-light radiation superheater [illegible]. Elek. sta. 36 no.8:8-13 Ag '65.

(MIRA 18:8)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

L 31227-66 EWP(f)/T-2 WW

ACC NR: AP6022808 SOURCE CODE: UR/0096/66/000/003/0019/0024

AUTHOR: Livshits, M. A. (Engineer); Zolotavin, B. N. (Engineer); Chukvinskiy, M. M. (Engineer); Moseyev, G. I. (Candidate of technical sciences)

ORG: ORGRES, VTI-YuO

TITLE: Investigation of the applicability of direct-flow boiler PK-38 in a unit with turbine K-160-130 and reliability of its operation with sharp load changes

SOURCE: Teploenergetika, no. 3, 1966, 19-24

TOPIC TAGS: steam boiler, industrial heat exchanger/PK-38 steam boiler

ABSTRACT: Results are presented from experimental investigations of the dynamic characteristics as to steam consumption and temperature conditions of the PK-38 direct-flow boiler with gas as a fuel. When the automatic controls are working properly, load changes of up to 37% of nominal can be withstood, with stable heating surface. The heat exchanger surfaces may undergo changes of about 40°C from ordinary operating temperature. Load changes of up to 80t/hr per minute can be performed: without forcing, the time to 90% assigned load after sudden change is 65-75 sec; with double forcing for 30 sec, the time to 90% load is 40 sec. The unit can pick up a 35-Mw power system in 10-12 sec with no forcing, a 45-Mw system with forcing, without changing steam pressure over 10 bar. The injection used in the initial portion of the heating tract is effective in increasing the reaction rate, but causes rapid temperature fluctuations of the metal in the area, which should be further investigated. Orig. art. has: 6 figures and 1 table. [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 005 UDC: 621.181.91.001.45

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

L 11183-63 BDS

ACCESSION NR: AP3001550 S/0143/63/000/004/0115/0120

46

AUTHOR: Mosevev, I. V. (Candidate of technical sciences); Stepanchuk, V. F. (Candidate of technical sciences, Docent)

TITLE: Calculating the gas discharge from a tank

SOURCE: IVUZ. Energetika, no. 4, 1963, 115-120

TOPIC TAGS: gas-discharge formulas

ABSTRACT: Adiabatic discharge of gas is investigated mathematically for the following cases: (a) supercritical discharge with isothermal variation of parameters in the tank; (b) same, with adiabatic variation of parameters; (c) under-critical discharge with isothermal variation of parameters in the tank; (d) same, with adiabatic variation of parameters; (e) filling a tank of specified volume with gas and (f) filling a specified volume with gas under the conditions of under-critical discharge. Orig. art. has: 2 figures and 16 formulas.

ASSOCIATION: Belorusskiy politekhnicheskiy institut, Kafedra teploenergeticheskikh ustanovok (Belorussian Polytechnic Institute, Chair of Heat-Power Plants)

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MEKHELKO, F.V., otv. red.; KUZNETSOV, B.V., red.; MOSEYEV, I.V., red.; POLZIK, P.V., red.; SOLITERMAN, L.V., red.; TELESH, B.M., red.; TSENTSIPER, M.S., red.; YUR'YEVICH, G.S., red.

[Exchange of experience in production and technological techniques in power engineering] Obmen proizvodstvenno-tekhnicheskim opytom po promyshlennoi energetike. Minsk, 1965. 105 p. (MIPA 18:10)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy promyshlennosti. Belorusskoye otdeleniye.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, L. I.

GAL'PERIN, D.I. (g. Molotov oblastnoy) MOSEYEV, L.I. (g. Molotov oblastnoy)

Heat of swelling and heat of solution of nitrocellulose. Koll.zhur. 19 no.2:167-171 Mr-Ap '57. (MLRA 10:5)
(Nitrocellulose)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

KARABASH, A.G.; MOSEYEV, L.I.; KUZNETSOV, V.A.

Coextraction of trace elements in the extraction of chlorides with ether. Zhur.neorg.khim. 5 no.6:1358-1365 Je '60. (MIRA 13:7)
(Extraction (Chemistry)) (Chlorides)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOKOLOV, A.B.; MOSEYEV, L.I.; KARABASH, A.G.

Coextraction of traces of elements during the extraction of bromides with oxygen-containing organic solvents. Zhur.neorg.khim. 6 no.4:994-998 Ap '61. (MIRA 14:4)

(Extraction (Chemistry)) (Bromides) (Trace elements)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, L. I., KARABASH, A. S.

Coextraction of trace elements in the extraction of iodides by oxygen-containing organic solvents. Zhur. neorg. khim. 9 no.7:1720-1724 Jl '64. (MIRA 17:9)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, L.I.; KARABASH, A.G.

Simultaneous extraction of trace elements in the extraction of chlorides by oxygen-containing organic solvents. Zhur.neorg.khim. 6 no.8:1944-1950 Ag '61. (MIRA 14:8)
(Trace elements) (Solvents) (Extraction (Chemistry))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

ACCESSION NR: AP4041589

influence of the solvent on the coextraction was studied. It was found that ethers (with the exception of β,β'dichlorodiethyl ether) and isoamylacetate are best suitable for the purpose. Orig. art. has: 4 figures, no formulas, no tables.

ASSOCIATION: None

SUBMITTED: 09May63 DATE ACQ: 00 ENCL: 00

SUB CODE: GC, IC NO REF SOV: 005 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

KUZNETSOV, V.I.; MOSEYEV, L.I.

Effect of the value of ionic charges on extraction. Part 1 Extraction of salts of 1:1, 1:2, 1:3 composition. Radiokhimiya 6 no.3:280-286 '64. (MIRA 18:9)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

KUZNETSOV, V.I.; MOSEYEV, L.I.

Effect of the magnitude of ionic charges on extraction. Part 2: Concentrated and dispersed charges. Radiokhimiia 6 no.4:433-439 '64. (MIRA 18:4)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOV/124-57-8-9683

Translation from: Referativnyy zhurnal Mekhanika 1957, Nr 8 p 151

AUTHOR: Moseyev, V. F.

TITLE: The Investigation of a Wire-rod Mill for High-speed Continuous Drawing of a Low carbon Steel Wire (Issledovaniye stana dlya vysokoskorostnogo nepreryvnogo volocheniya nizkouglerodistoy stal'noy provoloki)

PERIODICAL: V sb.: Prokatnyye stany Nr 8. Moscow Mashgiz 1956, pp 27-37

ABSTRACT: Bibliographic entry

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, V.F., inzhener.

Reeler for continuous wire drawing. Vest. mash. 36 no.6: 23-24 Je '56. (MLRA 9:10)

(Wire)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, V.F., inzhener.

Studying a machine for rapid, continuous drawing of low-carbon steel wire. [Trudy] TSNIITMASH no.83:27-37 '56. (MLRA 10:9)
(Drawing (Metalwork)) (Mechanics)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

SOV/137-58-8-16975 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8 p 108 (USSR)

AUTHOR: Moseyev, V.F.

TITLE: An Investigation of Forces Brought to Bear in High-speed Drawing of Mild-steel Wire (Issledovaniye silovykh vozdeystviy pri vysokoskorostnom volochenii malouglerodistoy provoloki)

ABSTRACT: Author's dissertation for the degree of Candidate of Technical Sciences, presented to the Tsentr. n.-i. in-t tekhnol. i mashinostroit. (Central Scientific Research Institute of Technology and Machine Building), Moscow, 1958

An experimental and theoretical investigation of the process of high-speed drawing (D) is performed for the purpose of increasing the capacity of draw benches in the production of mild-steel wire (W). The investigation was conducted on an experimental 5/250 high-speed D bench with counterpull, designed by TsKBMM. It was found possible to D mild-steel W (coated with dry soap powder) at speeds (S) of 20-25 m/sec, instead of the 5-10 m/sec used hitherto. The effect of speed upon D pull, die temperature in the zone of contact with the W, strength properties of the drawn W, tool life and unit energy required, were investigated. It was found that as D S is increased from 1 to

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SOV/137-58-8-16975 D

An Investigation of Forces (cont.)

20 m/sec, D pull declines by an average of 13-15%. The temperature of the die in the zone of contact is 240-320°C at a D S of 20m/sec. The strength properties of mild-steel W drawn at high D S are higher than when drawing is at low S. As D S rises from 1 to 18 m/sec, the unit energy consumption diminishes by 17%. A continuous method of W D has been developed and introduced. Toward this end a block of original design was developed, which made it possible to remove coils of finished W without stopping the machine and hence to conduct a non-stop process of hard-wire D.

ASSOCIATION Tsentr. n.-i. in-t tekhnol. i mashinostroi. (Central Scientific Research Institute of Technology and Machine Building) Moscow

S.G

1. Steel wire--Production 2. Industrial production
Analysis

Card 2/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

S/133/62/000/003/008/009
A054/A127

AUTHORS: Moseyev, V. E., Candidate of Technical Sciences, Kerostelin, [illegible], Engineer

TITLE: New method of feeding technological lubricants into the deformation zone in drawing

PERIODICAL: Stal', no. 3, 1962, 280 - 281

TEXT: In the Draw Bench Laboratory of VNIIMETMASh the possibilities of high-pressure lubrication in the deformation zone of the wire were studied. A laboratory-type (5/250) draw bench was used in combination with a continuous-operation stationary drum coiler. The bench was equipped with a special wire holder. The lubricant was a mixture of spindle oil and some 30% kerosene; it was fed through a [illegible]-7/6000 (GKM-7/6000) type high-pressure hydrocompressor, (System L. F. Vereshchagin, capacity: 7 l/hour; working liquid pressure: up to 6,000 kg/cm^2). The drawing force was measured by a special device, in which the wire drawn actuates 3 rolls, two of which are fixed on a lever arm, stationary in respect of the block, while the third, fixed on a guide, moves along the instrument-axis. The opposite end of the guide is pressed to a coil-spring, which,

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under pressure, transmits the force imparted (through various elements) to tensimetric transmitters. The force exerted is indicated by the displacement of the guide. The 1.60 mm thick test wire was made of [illegible] 0 (St.0) steel, having a strength limit of 65 kg/cm^2. The drawing rate could be varied between 0 and 8 m/sec. The tests were carried out at a low drawing rate, while the lubrication pressure was gradually raised from 0 to 4,500 - 5,000 kg/cm^2. An increase in lubrication pressure reduced the drawing force required. With a 12° working cone of the die and a reduction of 25.4% the following values were obtained:

Lubrication pressure, kg/cm^2	0	1350	1950	3200	3800	4800
Drawing force, kg	71	65.5	61.5	60	57.5	57
drawing rate, m/sec	0.33	0.47	0.57	0.72	0.7[illegible]	[illegible].8

Analogous results were obtained with reductions of 35 and 17.8%. With a lubrication pressure of 4,000 - 5,000 kg/cm^2 the drawing force can thus be reduced by 18 - 20%. If the lubrication pressure were raised still higher (5,100 - 5,[illegible] kg/cm^2) liquid friction could be expected along the entire length of the deformation zone and there would be no contact at all between the wire and the instrument, as the value of the lubrication pressure would then exceed the value of the specific pressure of the metal at the beginning of the deformation zone. However, when lubrication pressures above 5,100 kg/cm^2 were applied, the wire ruptured

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

during deformation. The optimum lubrication pressure was about 400 - [illegible] kg/cm²; at such a pressure the drawing force was independent of the drawing rate (less than 5 m/sec). The maximum reduction, ensuring a smooth and stable process, was 35%. In drawing aluminum wires, the drawing force decreased more (25%) than of steel wires, due to the greater friction coefficient in this case. The new method increases the drawing rate and the service life of the tools. At VNIIMETMASH the tests are being continued to make the method suitable for industrial-scale use. There are 3 figures and 1 non-Soviet-bloc reference. The reference to the English-language publication reads as follows: G. M. Sturgeon, G. H. Tattersall: The Wire Industry, no. 312 (December), 1959.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

AUTHORS: Stoyanov, P. A., Mikhaylovskiy, G. A., Moseyev, V. V. SOV/48-23-4-3/21

TITLE: The Electron Microscope UEMB-100 With Double-lens Condenser (Elektronnyy mikroskop UEMB-100 s dvukhlinzovym kondensorom)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1959, Vol 23, Nr 4, pp 442 - 449 (USSR)

ABSTRACT: The electron microscope UEMB-100 shown in figure 1 is a universal instrument making it possible to carry out investigations in the penetration and reflection procedure, microdiffractions, etc. The electron accelerator with the two condenser lenses, objective, intermediate and projective lens secure work even in the case of objects that behave unstably in the electron beam of common electron microscopes; furthermore they make it possible to vary the magnification range from 250fold up to 150000fold. The instrument features a mechanical adjusting element, as well as a stigmator for the prevention of astigmatism. The electron accelerator features tension steps of 50, 75 and 100 kv and consists of a V-shaped tungsten cathode, a focusing electrode and an anode. Figure 3 shows the double-lens condenser consisting of a long-range focusing lens and a short-range focusing one. In the focusing plane of the short-range focusing lens there is an electronic source, which is

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

The Electron Microscope UEMB-100 With Double-lens Condenser SOV/12-23-4-1/21

depicted by the condenser in the object plane. With the aid of the stigmator, the image turns out very well. Investigations showed that the radius of the cathode tip, when not exceeding 12 μ, does not exert any influence upon the quality of the image. The object lens consists of three parts. The upper part is situated in the object chamber, which is made accessible by a valve and which contains an object table. The central part contains the pole shoes of the magnetic lens and the aperture stop. The lower part is the actual object lens tube and contains the stigmator and the selective stop. The object table is movable and permits a turning and tilting of the object. Next, the mechanical facilities of the instrument, serving for the adjustment of the various elements of the object lens are described. Also modes of employment of the object lens for reflecting and diffraction pictures are described. The intermediate and projecting lenses are housed in a block. Their auxiliary elements are described. Tube and three observation windows and the camera are contained in the lower part of the microscope. The vacuum system of the instrument consists of a mechanical vacuum pump RVN-20 and a diffusion pump TSVL-100. There are 6 figures and 5 references, 3 of which are Soviet.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

AUTHORS: Stoyanov, P. A., Moseyev, V. V. SOV/[illegible]

TITLE: Protection of Electron Microscopes From the Influence of External Magnetic Fields (Zashchita elektronnykh mikrosko[illegible] ot vozdeystviya vneshnikh magnitnykh poley)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 4, pp 511-518 (USSR)

ABSTRACT: In order to attain a high resolution in electron microscopes it is necessary to screen off the disturbance caused by external magnetic fields. In order to maintain the disturb[illegible] on a low level beforehand it will be necessary in futu[illegible] developments to keep the electric system of the microsc[illegible] separated from the instrument itself. The disturbing m[illegible] fields in the interior of the instrument are caused by [illegible] remanence of magnetism of nonmagnetic metallic parts [illegible] the lens coils. In order to ascertain the effect exerted by cylindrical screens an experimental arrangement was [illegible] out, as depicted by the scheme in figure 1. It consists [illegible] two electromagnetic coils generating a 50 cycle alternatin[illegible] field, the field strength of which is to be modifi[illegible] continuously. The screen to be investigated is [illegible]

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this field, and the field strength within and outside the cylindrical screen is determined by means of two measuring coils and a vacuum tube voltmeter LB9-2. Figure 2 shows a diagram in which the measuring results on three different cylindrical screens are graphically illustrated. The screening coefficient takes a different value with each screen, remains constant up to an external field strength of [illegible] Oe and rises steeply with increasing intensity of the external field. The measuring results for 5 cylindrical screens are given next. Here, the screening coefficient was determined along the screen axis. With all screens the curve rises steeply at the beginning and drops steeply at the end and most of them exhibit a central constant screening zone. Three further diagrams show the screening behavior on mechanically linked screens. There is a strong decline of the screening effect at the linkage points. The measuring results of screens open unilaterally are then given and finally, the measuring results on two screens that are fitted into each other. In one case, the two screens fit exactly into each other, while in the other they exhibit an air gap of a certain extent. The

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Protection of Electron Microscopes From the Influence of External Magnetic Fields SOV/48-27-4-17/2

performance of the [illegible], when they are sufficiently fitted into each other, [illegible] found to be satisfactory. [illegible] practical example is given at the end. There are 9 figures.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

MOSEYEV, V.V.

S/120/60/000/004/014/028
E032/E414

9.3140 (also 1003, 1140)

AUTHORS: Stoyanov, P.A., Mikhaylovskiy, G.A., Bertyn', A.R., Grishina, N.M. and Moseyev, V.V.

TITLE: The Universal High-Resolution Electron Microscope [illegible]-100 (UEMV-100)

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.4, pp.120-127

TEXT: A description is given of an electron microscope having a nominal resolution of 10 Å. It incorporates a focusing corrector, a deflecting system for work by reflection, a binocular viewer, a specially-designed vacuum chamber and various other features. This microscope presents an improved version of the microscope UEMV-100. The microscope column incorporates 5 lenses, namely 2 condensers, 1 objective, 1 intermediate lens and 1 projection lens. The aim of the modifications and improvements was to improve the electron-optical characteristics of the UEMV-100 microscope. In particular, a special focusing corrector was introduced between the second condenser and the objective. This corrector is in the form of two pairs of coils placed outside the vacuum chamber, one above the other. The coils are located in special grooves cut into the body and separated from the evacuated

Card 1/4

space by this walls. The coil windings are supplied with alternating current, consisting of symmetric rectangular pulses. Currents in the upper and lower pairs of coils are 180° out of phase so that the fields produced by these coils are in opposite directions. The focusing corrector serves to increase the aperture of the illuminating system (Dorsten et al, Ref.3). In the present case the aperture angle is increased in one plane. At the same time the depth of focus is reduced so that precise focusing of the image is easier to establish. The corrector is particularly convenient in the case of relatively small electron optical magnifications with subsequent high magnification of the photographs. When the corrector is switched on the image, if not accurately focused, divides into two parts. The conditions under which this "doubling" disappears correspond to precise focusing. The paper is concluded with a general description of various other modifications including a special specimen table which can be used to select any given part of the specimen even under overall

Card 2/4

magnifications of 1.5×10^6; a binocular viewing arrangement having a magnification of x6 and a relatively large field of view (diameter 28 mm), and the pumping system of the microscope. Acknowledgments are expressed to Yu.M.Kushnir for assistance. There are 11 figures and 5 references: 3 Soviet and 2 non-Soviet.

SUBMITTED: July 4, 1959

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

STOYANOV, P.A.; MOSEYEV, V.V.

Alignment of the lighting system of an electronic microscope using electrostatic magnetic fields. Radiotekh. i elektron. 8 no.7: 1169-1178 Jl '63. (MIRA 16:8)

(Electron microscope)

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L 36556-66 EWT(1) IJP(c)

ACC NR: AP6015763 (A,N) SOURCE CODE: UR/0048/66/030/005/0774/0777

63
B

AUTHOR: Stoyanov, P. A.; Moseyev, V. V.; Krasnov, I. V.

ORG: none

TITLE: Magnetic electrostatic deflecting system for an electron microscope illuminating assembly /Report, Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 774-777

TOPIC TAGS: electron microscope, electric field, magnetic field, electron optics, prism, aberration

ABSTRACT: The aberrations of electrostatic and magnetic deflecting systems have been investigated experimentally in order to evaluate their possibilities for use as deflecting systems in high resolution electron microscopes. The experiments were performed by deflecting beams of small circular cross section through different angles up to about 3° and recording the cross section shape of the deflected beam. A number of photographs of the deflected beams are presented. Double deflecting systems (deflection of the beam first in one direction and then in the opposite direction) with total deflections up to about 1.5° were tested. The purely electrostatic systems had considerable astigmatism, but when one of the deflectors was a magnetic system with astigmatism corrected, as proposed by P.A.Stoyanov and V.V.Moseyev (Radiotekhnika i elek-

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ACC NR: AP6015763

tronika, 8, No. 7, 1169 (1963)) and by P.A.Stoyanov (Izv. AN SSSR. Ser. fiz., 27, 1239 (1963)), the resultant astigmatism was small and could be corrected in the second condensing lens. Corrected magnetic deflectors were tested at deflection angles up to and slightly beyond 3°. The corrected systems showed practically no third order aberrations, although small fifth order aberrations were perceptible at the largest deflections. The magnetic deflectors showed considerable coma when they were mounted too close to the iron wall of the housing, but it proved to be possible to correct this. It is concluded that a corrected magnetic deflecting system can be employed to achieve dark field illumination without significant deterioration of the resolving power of the microscope. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 003

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135310019-7

L 08094-67 EWT(1) IJP(c)

ACC NR: AP6029902 SOURCE CODE: UR/0413/66/000/015/0064/0064

34
B

INVENTOR: Stoyanov, P. A.; Moseyev, V. V.; Gribkova, K. M.

ORG: none

TITLE: Electron microscope lens. Class 21, No. 184368

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 64

TOPIC TAGS: electromagnetic lens, electron microscope, magnetic circuit

ABSTRACT: The proposed electron microscope lens contains two magnetic circuits, a nonmagnetic spacer disk, a pole terminal, an object mounting and an object holder

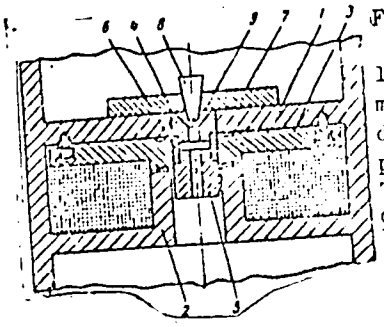

Fig. 1. Microscope lens

1 - Upper magnetic circuit; 2 - lower magnetic circuit; 3 - nonmagnetic spacer disk; 4 - upper pole piece; 5 - lower pole piece; 6 - nonmagnetic insertion; 7 - object mounting; 8 - object holder; 9 - object.

UDC: 621.385-833:537.533.35

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ACC NR: AP6029902

(see Fig. 1). The pole terminal, which consists of two pole pieces coupled through a nonmagnetic insertion, is placed in a channel formed by the magnetic circuits and the nonmagnetic spacer disk. To increase the vibration stability of the electron microscope, the nonmagnetic spacer disk is attached to the magnetic circuit, and the latter, in turn, is rigidly connected to the object holder. Orig. art. has: 1 figure. [JR]

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L 08094-67 EWT(1) IJP(c)

ACC NR: AP6029902 SOURCE CODE: UR/0413/66/000/015/0064/0064

34
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INVENTOR: Stoyanov, P. A.; Moseyev, V. V.; Gribkova, K. M.

ORG: none

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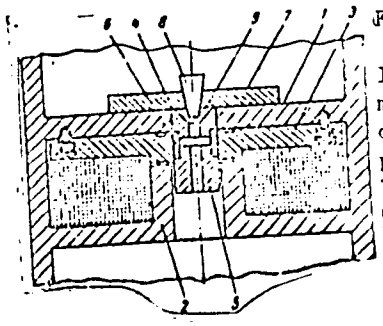

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

MOSEYEV, V.Ye.

CA

22

Devonian oil in the Kama River basin. V. E. Moseev. *Neftyanoe Khozyaistvo* 24, No. 1, 7-12(1946).—Oil recently struck in the Middle Devonian near Severokamsk flows from the well at the rate of 192 tons per day. Its properties are: sp. gr. 0.8395, Engler viscosity 1.63°, solidifying point below 20°, S 0.3%, excise resins 14%, C 2.97%, paraffin wax 2.7%, distn. (Engler) 100° 14%, 200° 28%, 300° 53%. B. C. Metzner

COMMON ELEMENTS

COMMON VARIABLES INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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MOSEYEV, V.YE.

3(5) PHASE I BOOK EXPLOITATION SOV/2302

Akademiya nauk Ukrainskoy SSR. Institut geologii poleznykh iskopayemykh

Problema migratsii nefti i formirovaniya neftyanykh i gazovykh skopleniy; materialy L'vovskoy diskussii 8-12 maya 1957 g. (Problem of Oil Migration and the Formation of Oil and Gas Accumulations; Materials of the Discussion Held in L'vov, May 8-12, 1957) Moscow, Gostoptekhizdat, 1959. 422 p. 1,100 copies printed.

Eds.: V. B. Porfir'yev, Academician of the Ukrainian SSR Academy of Sciences, and I. O. Brod, Professor; Exec. Ed.: P. R. Yershov; Tech. Ed.: A.S. Polosina; Editorial Board: I.O. Brod, Professor, N.R. Ladyzhenskiy, and V.B. Porfir'yev, Academician of the Ukrainian Academy of Sciences.

PURPOSE: This collection of articles is intended for a wide range of geologists and research workers interested in oil problems.

COVERAGE: Articles contained in this book deal with the problems of migration and accumulation of oil and gas. These problems were discussed in May 1957 at L'vov State University im. I. Franko at a meeting organized jointly by the Institute of Geology and Mineral Resources, Academy of Sciences of the USSR, the Department of Geology and Oil Exploration of the L'vov Polytechnic Institute, and the L'vov Geological Society. Theories on the origin of petroleum deposits and the conditions surrounding their occurrence are treated. There are 327 references: 232 Soviet, 86 English, 5 French, and 4 German.

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TSEDOVA, A.N.; MOSEYEVA, G.I.

Preplanting treatment of the tulbotubers of gladioluses. Nauch. dokl. vys. shkoly; biol. nauki no.3:115-118 '60. (MIRA 13:8)

1. Rekomendovana Botanicheskim sadom Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(Gladiolus--Diseases and pests) (Potassium permaganate)
(Granosan)

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