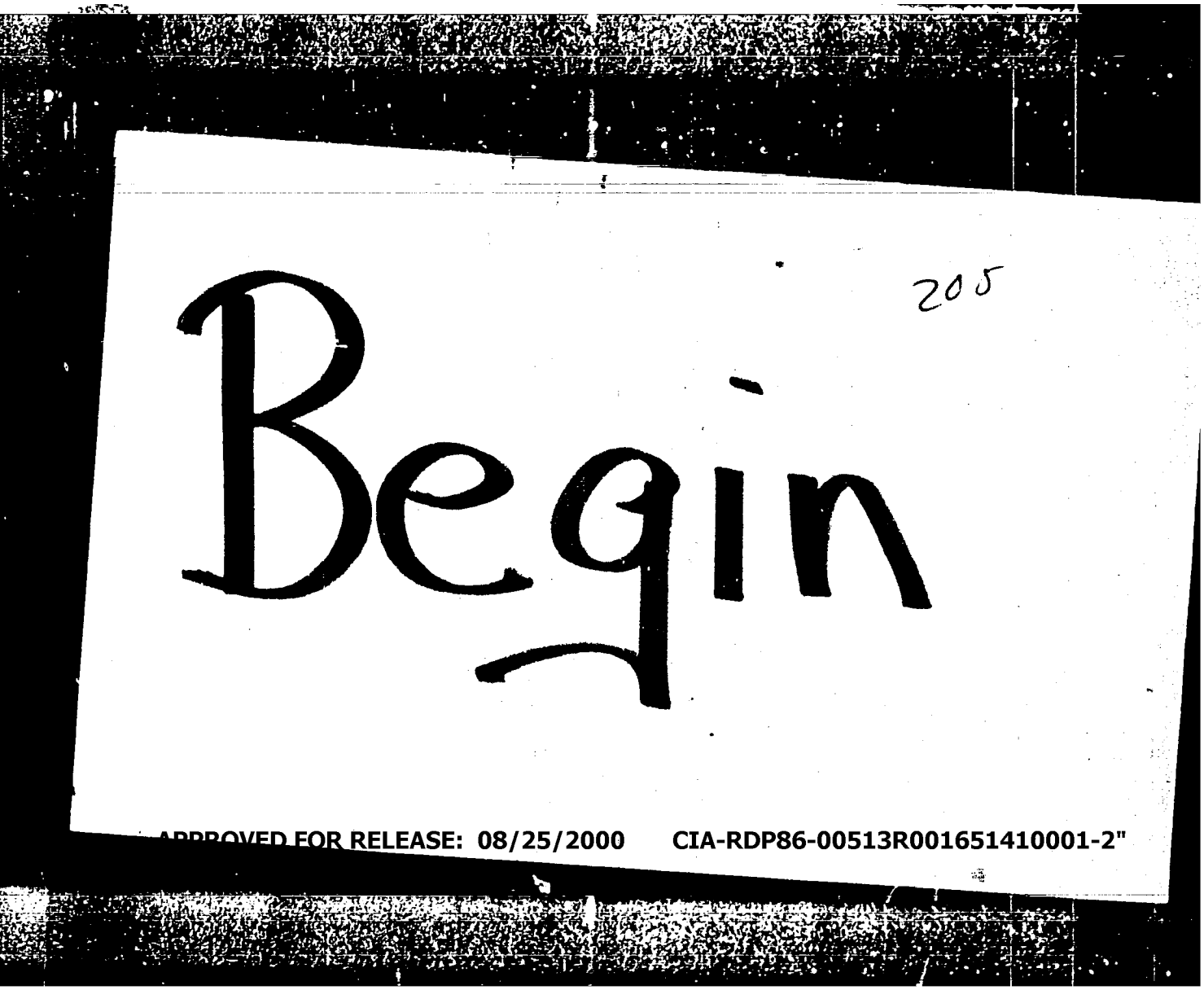


REEL
530
SLONIM, E. YA.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651410001-2

SLONIM, E.Ya.

Use of concreting trestles in constructing the Bratsk Hydroelectric Power Station. Mat.po stal'.konst. no.5:137-156 '59. (MIRA 13:8)
(Bratsk Hydroelectric Power Station)
(Concrete construction--Equipment and supplies)

SLONIM, E.Ya.

Using electronic calculating machines to work out bridge designs. Transp. stroi. 11 no.8:38-40 Ag '61. (MIRA 14:9)

1. Glavnyy konstruktor Otdela mostov Gosudarstvennogo proyektnogo instituta Proyektstal'konstruktsiya.
(Bridges--Design)
(Electronic calculating machines)

SLONIM, E.Ya., inzh.

Suspended crossing with latticed cable-suspended girders on the Bukhara - Ural Mountain Region gas pipeline. Stroi. truboprov. 7 no.10:5-7 O '62. (MIRA 15:11)

1. Gosudarstvennyy institut po proyektirovaniyu, issledovaniya i ispytaniyu stal'nykh konstruktsiy i mostov, Moskva.

(Gas, Natural--Pipelines)

SUCHKOVA, T.I.; ZIONIM, F.L. (Moskva)

Isolated lymphogranulomatosis of the stomach and the small intestines. Arkh. pat. 27 no.3:80-82 '65.

(MIRA 18:5)

1. Kafedra patologicheskoy anatomii (zav. - chlen-korrespondent AMN SSSR prof. A.I. Strukov) i kafedra gospital'noy terapii (zav. - deystvetel'nyy chlen AMN SSSR prof. A.L. Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

2554. **Mutual solubility of polymers. I. Physico-mechanical properties of rubbers obtained from various combinations of rubbers of differing chemical composition.** N. F. KOSHEKAYA and G. L. SLONIM. *Zhur. Fiz. Khim.*, 1956, 30, 1629–30. The work was carried out on natural rubber, SKB (butadiene), SKB-30 and SKS-10 (butadieno-styrene), and SKN-18 (butadiene acrylonitrile) rubber. It is found that a blend of rubbers (or any other amorphous polymers) may be regarded as a mutual solution of two liquid phases, subject to thermodynamic laws. The blends studied fall into two groups according to the character of the dependence of the mechanical properties upon the ratio of the unvulcanised rubbers. It is suggested that the anomalies observed in the properties of the blends based on SKS-30 and SKB is governed by the microirregularity of the two-phase structure of such vulcanised rubbers. It is shown that the properties of the blends are determined mainly by the behaviour of the unvulcanised rubbers themselves, and not by the added ingredients. The compatibility of two polymers must be regarded from two angles. The macroscopic compatibility may be achieved practically at all times, provided only that the polymer may be put into the fluid state. Compatibility in micro-regions, i.e. the

N.F. KONSKAYA and G.L. SLONIMSKII

mutual solubility of the polymers, is determined by their thermodynamic properties and may not coincide with the macro-compatibility. The reason for the divergence of macro- and micro-compatibility is the chain structure of the polymer molecules, and the related high viscosity of the polymers with high mobility of small portions of the flexible chain molecules. There are 9 references. 30/7.74

SLONIM, I.I.

Nuclear magnetic resonance in high polymers. Analele chimie 18 no.1: 29-81 Ja-Mr '63.

IRUZHININ, V.; SLONIM, I. Ya

[Across the lakes of our country] Po ozeram nashei rodiny. Moskva, Gos. izd-vo detskoi lit-ry Ministerstva prosveshcheniia RSFSR, 1952. 104 p. (MLRA 7:7)
(Lakes) (Physical geography)

SLONIM, I.Ya.

Origin of the names of the cities Demidov, Tutayev and Chekalin. Izv. Vses. Geog. ob-va 89 no.2:149-150 Mr-Ap '57. (MLRA 10:6)
(Names, Geographical)

Slonim, I. Ya. Cand Chem Sci

Dissertation: "Diffusion of Vinyl Polymers."

2[illegible] November 4[illegible]

Military Academy of Chemical Defense imeni K. Ye. Voroshilov.

SO Vechernyaya Moskva
Sum 71

CA SLONIM, I. YA.

2

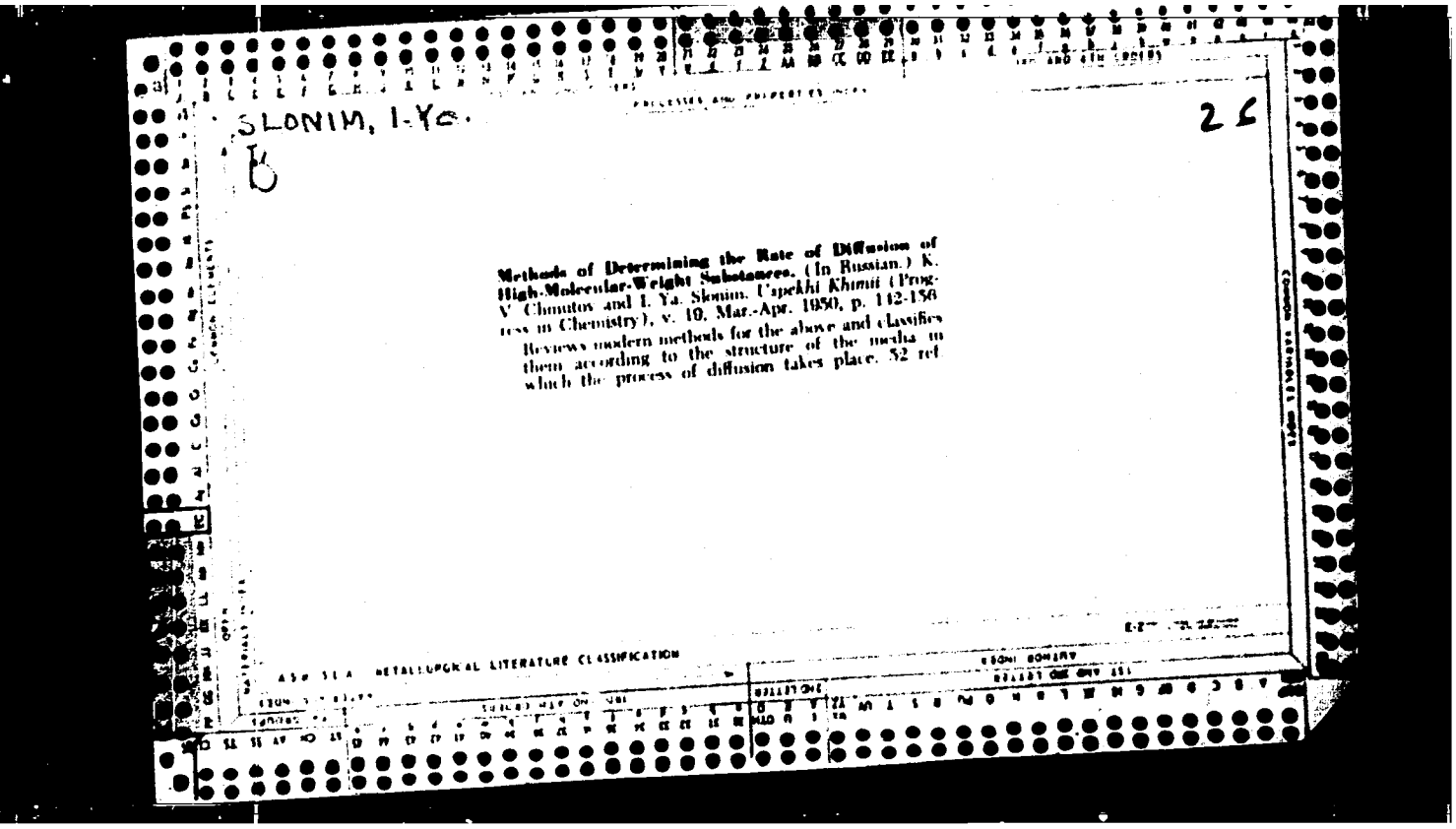
Temperature dependence of the diffusion coefficient of vinyl polymers. K. V. Chmutov and I. Ya. Slonim. *Doklady Akad. Nauk S.S.S.R.* 69, 223-5(1949).—The diffusion coeff. D of polyvinyl acetate into AcOEt, and of [illegible] polystyrene into PhMe, shows the paradoxical be-havior of first decreasing with rising temp., passing through

a sharp singular min. (at 37° and 68°, resp.), then in-creasing with further rising temp. This behavior is re-versible. The same phenomenon was observed with both polystyrene in PhMe (min. at 85°), polyvinyl acetate in C_6H_6, and polyvinyl alc. in H_2O. For the latter system, D first rises to a max. at about 75°, then falls to a min. at about 85-90°. No min. is observed for polyisobutylene in isooctane. The D(T) curve with max. followed by a singular min. and subsequent rise, is at variance with Einstein's equation $D\eta/T$ = const. This newly dis-covered anomaly casts doubt on detns. of the mol. wt. of linear polymers from diffusion coeffs., as such detns. are often made at an arbitrarily chosen temp. The anomaly is attributed to changes of rotation of links in the polymer chains. Roughly, the exptl. temp. of the min. corresponds to the temp. of vitrification of the polymer; the absence of an observable min. in the case of polyisobutylene cor-responds to its low vitrification temp. (−74°). Of the 2 possible mechanisms of vitrification advanced by Kargin and Slonimskii (C.A. 43, 1027i), one due to interaction between segments of different mols., the other to an in-crease of the effective rigidity of the chains, the 2nd mech-anism is evidently prevalent in vinyl polymers. N. Thon

CA SLONIM, I. Ya.

2

The molecular weight of proteins (Molecular weights of proteins of the prolamid type and their hydrolysis products). K. T Poroshin and I. Ya. Slonim (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow).—*Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 519–30.—From measurements of the viscosity and of the diffusion coeff. *D* of 0.15–0.20% solns. of the protein in a buffer of NaCl 10, KCl 1.0, K_2HPO_4 5.0 g./l. H_2O, the mol. wt. $M = 3.6RT \times 10^{-16}/D[f/f_0]^2V$ (where V = partial sp. vol. of the solute, f/f_0 = ratio of the friction coeff. of the ellipsoid-shaped mol. with the axis ratio b/a and of a spherical mol. of the same vol.) was detd., for coarinic acid, to 412,000, and for a protein from the castor-oil plant, to 38,000; the f/f_0 and b/a values are, resp., 1.58 and 10.2; 1.88 and 16.6, i.e. the mols. are very markedly elongated. Despite the very great difference of the mol. wts., the products of primary hydrolysis have very close mol. wts., M = 750 and 950, resp.; the b/a ratios for the hydrolysis products are 3.2 and 4.0, resp., i.e. the products are closer to spherical. N. Thon



SLONIM, I. Ya.

B

2 C

Methods of Determining the Rate of Diffusion of High-Molecular-Weight Substances. (In Russian.) K. V. Chmutov and I. Ya. Slonim. *Uspekhi Khimii* (Progress in Chemistry), v. 19, Mar.-Apr. 1950, p. 142-156

Reviews modern methods for the above and classifies them according to the structure of the media in which the process of diffusion takes place. 52 ref

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

Diffusion of linear polymers. I. Measurement of diffusion coefficients. K. V. Chmutov and I. Ya. Shunin. *Zhur. Fiz. Khim.* 24, 1288-9(1950).—An app. is described for measuring diffusion coeffs. D by photographic recording of the distortion of the graduations of a scale due to the variation in n. The diffusion cell presents novel features: differences in n down to 5×10^{-6} can be measured from room temp. up to 80-90°. Water or org. solvents can be used. A thin and neat boundary layer between solvent and soln. is obtained at zero time. The finite width Δ of this layer leads to a modification of the value of D as obtained by the simple theory: $D' = D(1 + \Delta^2/2Dt)$, where t is the time. Thus if Δ is estd. at 0.2 mm., the time necessary for getting precision to within 2% when $D = 10^{-7}$ sq. cm./sec. is larger than 26,000 sec. for a given expt. A purely statistical method of treating the exptl. data is proposed: no curve-fitting or planimetry is required. No example is given.

Michel Boudart

CA ELDIN, I. Ya.

Diffusion of linear polymers. II. Temperature dependence of the diffusion coefficient of vinyl polymers. I. Ya. Elmin and K. V. Chmutov. *Zhur. Fiz. Khim.* 29, 200-204(1961); cf. *C.A.* 48, 4116i.—With the app. described earlier (*loc. cit.*), the diffusion coeff. *D*, of vinyl polymers, was measured between 20 and 80°. The systems studied were polystyrene-ethylbenzene (I), polystyrene-Et acetate, polyvinyl acetate-Et acetate, polyvinyl alc.-water, polyisobutene-isooctane. An advantage of the app. used is that it does not limit the choice of solvent or the temp. range. Typical results for I are *D* = 1.0, 1.0, 0.85, 0.6, 0.9, 1.3 × 10^{-7} sq. cm./sec. at 25, 33, 43, 61, 65, 78,° resp. The data at low temp. are irreproducible after heat-treatment. The changes responsible for the min. in *D* at about 60° are thus reversible. Minima are also observed for the other systems, although some are less marked. This anomalous temp. of *D* is contrary to Einstein's law and is explained by a change of state of the mols. of solute. Polymerization is excluded; aggregation is improbable. A change of shape of the mols. suggests itself. Indeed the temp. at which *D* is min. is close to the glass temp. for each polymer. This near-equality establishes a bridge between the properties of the polymer in bulk and of its mols. in soln. and militates against the identification of polymer glass transformations with changes of the 2nd kind. The freezing-in is a mol. property aword with the appearance of long-range order in the polymer chain.

Michel Brandart

68316

24.3200

AUTHOR: Slonim, I.Ya. SOV/51-8-1-16/40

TITLE: Determination of Particle Size from Scattering of Light. I. Formulae and Nomograms for Calculation of Particle Radius from the Optical Density and from Intensity of Scattered Light.

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 98-108 (USSR)

ABSTRACT: Shifrin's theory of scattering of light (Ref 1) is used to deduce formulae and to construct nomograms (Figs 2-5) which can be used to determined particle size in disperse systems in which electrical properties of the particles differ only a little from the corresponding properties of the medium. The paper is entirely theoretical. There are 5 figures, 1 table and 13 references, 5 of which are Soviet, 5 English, 1 German and 2 translations from Russian into English. (?)

SUBMITTED: April 28, 1959

Card 1/1

5.3831
24.3900

68890

S/051/60/008/02/017/036
E201/E391

AUTHORS: Slonim, I.Ya., Fodiman, N.M. and Ustinova, Z.M.

TITLE: Determination o` Particle Size from Scattering of Light
II. Determinat on of Dimensions of Polychloroprene Latex
Using Optical and Electron Microscopic Methods

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2,
pp 243 - 246 (USSR)

ABSTRACT: In Part I (Ref 1) Slonin deduced formulae for calculation of particle radii from the results of light scattering in a monodisperse system (all particles are of the same size). If these formulae are plotted to a polydisperse system (particles of different sizes) a certain effective mean value of the radius (a) is obtained; it represents a mono-disperse system scattering the light in the same way as the polydisperse system under investigation. Two forms of the mean radius are employed: a mean-number radius a_n and a mean-weight radius a_w:

$$a_n = \left(\frac{\Sigma \nu_i a_i^3}{\Sigma \nu_i} \right)^{1/3} \qquad (1)$$

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Determination of Particle Size from Scattering of Light II. Determination of Dimensions of Polychloroprene Latex Using Optical and Electron Microscopic Methods

and

$$a_w = \left(\frac{\Sigma \nu_i a_i^6}{\Sigma \nu_i a_i^3} \right)^{1/3} \qquad (2)$$

where ν_i is a number of particles with a radius a_i. For particles whose dimensions are small compared with the wavelength of scattered light, the Rayleigh equation holds and measurements of scattering of light yield the value a_w. If the particle dimensions exceed 0.1 λ the mean particle radius, found from measurements of the optical density (turbidity), is given by:

Card 4/

Determination of Particle Size from Scattering of Light II. Determination of Dimensions of Polychloroprene Latex Using Optical and Electron Microscopic Methods

$$a_{\varphi} = \left(\frac{\sum \nu_i a_i^{n_\varphi + 3}}{\sum \nu_i a_i^3} \right)^{\frac{1}{n_\varphi}} . \qquad (10)$$

The mean particle radius found from the intensity of scattering of light at an angle of 45° is:

$$a_I = \left(\frac{\sum \nu_i a_i^{n_\psi + 3}}{\sum \nu_i a_i^3} \right)^{\frac{1}{n_\psi}} . \qquad (11)$$

Card 3/6

Determination of Particle Size from Scattering of Light II. Determination of Dimensions of Polychloroprene Latex Using Optical and Electron Microscopic Methods

For small particles $n_\varphi = n_\psi = 3$ and Eqs (10) and (11) become identical with Eq (2) ($a_\tau = a_I = a_w$). For large particles n_φ and n_ψ are both less than 3. To calculate them we can use the expressions:

$$n_\varphi = \frac{\Delta[\lg \varphi(z)]}{\Delta \lg z} \qquad (12)$$

and

$$n_\psi = \frac{\Delta[\lg \psi(z)]}{\Delta \lg z} \; . \qquad (13)$$

The values of n_φ and n_ψ decrease with increase of z ($z = 8\pi a/\lambda$): for example, when $z = 2$, $n_\varphi = 2.81$

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Determination of Particle Size from Scattering of Light II. Determination of Dimensions of Polychloroprene Latex Using Optical and Electron Microscopic Methods

and $n_\psi = 2.95$ and when $z = 8$, $n_\varphi = 1.33$ and $n_\psi = 2.04$. Throughout the range $z = 2\text{-}8$, $n_\psi > n_\varphi$. The formulae quoted above were used to measure the dimensions of globules of polychoroprene latex. To measure scattering of light the latex (with dry residue of 43.5%) was diluted and a 1% solution of ammonia was added to avoid coagulation. Optical density was measured for dilutions from 1:3333 to 1:10000 using a photoelectrocalorimeter-nephelometer FEK-N-54 with 5 cm long cells, employing light of four wavelengths. To determine the intensity of light scattered at an angle of 45° a nephelometer NFM was used on solutions diluted in the ratios from 1:5000 to 1:40000. Electron micrographs of the latex were obtained with an electrostatic Zeiss microscope D-2, with a magnification of 8000. Dimensions of the globules in the electron micrographs were measured with a special microscope, MIR-12. The results

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68890
S/051/60/008/02/017/036
E201/E391

Determination of Particle Size from Scattering of Light II. Determination of Dimensions of Polychloroprene Latex Using Optical and Electron Microscopic Methods

are summarized in Figure 2, where the four arrows represent the mean radii a_n and a_w obtained with an electron microscope, and the values a_η and a_I found optically. In agreement with theory, $a_n < a_\eta < a_I < a_w$. The results show that determination of the particle size of latex from light scattering, using formulae deduced for particles with optical properties differing only slightly from those of the surrounding medium, gives results which agree satisfactorily with electron microscopic measurements. There are 2 figures, 1 table and 5 references, 2 of which are Soviet, 1 French and 2 translations.

SUBMITTED: April 28, 1959

5.4400

68893
S/051/60/008/02/020/036
E201/E391

AUTHOR: Slonim, I.Ya.

TITLE: A Nomogram for Calculation of Particle Diameters From Turbidity Using Mie's Equation

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 255 - 257 (USSR)

ABSTRACT: Mie's theory yields the following relationship between the light scattering coefficient K and the characteristic turbidity, $[\tau]$ of a suspension of particles of diameter D :

$$K/\rho = 2[\tau]\lambda/3\pi \qquad (5)$$

where $\rho = \pi D/\lambda$, λ is the wavelength of light in the suspension medium and:

$$[\tau] = \lim(\tau/C_{vol})_{C_{vol}\to 0} \qquad (3)$$

where C_{vol} is the relative volume of the particles in the suspension. When Eq (5) is used to calculate the

Card1/3

68893

S/051/60/008/02/020/036
E201/E391

A Nomogram for Calculation of Particle Diameters From Turbidity Using Mie's Equation

Student Yu.I. Vilents helped in construction of the nomogram.
There are 1 figure and 3 references, 1 of which is Soviet and 2 are English.

SUBMITTED: June 1, 1959

Card 3/3

S/051/60/009/002/003/006
E201/E691

AUTHOR: Slonim, I. Ya.

TITLE: Determination of the Particle Size from Scattering of Light. Nomograms for the Determination of the Size of Rod-Shaped Particles

PERIODICAL: Optika i spektroskopiya, 1960, Vol. 9, No. 2, pp. 244-247

TEXT: In his earlier work (Ref 1) the author published nomograms for calculation of the size of spherical or near-spherical particles from their light-scattering properties. Frequently particles are in the form of rods (e.g. viruses) with their diameters considerably smaller than the lengths (the latter comparable with the wavelength of light). The two nomograms (Figs. 1, 2) given in the present paper can be used to calculate the size of rod-like particles by two methods: either using measurements in transmitted light or measurements in scattered light. In the former case the particle size is deduced from the "characteristic turbidity" $[\tau]$ (which is the limit of the ratio of the turbidity τ, in cm^{-1}, to the concentration of particles, when the latter approaches zero) and β which is the attenuation coefficient

S/032/62/028/008/010/014
B104/B102

AUTHORS: Lyubimov, A. N., Varenik, A. F., and Slonim, I. Ya.

TITLE: The nuclear magnetic resonance spectrometer of the TsLA and its tests

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 8, 1962, 991 - 995

TEXT: At the Central Automation Laboratory a nuclear magnetic resonance spectrometer for broad lines was developed for industrial purposes. Two prototypes were built, one of which was tested at the Automation Laboratory and the other at the Institute of Plastics. The spectrometer has three main components: the magnet system, the supply system for the magnet with temperature control, and the recording apparatus. The nuclear magnetic resonance of the fluorine nuclei in calcium fluoride was determined in order to test the utility of the instrument. For the second moment of the nuclear magnetic resonance line, a value was found which deviates by 2% from those already known. A quick method for arriving at the degree of moisture in caprone was developed in the course of investigating various polymers. A special receiver for nuclear magnetic resonance signals and a

Card 1/2

S/032/62/028/008/011/014
B104 B102

The nuclear magnetic resonance...

Special automatic stabilization of the magnetic field were developed for high resolution work. The nuclear magnetic resonance spectrum can be recorded within 2 minutes and the resolving power is $2 \cdot 10^{-8}$. There are 6 figures.

ASSOCIATION: Tsentral'naya laboratoriya avtomatiki (Central Automation Laboratory) Nauchno-issledovatel'skiy institut plastmass (Scientific Research Institute of Plastics)

Card 2/2

SLONIM, I.Ya.

Nuclear magnetic resonance in high polymers. Usp.khim. 31 no.5: 609-655 My '62. (MIRA 15:5)

1. Nauchno-issledovatel'skiy institut promyshlennosti plasticheskikh mass.
(Polymers) (Nuclear magnetic resonance and relaxation)

L 13016-63 EPF(c)/EPR/EWP(j)/EWT(m)/BDS AFFTC/ASD Pr-4/Ps-4/Pc-4 RM/WW

ACCESSION NR: AP3000405 S/0191/63/000/005/0058/0061

71

AUTHOR: Slonim, I. Ya.; Urman, Ya. G.; Konovalov, A. G.

TITLE: Determination of the moisture content of plastics, molding powders, and fillers by the nuclear magnetic resonance method

SOURCE: Plasticheskiye massy*, no. 5, 1963, 58-61

TOPIC TAGS: moisture content, plastics, molding powders, fillers, nuclear magnetic resonance method, K-18-2 molding powder, cord caprone, caprone K, powdered caprone (brand B)

ABSTRACT: Because the moisture of plastics affects their mechanical properties, a number of methods have been devised for its determination. Of these, the nuclear magnetic resonance method offers many advantages, including rapidity, applicability to many kinds of material, and adaptability to automatic control. The authors used it to measure the moisture content of samples of wood powder, K-18-2 molding powder, particulate cord caprone (caprone K), and powdered caprone (brand B). Nuclear magnetic resonance spectra were determined with an M080 type spectrometer from the Tsentral'naya laboratoriya avtomatiki (Central Automation Laboratory), and the results compared with those obtained with standard methods. From the absorption signals recorded with these materials, their moisture content was determined with

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L 13016-63
ACCESSION NR: AP3000405

sufficient accuracy over a moisture range of 3-17%. The error of the method (circa 0.5% for the molding powder and caprone K, and about 1% for wood powder and caprone B) should be reducible by further refinement of the technique. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 10Jun63 ENCL: 00

SUB CODE: MA NO REF SOV: 003 OTHER: 006

Card 2/2

SLONIM, I.Ya.; URMAN, Ya.G.

Nuclear magnetic resonance in oriented polymers. Part 1: Formulas for calculation of the second moment. Zhur.strukt.khim. 4 no.2: 216-223 Mr-Ap '63. (MIRA 16:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass.
(Polymers) (Nuclear magnetic resonance and relaxation)

L 37020-65 EWT(1)/EWT(m)/EPR(c)/EWP(j)/EEC(t)/T Pc-4/Pr-4/Pi-4 IJP(c)
WW/GG/RM

ACCESSION NR: AR5003006 S/0081/64/000/020/S006/S006

4/2
B

SOURCE: Ref. zh. Khimiya, Abs. 20S30

AUTHOR: Urman, Ya. G.; Slonim, I. Ya.

TITLE: Nuclear magnetic resonance in oriented polymers. II. Films of polyethyleneterephthalate

CITED SOURCE: Sb. Vysokomolekul. soyedineniya. Geterotsepn. vysokomolekul. soyedineniya. M., Nauka, 1963, 227-232

TOPIC TAGS: nuclear magnetic resonance, polymer film, oriented polymer, polyethyleneterephthalate, film structure, magnetic field, stretched film, film rotation, doublet line

TRANSLATION: The nuclear magnetic resonance (NMR) spectra of polyethyleneterephthalate films which had been stretched uni- and biaxially were recorded at temperatures from -196 to +170C. The shape of the NMR lines was found to change when the film was rotated in a magnetic field. When a film which had been stretched uniaxially was placed in the direction of the field, the line showed a

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L 37020-65

ACCESSION NR: AR5003006

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doublet structure characteristic of the pair of protons in a CH_2-group. When a film which had been stretched uni- or biaxially was placed perpendicular to a magnetic field, the line had a complex shape indicating orientation of the macromolecules in the plane of the film. The experimentally determined relationships between the second moment of the NMR and the angle of rotation of the film in the field for the cases of uni- and biaxial stretching agree satisfactorily with the relationships calculated theoretically by the formulas derived in Part I of the study (see RZhKhim, 1963, 21S26). Authors' abstract.

SUB CODE: MT, NP ENCL: 00

mc

Card 2/2

SLONIM, I.Ja [Slonim, I.Ya.] (Moskva); LJUBIMOV, A.N. [Lyubimov, A.N.] (Moskva); KOVARSKAJA, B.M. [Kovarskaya, B.M.] (Moskva)

Study of curing and destruction of epoxy resins by nuclear magnetic resonance. Chem prum 13 no.11:600-608 N'63.

TUTORSKIY, I.A.; SLONIM, I.Ya.; URMAN, Ya.G.; KUDRYAVTSEVA, Ye.P.; DOGADKIN, B.A.

Study of the cyclization of rubber by the method of nuclear magnetic resonance. Dokl. AN SSSR 152 no.3:674-676 S '63. (MIRA 16:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova. Predstavlono akademikom A.A.Baladinym.

L 27873-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 WW/GS/RM

ACCESSION NR: AT4049841 S/0000/64/000/000/0033/0036

AUTHOR: Kovarskaya, B. M.; Zhigunova, I. Ye.; Slonim, I. Ya.; Urman, Ya. G.; Neyman, M. B.

TITLE: Investigation of the degradation products and the change in mobility of molecular chains during the thermal degradation of polycarbonate

SOURCE: Khimicheskiye svoystva i modifikatsiya polimerov (Chemical properties and the modification of polymers); sbornik statey. Moscow, Izd-vo Nauka, 1964, 33-36

TOPIC TAGS: polycarbonate, polyarylate, infrared spectroscopy, EPR spectrum, pyrolysis, thermal degradation / Diflon

ABSTRACT: It was found that the polycarbonate "Diflon", with a structure similar to that of the polyarylates based on diphenylolpropane and terephthalic or isophthalic acid (polyarylates TD and ID), has a high stability towards pyrolysis up to 400C. The slight gas evolution at 400C increases at higher temperatures and at 500C it reaches 16% of the weight of the initial product. In the gaseous products of polycarbonate, H_2, CO, CO_2, CH_4, ethane, ethylene and propylene were found by chromatography. The same gases were found in the pyrolysis of TD and ID at 500C.

Card 1/3

L 27813-65

ACCESSION NR: AT4049841

Infrared spectra of polycarbonate and of the solid residue after degradation at 500C showed that the absorption bands of the CH_3 group (2970, 1365, 1385 cm^{-1}) which are present in the initial polycarbonate are missing in the solid residue, and that the intensity of the absorption bands of the groups C=O and C-O-C (1780 and 1259 cm^{-1}) decreases. The increase in the intensity of absorption at 1600 and 800 cm^{-1}, corresponding to the benzene ring, in the solid residue shows that the residue contains more phenyl rings after degradation. The change in the structure and molecular mobility during degradation of polycarbonate was also investigated by nuclear paramagnetic resonance spectra. Here, the width of the line depends on the degree of mobility of the molecular group containing the resonant ring. At a temperature higher than 150C and lower than -130C, for the initial polycarbonate, a composite signal is seen which consists of two components: a narrow and a wide band. Two regions of decreased width of the line from -150 to -50C and from 150 to 170C are found for the initial polycarbonate. The narrowing of the EPR line at low temperatures is due to the mobility of the CH_3 groups in the polymer. This narrowing is less marked for the residue. The change in the electron paramagnetic resonance spectra during degradation shows that the number of CH_3 groups in the polymer rapidly decreases and that the rigidity of the structure increases because of the formation of polyphenyl structures. Orig. art. has: 4 figures, 1 table and 2 formulas.

Card 2/3

L 27873-65

ACCESSION NR: AT4049841

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass (Plastics scientific research institute)

SUBMITTED: 22May62 ENCL: 00 SUB CODE: GC, NP

NO REF SOV: 003 OTHER: 004

Card 3/3

[illegible] EWT(m)/EPF(c) Pc-4 [illegible]/GD/[illegible]

ACCESSION NR: AP4048207 S/0191/64/000/011/0028/0030

AUTHOR: [illegible], G. A.; Urman, [illegible]; Slonim, I. Ya.

TITLE: Variation in the dynamic degree of crystallinity and the stereoisomer composition of polypropylene during its conversion to film

SOURCE: Plasticheskiye massy, no. 11, 1964, 28-30

TOPIC TAGS: polymer crystallinity, polypropylene stereoisomer, polypropylene film, nuclear magnetic resonance, polymer film, polymer stabilizer

ABSTRACT: The effect of processing on the structure and properties of polypropylene was investigated, with emphasis on variations in the dynamic degree of crystallinity as shown by the nuclear magnetic resonance. The use of this method for the determination of the dynamic degree of crystallinity is based on the theory that the protons in the mobile polymer chain segments give narrow bands while those in the immobile segments give wide bands. The critical frequency here is $10^4 - 10^5$ c.p.s. The dynamic degree of crystallinity of the chain segments depends on the temperature. With increasing temperature, the mobility of the chain segments increases and the degree of crystallinity decreases. Since the general rigidity of the polymer structure depends on this degree of crystallinity, it is an important characteristic. In the present work, the Russian-made film-forming

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determined for samples obtained by compression molding and extrusion. The nuclear magnetic resonance spectra were taken at 30C, because at a temperature slightly higher than room temperature the complex form of the band can be seen more clearly. The typical spectrum of polypropylene is given. The effect of the forming methods (compression molding or extrusion) on the degree of crystallinity and mechanical properties was also studied. Both methods were found to give films with almost the same high degree of

ACCESSION NR: AP4013207

[illegible] oxide. Stabilizers decrease the destruction of the formamide polymer by [illegible]

Orig. art. has: 2 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 003 OTHER: 003

Card 3/3

SLONIM, I.Ya.

Shapes of nuclear magnetic resonance lines in polymers. Vysokom.soed. 6 no.8:1371-1378 Ag '64. (MIRA 17:10)

Nuclear magnetic resonance in the two-component polymer systems. Ibid.: 1379-1386

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.

URMAN, Ya.G.; SLONIM, I, Ya.; KONOVALOV, A.G.

Nuclear magnetic resonance in polyformaldehyde. Vysokom.soed. 6 no.9: 1651-1655 S '64. (MIRA 17:10)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.

URMAN, Ya.G.; SLONIM, I. Ya.; YERMOLAYEV, A.D.

Nuclear magnetic resonance in the system: polymer in monomer matrix. Vysokom. soed. 6 no.11:2107-210[illegible] N '64 (MIRA 18:2)

L 8873-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RAEM(c)/RAEM(t)/AS(mp)-2/SSD/ASD(m)-3/AFWL/ESD(t) RM

ACCESSION NR: AP4012978 S/0020/64/154/004/0914/0917

AUTHOR: Slonim, I. Ya.; Urman, Ya. G.; Vonsyatskiy, V. A.; Liogon'kiy, B. I.; Berlin, A. A.

TITLE: Nuclear magnetic resonance in polymers with conjugated bond systems.

SOURCE: AN SSSR. Doklady*, v. 154, no. 4, 1964, 914-917

TOPIC TAGS: nuclear magnetic resonance, coplanar polymers, noncoplanar polymers, conjugated bond polymer, magnetic field, secondary magnetic moment, polyphenylene, macromolecular structure, conjugated double bond system.

ABSTRACT: The nuclear magnetic resonance of polyphenylene and its derivatives was studied, to determine if the molecules have a flat structure and the adjacent rings are noncoplanar. The magnetic field and the secondary moment of polyphenylene, polyazophenylene and methyl-substituted polyazophenylene (all of 1000-3000 molecular weight) were determined at -196C, 20C and 175C. Experimental values for the secondary moment of polyphenylene are much less than the

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L 8878-65

ACCESSION NR: AP4012978

2

theoretical value if the molecule were planar, but agree with theoretical value if the adjacent rings were rotated 37° along the C–C bond between the rings. Results are similar for polyazophenylene. The moment for the methyl-substituted polyazophenylene was found to be no higher than that of the unsubstituted: this indicates noncoplanarity of the adjacent rings and rotation of the methyl group in the molecule even at 196C. Orig. art. has: 1 table, 1 figure, and 3 formulas.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR); Nauchno-issledovatel'skiy institut plasticheskikh mass (Scientific Research Institute of Plastics)

SUBMITTED: 04Sep63 ENCL: 00

SUB CODE: NP, GC NO REF SOV: 005 OTHER: 00

Card 2/2 - 10 (2/261) -

L 57008-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(1) Pc-4/Pr-4/Peb
RM
ACCESSION NR: AP5011823 UR/0192/65/006/002/0192/0197
538.27

AUTHORS: Slonim, I. Ya.; Urman, Ya. G.; Yermolayev, A. D.; Akutin, M. S. 40 38 B

TITLE: Nuclear magnetic resonance in oriented polymers. 3. Radiatively polymerized polyformaldehyde 16

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 2, 1965, 192-197

TOPIC TAGS: nuclear magnetic resonance, crystalline polymer, polyformaldehyde

ABSTRACT: The orientation of radiatively polymerized "monocrystalline" polyformaldehyde (PF) was studied by NMR techniques. NMR spectra of "monocrystalline" (5-6 mm in length) and polycrystalline specimens of PF were determined at -196C for different orientations of the principal crystalline axis in the magnetic field. The line shape did not exhibit any well developed structure. The value of the second moment ΔH_2^2 = 18.5 ± 0.5(gauss)^2. The difference from the calculated ΔH_2^2 = 19.9 (gauss)^2 is 1.5 (gauss)^2, and is attributed to change in the distance C - H from 1.09Å to 1.10Å and/or residual molecular motion at -196C. Calculated values for ΔH_2^2 for monocrystalline

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L 57001-65

ACCESSION NR: AP5011823

2

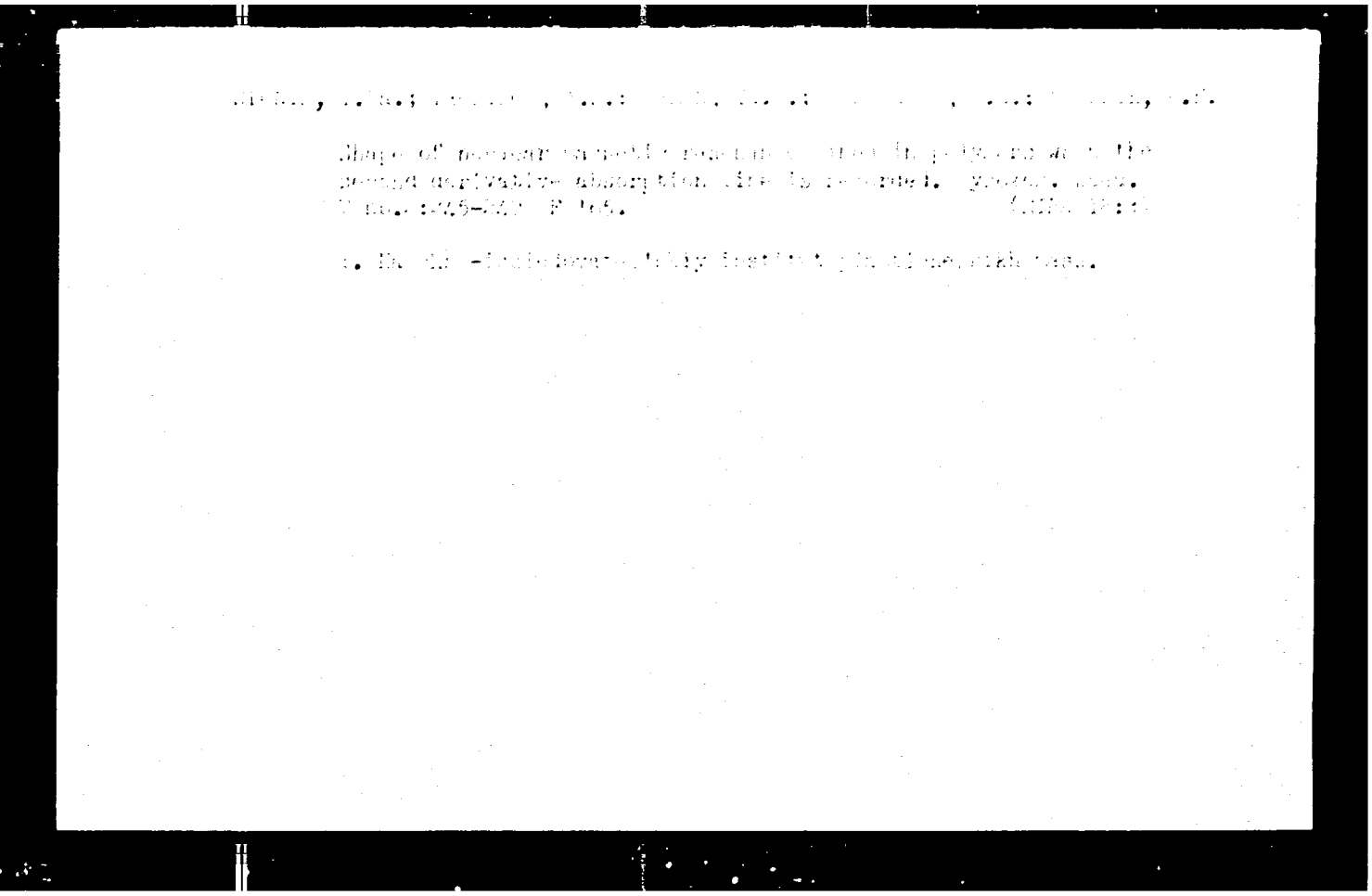
specimens are 0.5 $(gauss)^2$ and 2 $(gauss)^2$ higher for $\theta' = 0$ and $\theta' \leq 45^\circ$ respectively than the experimental values; θ' is the angle between the axis of specimen and the direction of the field. The line shape for isolated nuclear pairs was calculated on the assumption of a uniform distribution of internuclear vectors on the surface of a cone after the method of G. E. Pake (J. Chem. Phys. 16, 327, 1948). The experimental line shape was found to be considerably different from the calculated one, and this discrepancy is attributed in part to the neglect of W-type crystallites in the calculation. In the calculation of ΔH_2^2, of the line shape, and of the line width, most of the weight was given to the Z-type crystallites. W-type crystallites are oriented at 76°07' to the macroscopic crystal axis; Z-type crystallites are parallel to this axis. The calculated dependence of the line width on the angle θ' is in good agreement with experimental data. The authors thank L. G. Kasaryan for determining the x-ray picture of the specimen. Orig. art. has: 7 graphs, 1 photograph, and 7 equations.

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass (Scientific Research Institute of Polymers)

SUBMITTED: 12Nov63 ENCL: 00 SUB CODE: OC,MP

NO REF SOV: 005 OTHER: 008

Card 2/2 dm



SL[illegible], I. [illegible], [illegible], Yu.G.; [illegible], A.[illegible]

Nuclear magnetic resonance in trioxane. Zhur. strukt. khim. 6 no. 4:531-539 Jl-Ag '65 (MIRA 19:1)

1. Nauchno-issledovatel'skiy institut plastmass. Submitted October [illegible]

L 23332-66 EWT(m)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(1) GG/RM

ACC NR: AP6006979 (A) SOURCE CODE: UR/0190/66/008/002/0251/0255

AUTHORS: Urman, Ya. G.; Slonim, I. Ya.; Yermolayev, A. D. 44 B

ORG: Scientific Research Institute of Plastics (Nauchno-issledovatel'skiy institut plasticheskikh mass)

TITLE: Investigation of the radiation polymerization of trioxane in solid phase (4th report in the series "Nuclear magnetic resonance in oriented polymers")

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 251-255

TOPIC TAGS: radiation polymerization, nuclear magnetic resonance, trioxane

ABSTRACT: Oriented radiation-induced polymerization of trioxane in solid phase has been investigated by NMR. This is an expansion of the work published earlier by Ya. G. Urman, I. Ya. Slonim, and A. D. Yermolayev (Vysokomolek. soyed., 6, 2107, 1964). The method for preparing monocrystalline trioxane and for its polymerization was described previously by I. Ya. Slonim, Ya. G. Urman, and A. D. Yermolayev (Zh. struct. khimii, 6, 531, 1965). NMR spectra were taken with a spectrometer of the Central Laboratory of Automation (Tsentral'naya laboratoriya avtomatiki) at the frequency of 20 megahertz at 40C. Changes in the NMR spectra observed during the solid polymerization process are shown in Fig. 1. It was observed that: 1) during post-polymerization of the irradiated sample at 55C, the shape and second moment of NMR line change sharply. The position of the sample in the field also has a significant

Card 1/2 UDC: 66.095.26+678.55

L 23332-66

ACC NR: AP6006979

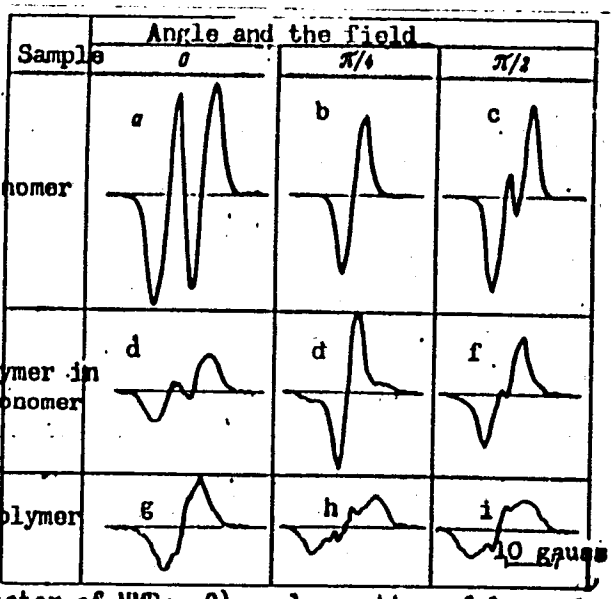
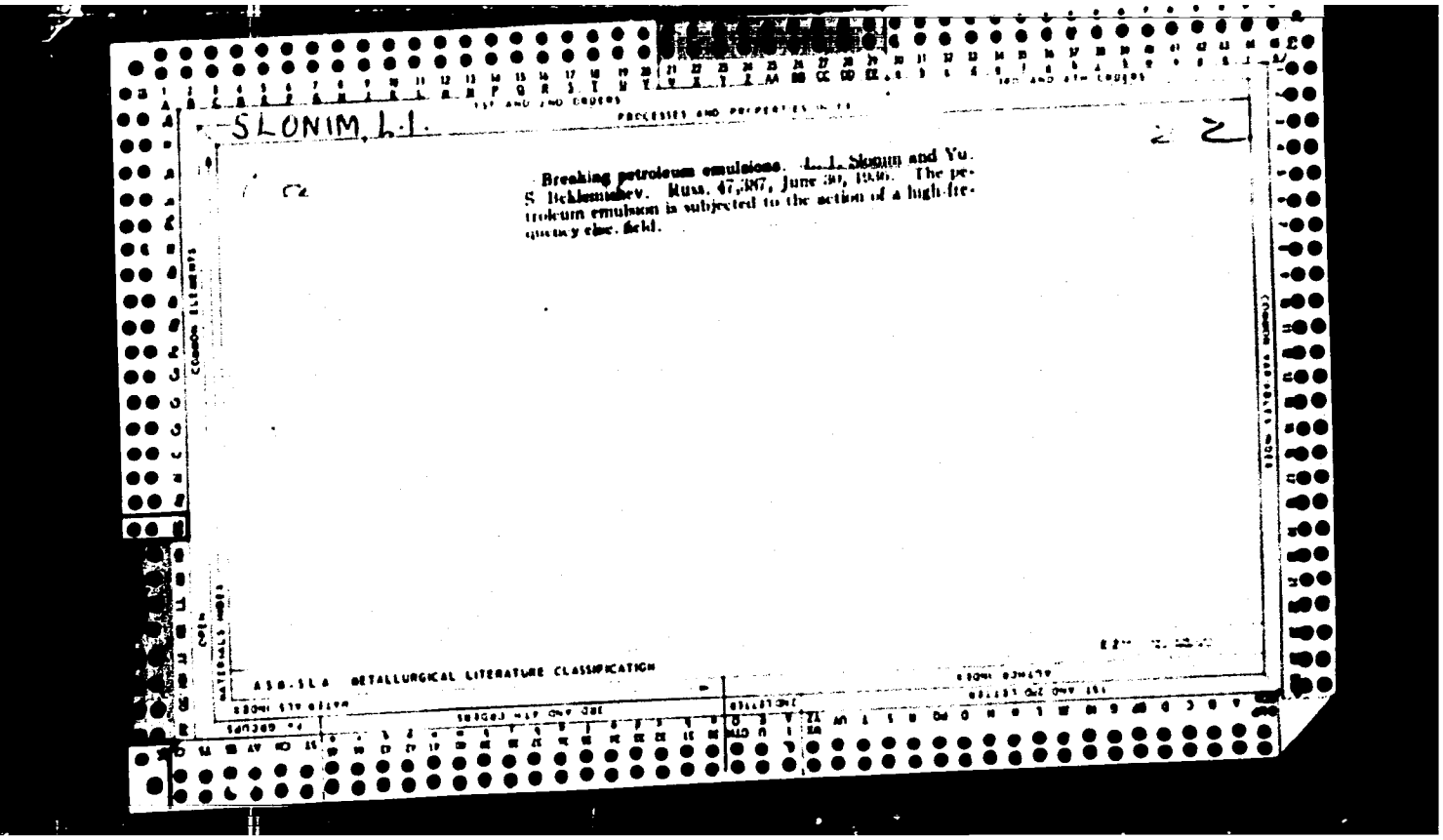


Fig. 1. Shape of NMR lines at 40C for three positions of the sample in the magnetic field: a, b, c - trioxane monocrystal; d, e, f - trioxane after irradiation and heating at 55C for 80 min ; g, h, i - polyoxymethylene, washed of the residual monomer.

effect on the character of NMR: 2) agglomeration of low-molecular products occurs during polymerization, which is responsible for the appearance of a narrow component in NMR. Orig. art. has: 5 figures.

SUB CODE: 07/ SUBM DATE: 27Feb65/ ORIG REF: 010/ OTH REF: 004

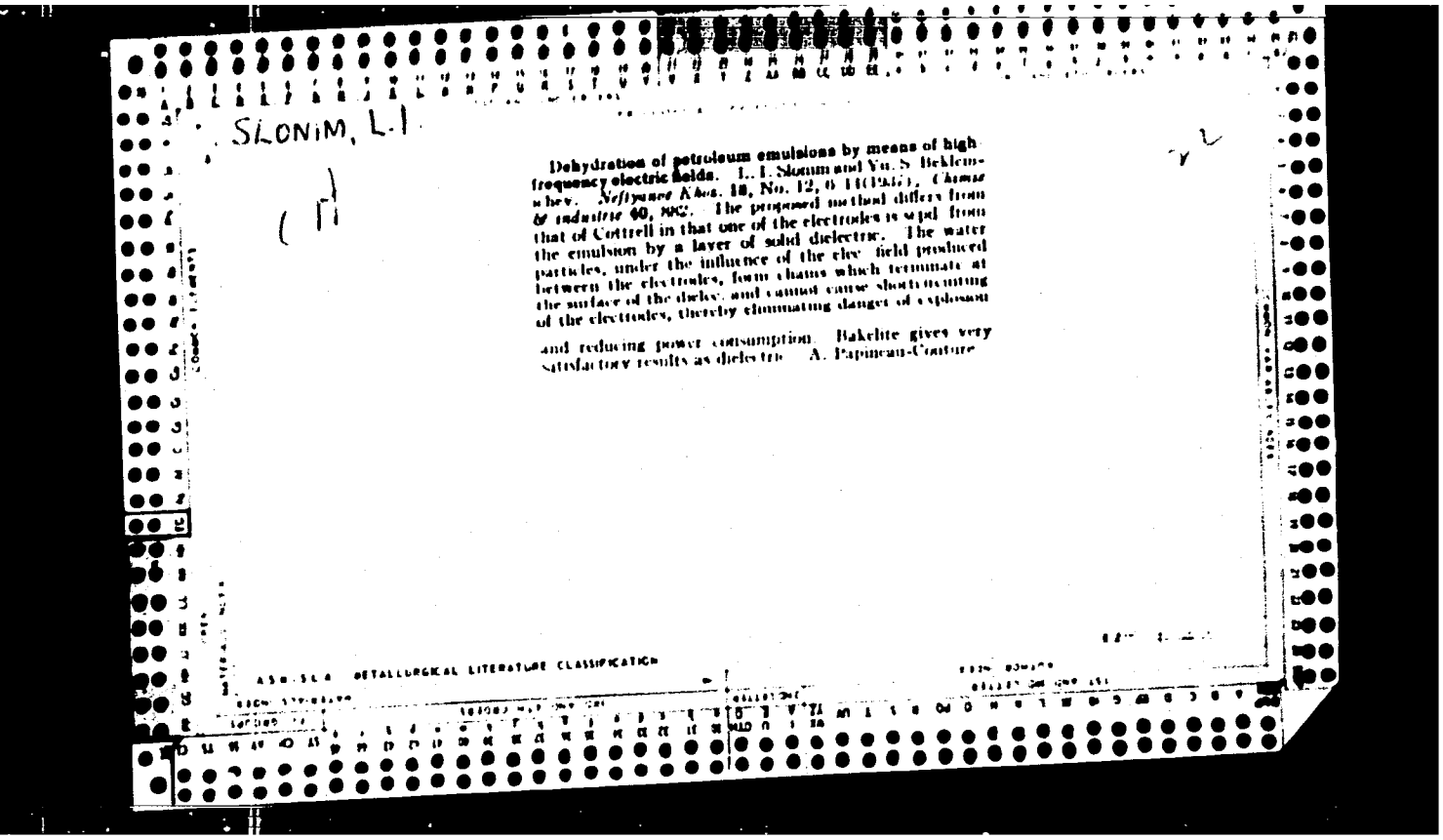
Card 2/2 WLR



SLONIM, L.I.

Breaking petroleum emulsions. L. I. Slonim and Yu. S. Ikhlemubev. Russ. 47,387, June 30, 1936. The petroleum emulsion is subjected to the action of a high-frequency elec. field.

A58-5L4 METALLURGICAL LITERATURE CLASSIFICATION



SLONIM, L.I.

Dehydration of petroleum emulsions by means of high frequency electric fields. L. I. Slonim and Yu. S. Beklemishev. *Neftyanoe Khoz.* 18, No. 12, 6-11(1940). *Chimie & industrie* 46, 395. The proposed method differs from that of Cottrell in that one of the electrodes is separated from the emulsion by a layer of solid dielectric. The water particles, under the influence of the elec. field produced between the electrodes, form chains which terminate at the surface of the dielec. and cannot cause short-circuiting of the electrodes, thereby eliminating danger of explosion and reducing power consumption. Bakelite gives very satisfactory results as dielectric. A. Papineau-Couture

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

C A SLONIM, L.I

Electrical methods of demulsifying and desalting of petroleum. L. I. Slonim. *Trudy Mosken. Neftyan. Inst.* [illegible]

im. I. M. Gubkina 1960, No. 4, 238–50.—The elec. tubular dehydrator outlined previously by the author (cf. *C.A.* 33, 2087⁹) and patented in Russia is described in detail with respect to structural and operating features. In a plant of 25 tons/hr. throughput capacity per each tube, at 220 v. in the primary and 50–55 kv. in the secondary circuit and 37–40° preheating temp., the salt content of a crude oil was reduced from 0.16% to 0.006% before the plant had to be shut down. A modified form of tubes will be used to prevent repeated elec. breakdown at their ends and penetration of oil between the outer electrode and the dielectric tube material. Bruno C. Metzner

[redacted], I. ., [redacted]

Dissertation: "H lling the Flanks of Files."

22/6/50

Moscow Aviation Tech olo ical Inst

EO Vecheryaya Moskva
Sum 71

SLONIM, L.S., inzhener; SHINSKIY, G.Ya.

New method of assembling chairs. Der.prom. 5 no.12:8-10 D '56.
(MLRA 10:1)

1. Konstruktorskoye byuro Moskovskogo oblastnogo upravleniya mestnoy promyshlennosti.
(Chairs) (Joinery)

L 23450-65 EWT(d)/EWT(m)/EWP(f)/T-2

ACCESSION NR: AR5000899 S/0273/64/000/010/0009/0010

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya. Otd. vyp., Abs. 10.39.58

AUTHOR: Slonim, L.S.; Trukhanov, V.A.

TITLE: Calculating the process of supercharging in a two-cycle internal combustion engine

CITED SOURCE: Tr. Chelyab. in-ta mekhaniz. i elektrifik. s. kh., vyp. 16, 1963, 97-104

TOPIC TAGS: two cycle engine, engine supercharging system, supercharging coefficient, supercharging phase calculation

TRANSLATION: Selection of pressure levels and optimal parameters for air ducts of the supercharging system is of major significance in engine design. Hence, one should know the amount of working gas per cycle passing through the air ducts of the supercharger, from the receiver into the working cylinder. Experimental studies established that supercharging of two-cycle engines with slot scavenging should begin after closure of the scavenging ducts, rather than after closure of the exhaust ducts as thought previously. The process of supercharging consists of two stages: 1. the supercharging stage during exhaust, and 2. the supercharging stage after completion of exhaust. The former stage can be considered as a continuation of the scavenging process; the latter

Card 1/2

L 23450-65
ACCESSION NR: AR5000899

takes place with exhaust ducts already closed, hence the pressure increases steadily in the cylinder and drops in the receiver. Experimental results served to establish the dependence of gas flow rate on rpm and supercharging pressure. This dependence approaches a linear form in relation to change in rpm, or to the level of supercharging pressure. The ratio of the actual, experimentally defined, rate of gas flow to its analytically determined value was termed the coefficient of supercharging. Within the studied range of operating speeds, that coefficient exhibits a rectilinear relationship to the number of revolutions of an engine's crankshaft and comprises a function of duct channel cross section dimension and of the level of supercharging pressure. Values of terms in the expression for a coefficient of supercharging are given in relation to various pressures and various periods — duct cross sections. Results of experimental studies indicate that the dependence of the coefficient of supercharging on supercharging pressure is curvilinear at constant rpm. It is concluded that an empirical coefficient of supercharging should be included in calculations of the supercharging phase for a two-cycle engine when defining the rate of gas or air flow through distributing ducts. Bibl. with 2 titles; 3 illustrations. P. Shelest

SUB CODE: PR ENCL: 00

Card 2/2

IVENSKIY, G.V.; POSSE, Z.V.; SLONIM, M.A.

Twelve-phase bridge rectifier with series connection of primary transformer windings. Izv. NIIPT no.8:83-110 '61. (MIRA 15:7)
(Electric current rectifiers)
(Electric power distribution--Direct current)

SLONIM, N.M.

AID P - 889

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 22/23

Author : Slonim, N. M.

Title : Increase of the no-load current of repaired a-c motors

Periodical : Energetik, 10, 38, 0 1954

Abstract : In reply to a reader's question, the author gives a brief explanation.

Institution : Not given

Submitted : No date

SLONIM, M.A. (Leningrad)

Use of the difference equations method in calculating inverse firing in converter systems. Izv. AN SSSR. Energ. i transp. no.5:560-568 S-O '64. (MIRA 17:12)

SLONIM, N.M.

Mounting ball-bearings on shafts and the washing of bearings. (MLRA 9:10)
Energetik 4 no.8:40 Ag '56.
(Bearings (Machinery))

BOLUNGEN, I.N., inzh.; VINOGRADOV, K.V., inzh.; VELLERSHTEYN, A.L., inzh.; GOL'DGOF, B.G., inzh.; KUZ'MIN, V.S., inzh.; KULIKOV, P.S., inzh.; LEBEDEV, N.N., inzh.; LEVI, S.S., kand.tekhn.nauk; ROZANOV, M.S., inzh.; SIDOROV, V.N., inzh.; SOKOLOV, D.V., inzh.; SLOHIM, N.M., inzh., laureat Stalinskoy premii; EPSHTEYN, A.L., inzh.; ANTRUSHIN, B.D., inzh., nauchnyy red.; SIMAKOV, S.N., inzh., nauchnyy red.; TRUBIN, V.A., glavnyy red.; SOSHIN, A.V., zam.glavnogo red.; GRINEVICH, G.P., red.; YEPIFANOV, S.P., red.; ONUFRIYEV, I.A., red.; ZIMIN, P.A., red.; VDOVENKO, Z.I., red.izd-va; SHIROKOVA, G.M., red.izd-va; KL'KINA, E.M., tekhn.red.

[Power engineering handbook for construction work] Spravochnik energetika na stroitel'stve. Izd.2., perer. i dop. Pod red. N.N. Lebedeva. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1960. 736 p. (MIRA 13:11)
(Power engineering)

SLONIM, S

CZECHOSLOVAKIA / Virology. Human and Animal Viruses E-3

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 5009

Author : Slonim, Shtepanek

Inst : Not given

Title : Investigations of a purified Virus of Czechoslovak Tick Encephalitis by an Electron-Optical Method. Communication IV. Virus of Czechoslovak Tick Encephalitis.

Orig Pub : Ceskosl. epidemiol., mikrobiol., imunol., 1956, 5, No 4, 173-177

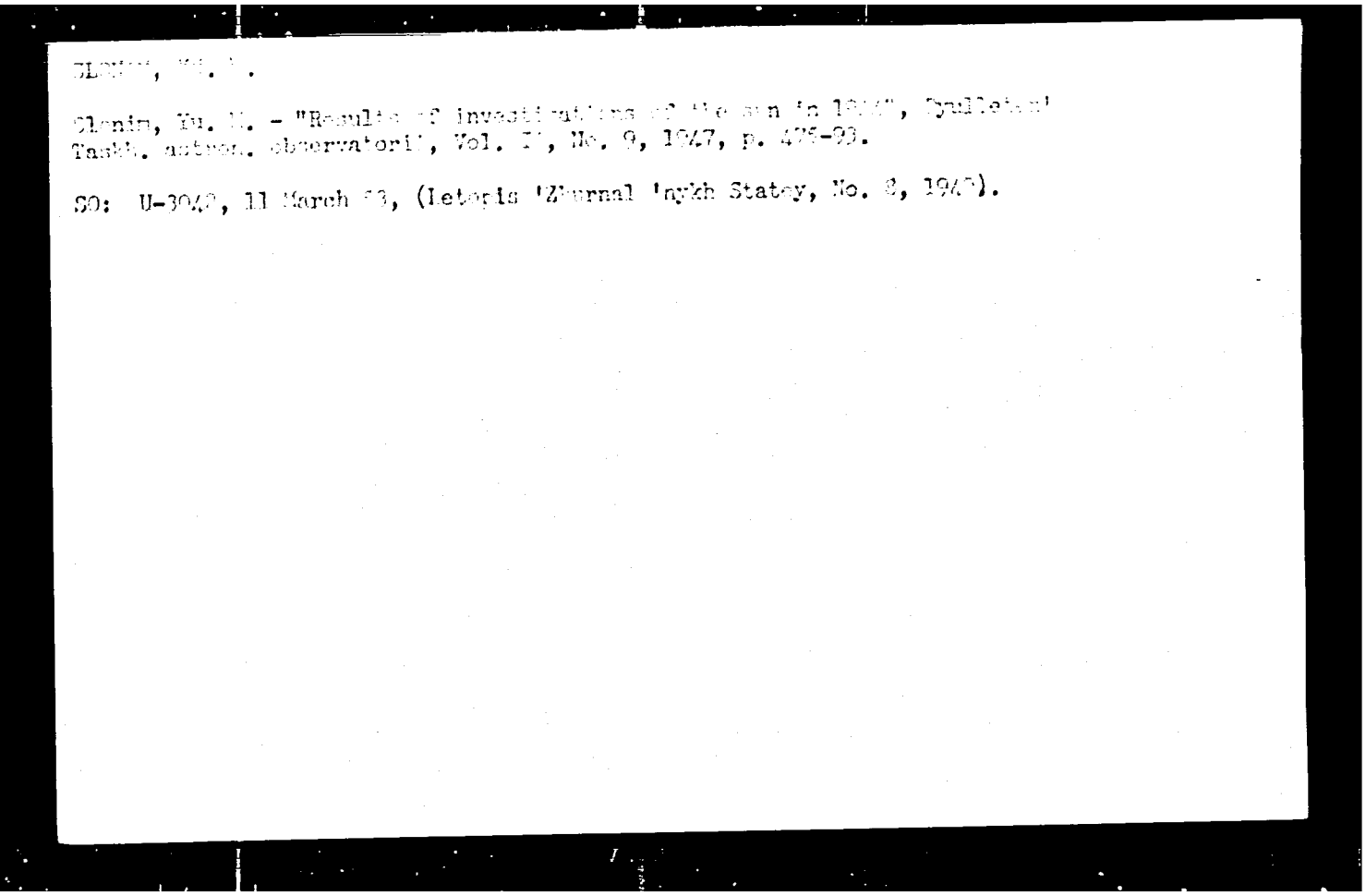
Abstract : The virus (strain JIR) was introduced into mouse brain, and the brain suspension was then treated with acetone, ether and methyl alcohol, or by a cruder method -- with bentonite and subsequent freezing. The titer of end products of purification (DL_{50}), obtained by the first method, attained

Card : 1/2

SLONIM, Yu M.

Soviet Astronomical Journal
Vol. 2, No. 6, March 1957, pp. 913-919

From: Monthly List of Russian Accessions
April 1958, Vol. 4, No. 1, p. 25



Glenin, Yu. N. - "Results of investigations of the sun in 1946", Bulletin' Tashk. astron. observatorii', Vol. I', No. 9, 1947, p. 475-93.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 9, 1949).

GLONIN, Yu. M.

"Circular of the Tashkent Astronomical Observatory", No. 220, 8 pp , 1949.

BLOKHIN, Yu. M.

"Circular of the Tashkent Astronomical Observactory", No. 221 1949.

SLONIM, Yu. M.

"Circular of the Tashkent Astronomical Observatory", No 222, 8 pp 1949.

SHCHEGLOV, V.P.; SLONIM, Yu.M., redaktor; SKRIPNIK, M.V., redaktor; BABAKHANOVA, A.G., tekhnicheskiy redaktor.

[Eclipse of the sun on June 30, 1954] Solnechnoe zatmenie 30 iiunia 1954 goda. Tashkent, Izd-vo Akad. nauk UzSSR., 1954. 30 p. [Microfilm] (MLRA 7:11)
(Eclipses, Solar--1954)

SLONIM, Yu.M.

Chromospheric flares and some characteristics of active regions of the sun. Izv.AN Uz.SSR.Ser.fiz-mat.nauk no.1:83-93 '57. (MIRA 13:8)

(Sun)

SLONIM, Yu.M.; KULESHOVA, K.F.

Characteristics of the last eleven-year cycle of solar activity.
Trudy Tashk. astron. obser. Series 2 6:101-111 '57. (MIRA 11:11)
(Sun)

SLONIM, Yu.M.

Development of sun studies at the Tashkent Astronomical Observatory during 75 years (1874-1949). Trudy Tashk. astron. obser. Series 2 6:37-60 '57. (MIRA 11:11)

(Sun)

SLONIM, Yu.M.

Active areas on the sun and chromospheric flares. Trudy Tashk. astron. obser. Series 2 6:61-100 '57. (MIRA 11:11)
(Sun)

88821

S/035/61/000/002/006/016
A001/A001

3.1540(1062,1128,1168)

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1961 No. 1, p. 52, # 2A431

AUTHOR: Slonim Yu.

TITLE: Chromospheric Flares and Prominences in Active Zones

PERIODICAL: "Tsirkulyar Tashkentsk. astron. observ.", 1959, maya 20, No. 300, pp. 17 - 20

TEXT: Observations with a chromospheric telescope show that prominences which are formed in the coronal space are frequently followed by prominences of chromospheric origin. Streams and loops of coronal prominences, multiple ejections of a "fan" ("opakhalo"), and other phenomena are frequently of repeated nature. Descending movements of matter in the coronal space entail ascending movements in the chromosphere and vice versa. Flares and local luminosity growth appear both in spots of matter ejection and in spots of flowing in of coronal jets and streams. An investigation of 30 flares on the disk proper also produced the

Card 1/2

44488
S/033/62/039/005/001/011
E032/E314

2,1540

AUTHOR: Slonim, Yu.M.

TITLE: Relation between chromospheric flares and prominences in active regions

PERIODICAL: Astronomicheskiy zhurnal, v. 39, no. 5, 1962, 798 - 812 + 2 plates

TEXT: An attempt is made to classify chromospheric flares on the basis of their connection with prominences. The analysis is based on observations made with the chromospheric telescope and the spectrohelioscope at Tashkentskaya astronomicheskaya observatoriya (Tashkent Astronomical Observatory) during 1958 - 1960. The observational data indicate that in active solar regions chromospheric flares and prominences frequently accompany each other. Thus, flares are accompanied by the ejection of chromospheric matter (including retrogressive ejections) and slow outflow (with a constant velocity of about 10 km/sec) leading to the formation of prominences. The flares are also related to the inflow of streams, loops and jets of coronal prominences. The development of flares is correlated with the

Card 1/3

4

Relation between ....

nature of the accompanying prominences. Flares take the form of a short impulse in the case of sudden ejections of chromospheric matter or the form of extended emission bursts in the case of slow outflow of chromospheric matter. Finally, in the case of coronal inflow, the flares are of the prolonged pulsating type, which is in good agreement with the delayed and intermittent development of the corresponding prominences. The flare-prominence correlation is confirmed by the fact that flares characterized by plasma motions (flares-prominences) are similar to the usual forms of sunspot prominences, including typical loop structures [Pettit's sub-class IIIb (Astrophys.J., 98, 6, 1943)]. This confirms earlier results reported by the author (Tsirk. Tashkentsk. astron. observ., no. 300, 17, May, 1959). The simultaneous appearance outside active regions of these two processes may be regarded as additional evidence for the correlation between them. Thus, flares accompany the sudden disappearance of extended stationary filaments and the ejection of matter from undisturbed chromospheric regions.

Card 2/3

S/033/62/039/005/001/011
E032/E314

Relation between ....

The correlation between flares and prominences may have a deeper significance, i.e. the two processes may, in fact, be different manifestations of the same effect in the upper layers of the Sun. There are 5 figures and 2 tables.

ASSOCIATION: Tashkentskaya astronomicheskaya observatoriya
(Tashkent Astronomical Observatory)

SUBMITTED: April 30, 1961 (initially)
March 20, 1962 (after revision)

4

Card 3/3

ISHCHENKO, I.M.; SLONIM, Yu.M., kand.fiz.-matem.nauk, otv.red.; EYDEL'MAN, A.S., red.; KARABAYEVA, Kh.U., tekhn.red.

[Some eclipsing binary stars in constellations Cygnus, Lacerta, and Cepheus.] Nekotorye zatemnennye dvoinye zvezdy v sozvezdiiakh Lebedia, Iashcherity i Tsefeia. Tashkent, Izd-vo Akad. nauk Uzbekskoi SSR, 1963. 102 p. (Tashkent. Astronomicheskaia observatoriia. Trudy, Ser. 2, vol. 9). (MIRA 16:9)

ACCESSION NR: AP4007596 S/0214/63/000/004/0067/0077

AUTHOR: Slonim, Yu. M.

TITLE: Nature and localization of chromospheric flares

SOURCE: Solnechny*ye danny*ye, no. 4, 1963, 67-77

TOPIC TAGS: chromospheric flare, brightness pulsation, chromospheric matter, chromospheric prominence, coronal prominence, microphotometer, coronal matter, pulsating flare, flocculent field, C type flare, B type flare, A type flare, Balmer continuum, recombination process, H calcium line, K calcium line, hydrogen, neutral helium line

ABSTRACT: The relationship of flares to solar prominences has been discussed. Three types of flares are considered. Type A is shown to have plasma with sharp, short pulse jets, type B a strong, contracted radiation burst, and type C a long-duration pulsating character. The first two appear strictly in the chromosphere, whereas type C has a coronal origin. In order to compare these various flare types objectively, the flare intensity was replaced by the line width characteristic H_α. It is shown that type C flares are generated principally in the growth phase

Card 1/2

ACESSION NR: AP4007596

of sunspot groups, whereas types A and B are found in the decaying phase. It is concluded that these facts noted show the differences between the fast-growing flares of types A and B and the pulsating flares of type C. The analysis is extended to connect type C flares with loop prominences. Various reasons are given for the hypothesis, emphasizing the similarity between pulsating emission center for type C flares and the nature of nodal and jet radiation of prominences. Two significant observations are cited: the first on April 5, 1960 in group No. 144, and the second on December 18, 1956, in the case cited by H. Zirin (Ap. J., 129, 414, 1959). This latter observation supports the hypothesis that type C flares are generated in the solar corona, and form spatial multistage structures. "The author expresses his gratitude to Z. B. Korobova for help in the photometric measurements." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 21Jan64 ENCL: 00

SUB CODE: AS NO REF SOV: 006 OTHER: 011

Card 2/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651410001-2"

L 06315-67 EWT(1) GW
ACC NR: AR6016291 SOURCE CODE: UR/0269/66/000/001/0053/0053

AUTHOR: Slonim, Yu. M. 23 B

TITLE: Flares with emission of material and photospheric phenomena associated with them. Part 2

SOURCE: Ref. zh. Astronomiya, Abs. 1.51.425

REF SOURCE: Solnechnnyye dannyye, no. 1, 1965, 51-57

TOPIC TAGS: solar photosphere, solar flare, solar chromosphere, solar corona, solar magnetic field

ABSTRACT: The development and ascent of loop protuberances associated with strong chromospheric flares are discussed and the following conclusions are made. Flares of the given type are closely associated with the emergence of the magnetic field and material from the photosphere into the outer layers of the solar atmosphere. The interaction of the ascending field with the field already existing in the corona produces in turn condensation and discharge into the chromosphere of the coronal plasma. Thus, mixing of photospheric, chromospheric, and coronal material occurs in the region of flares. The discharge of the coronal plasma causes long-

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term pulsations of floccula brightness. Bibliography of 15 citations. V. Banin [Translation of abstract]

SUB CODE: 03

Card 2/2 mle

SLONIMER, B.M., inzhener.

New methods for setting up tanks. Mash.shir.prom. 19 no.1:30-31 '54. (MLRA 7:2)

(Tanks)

SLONIMER, B.M., inzh.; KANEVSKIY, L.Ya., inzh., retsenzent; ABAKUMOV, G.I., inzh., red.; MOLYUKOV, G.A., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Assembly of equipment and plants of the food industry; a reference manual] Montazh predpriiatii pishchevoi promyshlennosti; kratkoe spravochnoe posobie. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 376 p. (MIRA 13:7)

(Food industry--Equipment and supplies)

SLONIMER, B.M., inzh.

Glass pipes. Masl.-zhir.prom. 26 no.7:35-37 Jl '60.
(MIRA 13:6)

1. Trest "Prodmontazh".
(Pipe, Glass)

SLONIMER, B.M.; POVAROV, K.I.; MAKOVITSKIY, B.K., inzh., nauchnyy red.; GORDEYEV, P.A., red.izd-va; SHERSTNEVA, N.V., tekhn. red.

[Installation and use of glass piping in the national economy] Stekliannye truboprovody v narodnom khoziaistve, ikh montazh i ekspluatatsiia. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1961. 179 p. (MIRA 15:2)
(Pipe, Glass)

SLONIMER, B.N., inzh.

New packing materials for glass pipes. Mont. i spets. rab. v stroi. 23 no.3:7-10 Mr '61. (MIRA 14:2)

1. Spetsializirovannoye upravleniye po montazhu steklyannykh truboprovodov tresta Prodmontazh.
(Pipe, Glass)

ROD'KIN, P.P.; SLONIMER, B.M.; KATS, L. Kh.

Brine-cooling coils made of glass. Khol.tekh. 38 no.2:51-52 Mr-Ap '61. (MIRA 14:3)
(Refrigeration and refrigerating machinery)

SLONIMER, B.M., Inzh.

Manufacture of the parts of glass pipelines. Mont. o spets. rab. v stroi. 24 no.1:22-25 Ja '62. (MIRA 15:7)

1. Spetsializirovannoye upravleniye po montazhu steklyannykh truboprovodov tresta Prodmontazh.
(Pipe, Glass)

SLONIMER, B.M., inzh.

Testing the strength of the joints of glass pipelines. Mont. i spets. r b. v stroi. 24 no.4:17-19 Ap '62. (MIRA 15:7)

1. Spetsial'noye upravleniye po montazhu steklyannykh truboprovodov Tre ta po montazhu prodovol'stvennykh predpriyatiy.
(Pipe, Glass—Testing)

32

ACCESSION NR: AR4043466 S/0282/63/000/012/0001/0001

SOURCE: Ref. zh. Khimich. i kholod. mashinostr. Otd. vy*p., Abs. 12.47.3

AUTHOR: Slonimer, B. M.

TITLE: Glass tubing in the chemical industry

CITED SOURCE: Vestn. tekhn. i ekon. inform. N.-i. in-t tekhn.-ekon. issled. Gos. kom.-ta khim. i neft. prom-sti pri Gosplane SSSR, vy*p. 4, 1963, 27-30

TOPIC TAGS: glass tubing, glass product, chemical industry

TRANSLATION: Notes the advantages and disadvantages of glass tubing. In the USSR, glass tubing 1.5-3 m long and with diameter to 100 mm with smooth ends is made from low-alkali glass not containing boron by the method of continuous elongation. Describes the mounting of the tubes and shaped parts, the operating conditions, thermal insulation, and examples of the use of glass tubing at various factories. Three illustrations.

SUB CODE: MT, GO ENCL: 00

Card 1/1

SLONIMER, B.M., inzh.

Anticorrosive polyethylene coatings for parts of pipelines.
Mont. i spets. rab. v stroi. 25 no.5:25-26 My '63.
(MIRA 16:7)

(Polyethylene) (Protective coatings)
(Pipe fittings)

SLONIM, Dimitrij; SLONIMOVA, Miluse

Complement fixation in diagnosis of influenza. Cesk. epidem. mikrob. imun. 5 no.3:125-131 June 56.

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(INFLUENZA, diagnosis,
complement fixation (Cz))

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SLONIMSKAYA, I. A.

Physicians

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(Russia--Revolution of 1905) (Medical service employees)

SLONIMSKAYA, I.A.(Moskva)

Medical workers in the Revolution of 1905. I.A. Slonimskaia. Fel'd. i akush. no.11:3-10 N '55. (MLRA 9:2)

(MEDICINE-HISTORY)