ZAKHAR'YEVSKIY, M.S.; GATILOVA, Ye.G.; MAKHORTYKH, S.V.

Conductance of sodium acetate and ferrous acetates in aqueous acetic acid solutions. Vest. LGU 18 no.22:105-113 '63.

Conductance method of studying the complex formation of ferric acetate in aqueous acetic acid solutions. Ibid.:114-119 (MIRA 17:1)

CATIN, I.

CATIN, I. Engine trouble. p. 167.

Vol. 7, No. 7, July 1955.
POMORSKO RIBARSTVO.
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So: East European Accession, Vol. 5, No. 1, May 1956

GATIN, I.

GATIN, I. Why thicker oil? p. 233.
Protective zones for stationary tunny fisheries. p. 234.

Vol. 7, No. 9, Sept. 1955.
MORSKO RIBARSTVO.
AGRICULTURE
Rijeka, Yugoslavia

So: East European Accession, Vol. 5, No. 5, May 1956

GATIN, I.

GATIN, I. The correct lubrication of engines. p. 151.

Vol. 3, No. 5, May 1956.
MORSKO RIBARSTVO
AGRICULTURE
Rijeka, Yugoslavia

So: East European Accession, Vol. 6, No. 2, February 1957

GATIN, L.

"Fifty new fishing boats."

p. 292 (Morsko Ribarstvo) Vol. 9, no. 11, Nov. 1957
Rijeka, Yugoslavia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

GATI[illegible], I. I.

"Pathogenetic Therapy of Keratitis in Animals." Cand Vet Sci, Kazan' State Veterinary Zootechnical Inst, Kazan', 1953. (RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

Yugoslavia/Miscellaneous - Yugoslav Science **Jan 53**

"The Decline of Science in Yugoslavia as a Result of the Antipopular Policies of Tito's Clique," Zhivko Gatin

"Priroda" Vol 42, No 1, pp 53-59

PA 243T103

Describes difficulties with which science, education, agriculture, and public health in Yugoslavia have to struggle under a "fascist" government. Regards as particularly nefarious the action of US ambassador to Yugoslavia in presenting a shipment of American books to Belgrade

243T103

U, because some of these books advocate mass sterilization, cannibalism, and reduction of the earth's population by one billion people.

243T103

GATIN, ZHIVKO

GATIN, Zh.I.

Biological characteristics of the sea buckthorn and the problem of introducing it into cultivation in orchards and forest belts. Probl.bot.no.2:339-374 '55. (MIRA 8:11)
(Buckthorn)

3(0)

AUTHORS: Nagibina, M. S., Krestovnikov, V. N., Chzhan Bu-Chun', Gatinskiy, Yu. G. SOV/20-123-5-39/50

TITLE: Recent Discoveries of Paleozoic Fauna in the Malyy Khingan Mountain Range (China) (Novyye nakhodki paleozoyskoy fauny v khrebte Malyy Khingan (kitayskiy))

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 5, pp 910 - 913 (USSR)

ABSTRACT: The Sovetsko-Kitayskaya Amurskaya ekspeditsiya (Soviet-Chinese-Amur Expedition has found a fauna in the undifferentiated volcanic and sedimentary rocks in the northern part of the Malyy Khingan and the Il'khuri-Alin'. This fauna allowed subdivision of this suite of rocks. The suite lies with an angular unconformity on folded crystalline rocks of the Upper Archaic, Proterozoic, and Lower Paleozoic. It is intruded by igneous rock of various compositions. In the sedimentary sequence, Silurian Lower and Middle Devonian, and Permian strata could be determined. The definitely Silurian rocks are distributed in Malyy Khingan and in the southern part of Il'khuri-Alin'. They are related to the Silurian sedimentary

Card 1/3

rocks of the Sukhotinskiy anticlinorium on the left side of the Amur River (USSR). They are further exposed along the highway between the cities of Kheykhe and Hun'tszyan. The Silurian beds are many kilometers thick and are entirely similar to the faunally characterized Upper Silurian rocks of the Nora River discharge region (USSR). Devonian sedimentary rocks in this area have been known since 1942 (Refs 4,5). Also the authors found a Devonian fauna in the Malyy Khingan (1957). The rocks lie unconformably on Silurian strata and outcrop in 2 areas. They are faulted and intruded by granite bodies (Erchzhanskiy stock). Chinese geologists under the leadership of Chzhao Guy-san' divide the Devonian into 2 suites: a) Nitszyukhe (1500 m thick) and b) Kholunmen (800-900 m thick). A fauna was found in the latter suite on Mount Vankholu and in the vicinity of the village of Din'shuy. The brachiopods were identified by V. N. Krestovnikov, the trilobites by Z. A. Maksimova, and the pelecypods by I. N. Krasilova. On the basis of general fauna character, the lower part of the Kholunmen suite may belong to the upper part of the Coblenzian ($L_o$wer Devonian). The forms of the Din'shuy rocks have the

character of Middle Coblenzian stage. The higher horizons of this stage and yet higher the lower horizons of the Eifelian stage (Middle Devonian) could be recognized through fossil remains (Fig 1). The Nitszyukhe suite is designated Gedinnian by the authors. Professor Yuy Tszyan'chzhan collected fossils on the Kheykhe-Nun'tszyan' highway in the south in 1950; he identified them as Permian-Carboniferous. Sedimentary rocks with Permian faunal characteristics were only found in the vicinity of Mount Diguan'shan' (Petushinyy greben'). They are 300 m thick. Here pelecypods (identified by L. L. Khalfin) were found. The Permian beds lie discordently on folded Middle Paleozoic and older strata. They are lucustrine and marine, deposited in local basins. There are 2 figures and 5 references, 3 of which are Soviet.

ASSOCIATION: Geologicheskiy institut Akademii nauk SSSR (Geologic Institute Academy of Sciences USSR)
PRESENTED: August 2, 1958, by N. S. Shatskiy, Academician
SUBMITTED: July 4, 1958

GATKER, A. B.

AID P - 5213

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 12/13

Author : Gatker, A. B.

Title : Increasing performance of the ASSh-2 machine

Periodical : Svar. proizv., 7, 32, Jl 1956

Abstract : The author describes and illustrates a special device for shifting the master-pattern forms with the profile of cut parts. This small attachment has greatly improved efficiency of the ASSh-2 oxygen cutting machine. Two drawings.

Institution : None

Submitted : No date

GATKIEWICZ, J.

621.316.57.066.6

1535. EXAMINATION OF CURRENT THROW-OVER PHENOMENA ON CONTACT SYSTEMS IN LOW-VOLTAGE CIRCUIT BREAKERS. T.Lipski, J.Gatkiewicz, H.Dzierżek and W.Winiarski.
Przegląd elektrotech., Vol. 31, No. 6, 400-3 (1955). In Polish.

Voltage drop measurements have been successfully used to investigate the throw-over of current and arc from main to auxiliary contacts in 500 V, 400 A, 25 kA interrupting capacity air circuit breakers. Details of APU-30 air circuit breaker contacts, measuring circuits and oscillograms obtained with currents from 22 kA_{max} to 77 kA_{max} are given. Possibilities of throw-back and burning of main contacts impose limitations on current interrupting capacity of air circuit breakers.

J.Łukaszewicz

GATKIEWICZ, Janusz, mgr inz.

A.C. limiting circuit breakers. Przegl elektrotechn 40 no.1:32-35 Ja'64.

1. Glowny konstruktor Fabryki Apena, Bielsko-Biala.

GATKER, Yu.B. [Hatker, IU.B.]

Machine for cutting paperboard for the manufacture of packaging cartons. Leh.prom. no.1:11-12 Ja-Mr '63. (MIRA 16:4)

1. Obshchestvennoye konstruktorskoye byuro tresta shveynoy promyshlennosti Kiyevskogo soveta narodnogo khozyaystva.

GATKIEWICZOWA, Janina

Professor Witold Slawinski, Meritorious scientist, educator, and civic leader, Nov. 27, 1888 - Sept. 4, 1962. Wiadom botan 7 no.2:113-116 '63.

GATKIN N. G.

AID P - 5073

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 2/26

Authors : Gatkin, N. G., and A.M. Farber, Kandidats Tech. Sci.

Title : Noise analysis for determining the performance of machines and mechanisms.

Periodical : Vest. mash., 5, 6-7, My 1956

Abstract : The use of noise analyzers for evaluating the quality of machines and mechanisms is discussed. Two analyzers are described for recording wave spectra for low and high frequencies (2-25 cycles and 400-10000 cycles). These devices are recommended by the author on the basis of his experience. 5 illustrations. 3 references.

Institution : None

Submitted : No date

84493
S/112/59/000/014/070/085
A052/A001

9,3230 (2301, 2701, 3001, 1031) * ONLY

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 14, p. 244, # 30275

AUTHOR: Gatkin, N. G.

TITLE: Selection of Filter for Frequency Analizer with a Sequential Method of Analysis

PERIODICAL: Tr. Sektsii radiosvyazi, radioveshch. i televid. Ukr. resp. pravl. Nauchno-tekhn. o-va radiotekhn. i elektrosvyazi, 1957, No. 1, pp.55-59

TEXT: This is an evaluation of resonance systems operating under dynamic conditions as filter analizers: 1-, 2- and 3-stage resonance amplifiers, bandpass amplifiers and RC circuits connected into the feedback loop. Various circuits have been compared at the same parameter $C = \frac{\sqrt{\pi}\,\Delta F_{o7st}}{\sqrt{\gamma}}$, where ΔF_{o7st} - pass-band under static conditions and γ - rate of signal frequency change in cycles/sec. The following quantities have been determined as functions of parameter C:
1) the ratio of the maximum values of envelopes under dynamic and static

Card 1/2

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A052/A001

Selection of Filter for Frequency Analizer with a Sequential Method of Analysis

conditions; 2) the relative widening of the pass-band under dynamic conditions; 3) the shift of resonance frequency under dynamic conditions. Conclusions are drawn on the expediency of selecting the parameter $C \approx 2$ and the application in this case of connected systems. The use of the 1-stage resonance amplifier and the amplifier with a double T-bridge in the feedback circuit is not recommended.

S. A. B.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

AUTHORS: Belkin, M. K., Member of the Society, Gatkin, N. G., Member of the Society SOV/108-13-10-4/13

TITLE: On the Problem of Receiving Pulsed Signals by Storage Methods (K voprosu o priyome impul'snykh signalov metodom nakopleniya)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 10, pp 14 - 17 (USSR)

ABSTRACT: In this article the possibilities of receiving pulsed signals by storage methods in one single- and double-tuned receivers are discussed. This is in particular an approach to the noise stability conditions at limited mean pulse time. It is shown that atgreat mean pulse times the method of double-tuned storage, as compared to single-tuned reception provides a certain gain in noise stability. A model was constructed for experimental investigations, the block-scheme of which is given. The results of the comprehensive information collected are to the point that a double-tuned reception offers a certain degree of improvement as compared to ordinary single-tuned reception with respect to noise stability,

Card 1/2

this gain, however, being insignificant. There are 5 figures and 5 references, 3 of which are Soviet.

SUBMITTED: June 6, 1957 (initially) and December 2, 1957 (after revision)

ASSOCIATION: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A. S. Popova (All-Union Scientific and Technical Society of Radio and Communications Engineering im. A. S. Popov)

87736
S/019/60/000/013/152/200/XX
A152/A027

6.9000

AUTHORS: Vollerner, N.F., and Gatkin, N.G.

TITLE: A Method for Measuring the Spectral Density Modulus of a Unit Signal

PERIODICAL: Byulleten' izobreteniy, 1960, Nr. 13, p. 39

TEXT: Class 21e, 36_{10}. Nr. 129747 (576499/A-1630/26 of Jun 16, 1952). The novel feature of this method is that its application makes it possible to determine a value proportional to the spectral density modulus at a given frequency. To this end a signal being investigated is electrically multiplied by a given frequency harmonic voltage, the product is electrically integrated, squared and summed up with a signal obtained by a similar operation in the conjugate channel, with the help of a harmonic voltage of the same frequency phase-shifted by a Π-2 (P-2) in regard to voltage in the first channel. The square root is then electrically extracted from the summary signal from the two channels.

Card 1/1

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E192/E382

AUTHORS: Belkin, M.K. and Gatkin, N.G.

TITLE: On the Problem of the Reception of Weak Signals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1960, Vol. 3, No. 2. pp 266-269

TEXT: Two radio-receivers are considered (Fig. 1). The first system is in the form of a single-channel device, consisting of a selective filter $\Delta\omega$, a square-law detector and an integrating circuit. It is shown that the noise-to-signal ratio at the output of this system is given by:

$$\left(\frac{\Pi}{C}\right)_{Bbix} = \sqrt{2}\sqrt{2\left(\frac{\Pi}{C}\right)^2_{Bbix} + \left(\frac{\Pi}{C}\right)^4_{BX}} \qquad (1)$$

where $(\Pi/C)^2_{BX}$ is the noise-to-signal ratio at the input. When the noise-to-signal ratio at the input is small, Eq. (1) can be written as Eq. (2). The second device of Fig. 1 is a two-channel system which receives input signals U_1 and U_2

Card 1/2

On the Problem of the Reception of Weak Signals

and correlated noises x_1 and x_2. It is shown that for the case when there is no correlation between x_1 and x_2, the noise-to-signal ratio at the output of this system is given by:

$$\left(\frac{\Pi}{c}\right)_{\text{Bbix}} = \frac{\sigma^2}{U^2} = \left(\frac{\Pi}{c}\right)_{\text{BX}} \qquad (5).$$

It is seen that the gain with respect to the first type of the receiver is $\sqrt{2}$, When x_1 and x_2 are correlated, the noise-to-signal ratio at the output is given by Eq. (6), where R_{12} is the correlation factor for x_1 and x_2. There are 1 figure and 4 Soviet references.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta (Chair of Radio-Receiving Equipment of the Order of Lenin Kiyev Polytechnical Institute)

SUBMITTED: February 26, 1959
Card 2/2

36945
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E192/E382

6,4400

AUTHORS: Vollerner, N.F., Balitskaya, V.G. and Gatkin, N.G.

TITLE: The problem of reception of pulse signals by the storage method

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 6, 1961, 679 - 685

TEXT: Two methods of pulse-storage reception are analyzed from the point of view of the signal-to-noise improvement at the output. It is assumed that storage takes place before the detector and that the filter of the receiver has a rectangular characteristic, whose bandwidth is considerably larger than the optimum. In the first method, a pulse signal $A \sin \omega_o t$, having a duration δ, is divided into n-portions which, after a delay, are superimposed on each other; the duration of each portion is $\Theta = \delta/n$ and this is a multiple of the number of periods of the carrier frequency f_o and is not less than the noise correlation interval $1/\Delta f$. The mixture of signal and

Card 1/5

noise U_c and $U_ш$ (where $U_ш$ is the noise) is applied to n inputs which are connected in parallel and which are successively opened for a time ④ = δ/n . Each of the inputs is opened after a time interval ⑦ with regard to the preceding input. Control of the inputs is performed by a special forming device. The pulses of signal and noise having a duration ⑨ from the input circuits are applied through delay lines to an adding circuit. The signals from the first input circuit are delayed by an interval $(n-1)\Theta$, that of the second circuit by $(n-2)\Theta$ and so on. It is shown that the gain in the signal-noise ratio due to the above system is expressed as:

$$Q_1 = \frac{P_{c1}/P_{ш1}}{P_{c1}'/P_{ш1}'} = n^2 \frac{\sigma_δ^2}{\sigma_Θ^2} \qquad (1)$$

where $n^2\sigma_Θ^2$ is the fluctuation noise at the output of the

receiver when the signal and noise are integrated over a period Ω, and σ^2_δ is the noise power at the receiver when integrated over the interval δ. In the second method, which is analogous to that described in Ref. 1 (M. Shvarts - Voprosy radiolokatsionnoy tekhniki, 43, no. 1, 1958, 3), the pulse signal after the filter of the receiver passes through a delay line having n outputs. The signal is delayed between two neighbouring outputs by a time $\delta/n = 1\Delta f$, which is equal to the correlation time of the noise and is a multiple of the period of the carrier frequency. As in the first methods, the pulse at the input of the delay line is rectangular and the rise time of the pulse can be neglected. Again, it is shown that the gain in the signal-noise ratio, due to the predetector storage, is expressed by Eq. (1).

It is now necessary to determine the noise powers in Eq. (1). It is shown that provided the bandwidth is much smaller than the carrier frequency the noise is expressed as:

$$\sigma^2 = b^4 \Delta\omega^2 k \qquad (3)$$

where b^2 is the noise power per unit bandwidth at the input of the detector and
k for the case of low signal/noise levels is given by:

$$k = \frac{4}{(\Delta\omega T)^2} (-1{,}577 + \cos \Delta\omega T + \\ + \Delta\omega T \mathrm{Si}\Delta\omega T - \ln \Delta\omega T + \mathrm{Ci}\Delta\omega T). \qquad (4)$$

The quantity T in Eq. (4) denotes the duration of the output pulse. By employing Eqs. (3) and (4) in conjunction with Eq. (1),

The problem of reception ....

it is found that gains up to 100 are possible. There are 5 figures and 1 table.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta (Department of Radio-receiving Devices of the Kiyev Order of Lenin Polytechnical Institute)

SUBMITTED: November 19, 1960

4

Card 5/5

27513
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E192/E382

9.6000

AUTHORS: Vollerner, N.F., Gatkin, N.G. and Tereshchuk, R.M.

TITLE: A suitable indicator for a frequency-analyzer

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 1, 1962, 85 - 90

TEXT: The principal difference between the results obtained from a numerical analysis of a waveform and an experimental processing of the waveform by means of a frequency-analyzer lies in the fact that the results of the former can be used to synthesize the shape of the waveform at the output of a network whose characteristic is known, while this synthesis is impossible by employing the results of the experimental analysis. It is therefore suggested that a frequency-analyzer can be made much more useful if its output filter is followed by three parallel systems which determine the maximum amplitude U_{max}, the root mean square value U_r and the average value U_m; secondly, the three devices from the following ratios, U_{max}/U_r and U_{max}/U_m. In order to determine whether these

Card 1/2

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E192/E382

ratios provide worthwhile information, their values are determined for the following cases: 1) a sinusoidal signal; 2) noise having normal probability density distribution; 3) a periodic train of radio pulses of duration τ and a period T with a rectangular envelope; 4) a periodic train of video pulses having a repetition period T; 5) a mixture of normal noise and a sinusoidal waveform and 6) a mixture of a train of periodic radio pulses and normal noise. It is found that for all the above cases the ratios U_{max}/U_m differ significantly. On the basis of U_{max}, U_r and U_m and their ratios, it is therefore possible to determine not only the frequency components but also the fine structure of the analyzed process. There are 5 figures.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta (Department of Radio-receiving Devices of the Kiyev Order of Lenin Polytechnical Institute)

SUBMITTED: November 19, 1960

33786
S/108/62/017/002/001/010
D201/D305

6.9210

AUTHORS: Vollerner, N.F., Gatkin, N.G., and Karnovskiy, M.I., Members of the Society (see Association)

TITLE: Interference-killing properties of a receiver producing a combination of readings of an autocorrelation function ("combination of self-correlation function readings")

PERIODICAL: Radiotekhnika, v. 17, no. 2, 1962, 3 - 9 (MIRA 15:2)

TEXT: The authors show that in a correlation arrangement, in which the signal $U_{out.s}(T)$ at the output is formed by combined readings of autocorrelation functions, taken with certain weighting factors A_i, it is possible to achieve additional improvement in the S/N ratio. The signal at the integrator output in this case has the form

$$U_{out.s}(T) = \sum_{i=0}^{n} A_i \frac{1}{T} \int_0^T U_c(t)U_c(t - \tau_i)dt. \qquad (1)$$

Card 1/5

Interference-killing properties ...

Fig. 1 shows the block diagram of the correlation arrangement according to (1). The mixed pulse signal and fluctuating interference, after the Π-shaped frequency response filter with pass band $\Delta f \gg \tau_p$ (where τ_p is the pulse duration) is applied to a multiplier. The sum of mixed signals, passed through n-changes is applied to the second input of the amplifier, every channel delays the signal by time

$$\tau_i = i\tau_1 \qquad i = 0, 1, 2, \ldots, n \qquad (2)$$

where

$$\tau_1 = \frac{1}{\Delta f} . \qquad (3)$$

It is shown that the circuit of Fig. 1 has the output signal according to (1) and it is shown that at any $i \neq 0$, as determined by relationships (2) and (3), the dispersion of noise is determined by

$$D\left\{U_n(t)U_n(t - \tau_i)\right\} \approx \frac{1}{2} D\left\{U_n^2(t)\right\} . \qquad (13)$$

the following deduction are also made: The derivation of (13) proves that the character of power frequency spectra of fluctuations

Interference-killing properties ...

for maximum of function Ψ, so that the problem of determining the weighting factors A_i reduces to determining i partial derivatives of $\Psi(M_i, m_i)$ with respect to M_k and equating them to zero which leads to a recurrent expression for the optimum values of weighting factors as given by

$$N_k = \frac{m_k \sum_{i=1,\, i\neq k}^{n} N_i^2}{\sum_{i=1,\, i\neq k}^{n} N_i m_i} . \qquad (30)$$

where $N_i = A_i/A_1$. There are 4 figures and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Schwartz. Commun. a. elect., no. 23, 1956.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov)

Card 4/5

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

Interference-killing properties ...

of the process is $u_n^2(t)$ and $U_n(t)U_n(t - \tau_i)$ is practically the same. It follows that for any i the magnitude of the coefficient k_i, relating the dispersion of noise at the input and output of the integrator, is independent of i and, therefore,

$$k_i = k \qquad (20)$$

and that the intensity of power spectrum fluctuation of the process $u_n^2(t)$ is approximately twice that of the process $u_n(t)u_n(t-\tau)$. It follows from (13) and (20) that the signal-to-noise ratio at the output $(S/N)_{out}$ is directly proportional to $\Psi(M_i, m_i)$ as given by

$$\Psi(M_i, m_i) = \frac{1 + \sum_{i=1}^{n} M_i m_i}{\sqrt{1 + \frac{1}{2}\sum_{i=1}^{n} M_i^2}}, \qquad (23)$$

where $M_i = \frac{A_i}{A_o}$ and $m_i = \frac{\tau_p - i\tau_1}{\tau_p}$ and maximum improvement is obtained

Card 3/5

33786
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Interference-killing properties ...

[Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: April 28, 1961

Fig. 1.

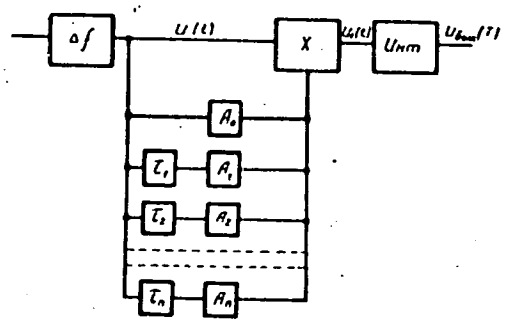

Рис. 1

Card 5/5

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BOOK EXPLOITATION

S

Gatkin, Natan Grigor'yevich (Candidate of Technical Sciences); Geranin, Vsevolod Aleksandrovich (Candidate of Technical Sciences); Karnovskiy, Mark Il'ich (Doctor of Technical Sciences)

Integrators in measuring systems (Integratory* v sistemakh izmereniya) Kiev, Gostekhizdat USSR, 1963. 138 p. illus., biblio. Errata slip inserted. 2400 copies printed. Reviewer: Zarenin, Yu. G. (Candidate of Technical Sciences); Managing editor: Pisarenko, M. G. (Engineer); Editor: Skubchenko, S. A. (Engineer); Technical editor: Berezovyy, V. N.; Proofreader: Fialova, L. A.

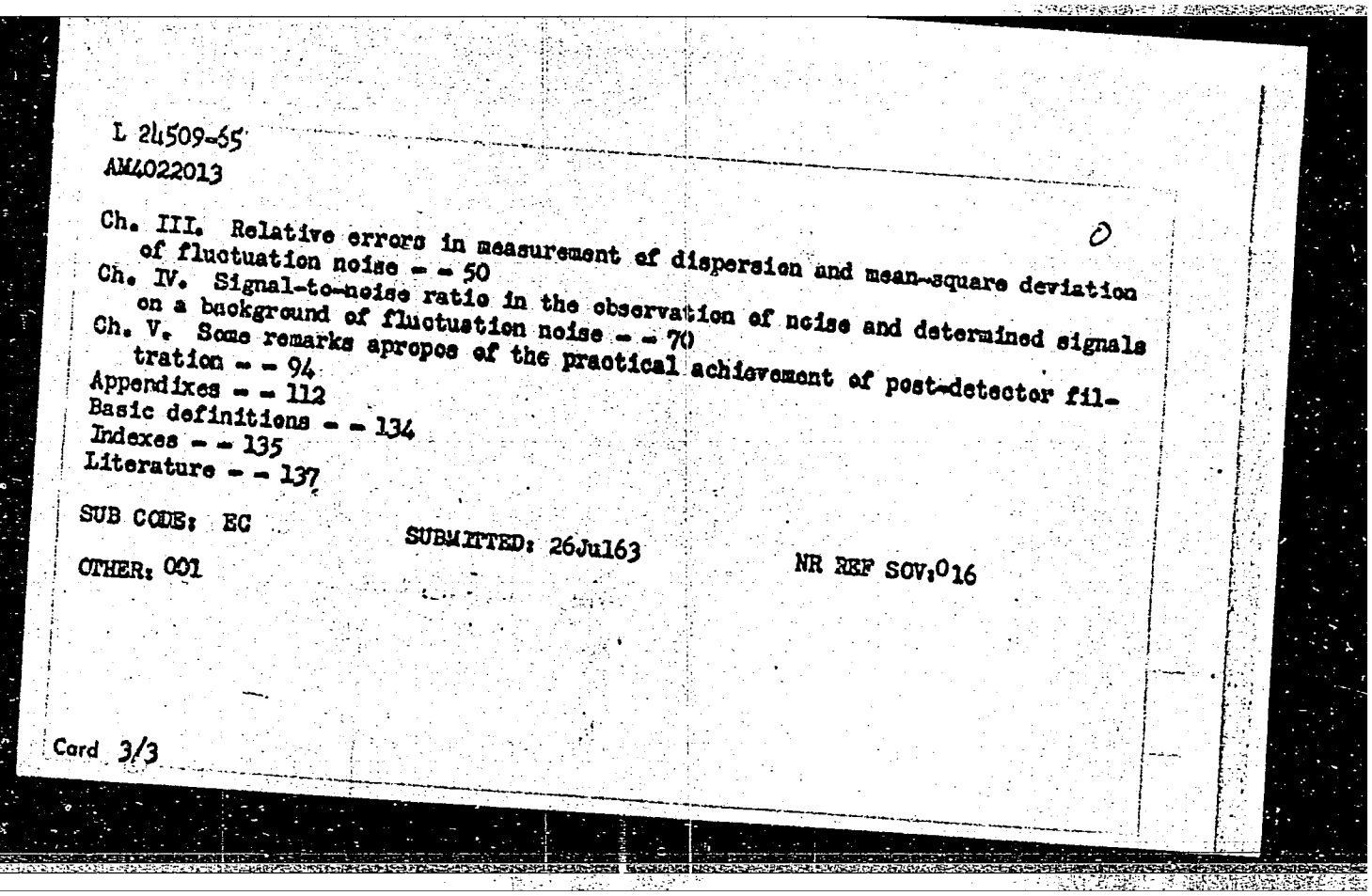
TOPIC TAGS: integrator, measuring system, radio engineering, automation, telemechanization, radiometry, band filter, detector, low frequency filter, fluctuation noise, ideal integrator, ideal characteristic integrator, commutator RC circuit

PURPOSE AND COVERAGE: This book is intended for scientists and technicians working in the fields of radio engineering, automation, telemechanization, and radiometry, and may be of use also to senior students in the corresponding speciali-

Card 1/3

zations. The operation of the typical radio-engineering track of a band filter - inertialess detector - low-frequency filter under conditions of measuring dispersion, the mean-square deviation of fluctuation noise, and the observation of signals (noise and determined) on a background of fluctuation static is analyzed. Special attention is paid to comparative evaluation of the effectiveness of different variations of a low-frequency filter: an ideal integrator, an ideal characteristic integrator, and a commutator RC-circuit. The authors express their gratitude to V. G. Lozovik, Assistant in the Kafedra Matematicheskoy Fiziki of the Kiyevskiy Politekhnicheskiy Institut.

TABLE OF CONTENTS:



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SUB CODE: EC SUBMITTED: 26Jul63

OTHER: 001 NR REF SOV:016

Card 3/3

L 10282-63
ACCESSION NR: AP3001129

S/0108/63/018/006/0056/0061

AUTHOR: Vollerner, N. F.; Gatkin, N. G.; Daletskiy, Yu. L.; Yaroshenko, V. V. 44
Members of the Society (see Association)

TITLE: Multichannel measurement of fluctuating voltages

SOURCE: Radiotekhnika, v. 18, no. 6, 1963, 56-61

TOPIC TAGS: measuring fluctuating voltages

ABSTRACT: A case is considered when low-level fluctuating voltages on several channels are to be combined and measured. Each voltage is amplified, and the amplifier noise is also assumed fluctuating. Gaussian distribution and similar spectral characteristics are assumed. The amplifier output voltages are combined by a transducer and then measured by a permanent-magnet moving-coil instrument. The mixture of measurand and noise voltages undergoes an "optimum conversion" in the transducer. A mathematical analysis presented in the article shows that: (1) in case of entirely uncorrelated measurands, they should be first summed and then squared; (2) in case of entirely correlated measurands, they should be first squared and then summed. Orig. art. has: 23 formulas and 1 figure.

Card 1/2

VOL'F, V.M.; GATKIN, N.G.; GERANIN, V.A.; KARNOVSKIY, M.I.

Interference rejection of a receiving channel "band filter - detector - lower frequencies filter - threshold device." Izv.vys.ucheb.zav.; radiotekh. 8 no.4:404-410 Jl-Ag '65. (MIRA 18:11)

1. Submitted May 7, 1964.

L 5130-66 EWT(d)/FSS-2

ACCESSION NR: AP5020118

UR/0109/65/010/008/1410/1417
621.391.161

AUTHOR: Gatkin, N. G.; Daletskiy, Yu. L.

TITLE: Optimal detection of an accurately known signal with a nonstationary Gaussian noise as a background

SOURCE: Radiotekhnika i elektronika, v. 10, no. 8, 1965, 1410-1417

TOPIC TAGS: signal detection

ABSTRACT: A known signal $a(t)$ $(0 \leq t \leq T)$ is considered with a Gaussian background noise $\xi(t)$ with an average $M[\xi(t)] = 0$ and a known correlation function $R(t, \tau) = M[\xi(t)\xi(\tau)]$. This function is the kernel of the integral equation $\int_0^T R(t, \tau) b(\tau) d\tau = a(t)$, whose right-hand member is represented by the above known signal. The proposed optimal receiver depends on computing the likelihood ratio,

Card 1/2

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L 5130-66
ACCESSION NR: AP5020118

which helps to isolate the desirable signal; this ratio is calculated by a technique based on an expansion of the kernel $R(t, \tau)$ into its eigen-functions. As a direct and exact solution of the above integral equation is practically impossible, the function b(t) is determined by an approximation. A functional block diagram illustrates the idea of an optimal receiver based on the above considerations. Orig. art. has: 2 figures and 56 formulas.

ASSOCIATION: none

SUBMITTED: 04Apr64 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 002

Card 2/2

L 5093-66 EWT(d)/FSS-2

ACCESSION NR: AP5020119

UR/0109/65/010/008/1418/1425
621.391.14

AUTHOR: Gatkin, N. G.; Goranin, V. A.; Karnovskiy, M. I.; Krasnyy, L. G.; Cherney, N. I.

TITLE: Probability density of the derived phase of a modulated signal combined with a Gaussian noise

SOURCE: Radiotekhnika i elektronika, v. 10, no. 8, 1965, 1418-1425

TOPIC TAGS: signal detection

ABSTRACT: This formula has been developed for a single-variable density of probability of the derived phase of a combination that comprises an amplitude- and-angle-modulated radio signal and a Gaussian noise:

$$W_1(\dot{0}) = \frac{1}{16\pi B\rho\sqrt{\rho\delta_1}} \exp\left(K + \frac{\lambda_2+\nu_2}{2}\right)\left\{(\lambda_1+\nu_1) I_0\left[\frac{1}{2}\sqrt{\mu_2^2+(\lambda_2-\nu_2)^2}\right] + \right.$$
$$\left. + \frac{\mu_1\mu_2+(\lambda_1-\nu_1)(\lambda_2-\nu_2)}{\sqrt{\mu_2^2+(\lambda_2-\nu_2)^2}} I_1\left[\frac{1}{2}\sqrt{\mu_2^2+(\lambda_2-\nu_2)^2}\right]\right\}. \quad (28)$$

Card 1/2

0901/0697

L 5093-66

ACCESSION NR: AP5020119

The formula allows for the stagger between the signal carrier frequency and the frequency ω_0 corresponding to the maximum spectral density of the noise average power $F(\omega)$; it also allows for the asymmetry between $F(\omega)$ and ω_0. The formula encompasses all particular cases dealt with earlier in various publications (S. O. Rice, BSTJ, 1948, v. 27, p. 109; D. Middleton, J. Appl. Phys., 1948, v. 19, p. 817). Curves are supplied which correspond to a linear FM of the signal. Orig. art. has: 7 figures and 49 formulas.

ASSOCIATION: none

SUBMITTED: 01Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 003 OTHER: 002

Card 2/2

GATKIN, Ye.D. (Barnaul)

Acute lupus erythematosus. Klin. med. 40 no.12:120-124 D '62. (MIRA 17:2)

1. Iz Altayskogo krayevogo kozhno-venerologicheskogo dispansera.

ABRAMOVICH, L.A., dotsent; IGUMNOV, A.K., kand. med. nauk; AHSMARIN, Ya.Ya., kand. med. nauk; GATKIN, Ye.D.; SERGEYEV, S.Ya.; YEFIMOV, M.L., kand. med. nauk.

Dermatologic casuistics. Vest. derm. i ven. 37 no.6:76-77 Je '63. (MIRA 17:6)

1. Klinika kozhnykh i venericheskikh bolezney, Chita (for Abramovich, Igumnov). 2. Kozhnoye otdeleniye Glavnogo voyennogo gospitalya imeni N.N. Burdenko (for Ashmarin). 3. Altayskiy kozhno-venerologicheskiy dispanser (for Gatkin). 4. Kafedra kozhnykh i venericheskikh bolezney, Semipalatinsk (for Sergeyev, Yefimov).

GATKIN, Ye.D.; LYUBKIN, I.V.; NIKONOVA, N.A.

Hospital outpatient service for patients with lupus erythematosus and psoriasis. Vest. derm. i ven. 37 no.7:67-69 Jl '63
(MIRA 16:12)

1. Altayskiy krayevoy kozhno-venerologicheskiy dispanser (glavnyy vrach Ye.D. Gatkin).

[illegible], [illegible]. A.

"Scientific-Methodical Conference of [illegible] [illegible] [illegible] Institutions of the USSR Ministry of Agriculture,"

[illegible]: Veterinariya, Vol 26, No [illegible], pp [illegible], 194[illegible].

1. GATLIKH, G. A.

2. SSSR (600)

4. Veterinary Colleges

7. Summary of admissions to and graduations from Veterinary Schools and Departments in 1952.
Veterinaria 29 No. 11, 1952

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

GATLIKH, Galina Aleksandrovna; KORNEV, A.I.; LITVINENKO, A.N.

[Agricultural institutions of higher learning of the U.S.S.R.] Sel'skokhoziaistvennye vuzy SSSR. Moskva, Vysshaia shkola, 1965. 366 p. (MIRA 18:10)

'GATLIN, Carl; CIZMIC, Nikola, inz. [translator]

Fundamentals of rotary drilling. Nafta Jug 13 no.7:164-168 Jl '62.

GATMASHEV, D. L.

29T100

USSR/Ships - Launching Jan/Feb 1947
Submarines - Construction

"Launching Submarines by a Single Runner," D. L. Gatmashev, 4 pp

"Sudostroyeniye" No 1

The author presents several cross-sectional views of slipways and ship hull shoring to substantiate his data on the use of one-runner slipways for launching submarines. This article makes frequent reference to the same method, which was put into use by the Germans during the peak of their submarine building campaign. Basically this seems to have been carried out with the aid of a cradle around the stern section of the hull.

BS

29T100

KOROTKIY, Anatoliy Fedorovich; GATNENKO, A., red.; GONCHAR, A., red.; ZELENKOVA, Ye., tekhn.red.

[Principles of construction] Osnovy stroitel'nogo dela. Kiev, Gos.izd-vo lit-ry po stroit. i arkhit. USSR, 1961. 220 p. (MIRA 14:7)

(Construction industry)

ISHCHENKO, Yuriy Nikolayevich; ALEKSANDROVSKIY, A., red.; GATNENKO, A., red.; GABIL'CHANOVA, G., tekhn. red.

[Reinforced-concrete structures] Zhelezobetonnye konstruktsii. Kiev, Gosstroiizdat USSR, 1963. 286 p. (MIRA 16:7)
(Reinforced concrete construction)

BRUSILOVSKIY, Isaak Abramovich [Brusylovs'kyi, I.A.], kand. med. nauk; GATNENKO, S.O. [Hatnenko, S.O., translator]; ZEMBITSKAYA, Z.S. [Zembyts'ka, Z.S.], red.; ZAPOL'SKAYA, L.A. [Zapol's'ka, L.A.], tekhn. red.

[Female sterility and its treatment in the Saki mud bath resort] Bezplidnist' zhinok i ii likuvannia na Saks'komu hriaz'ovomu kurorti. Kyiv, Derzhmedvydav URSR, 1963. 28 p. (MIRA 16:12)

(STERILITY)
(SAKI (CRIMEA))—HEALTH RESORTS, WATERING PLACES, ETC.)

GATO, R.

Qualifications of workers in electric enterprises.

p. 16 (Teknika) Vol. 4, No. 4, July/Aug. 1957. Tirane, Albania.

SO: Monthly Index of East European Accessions (EEAI) LC, - Vol 7, No. 1, Jan. 1958

GATOSCHI, G.

MARINESCU, Voinea,.; GHITESCU, Tiberiu,; GATOSCHI, Gatoschi,; STEFANESCU, Traian,; STANCESCU, Mihai,; LITARCZEK, George.

Experimental and clinical angiocardiography with heart catheterization. Probl. ter., Bucur. Vol 1:191-207 1954.

(ANGIOGRAPHY
angiocardiography with heart catheterization in various cardio-mediastinal disord)
(HEART
catheterization with angiocardiography in various cardio-mediastinal disord.)
(CARDIOVASCULAR DEFECTS, CONGENITAL, diagnosis
angiocardiography with heart catheterization)

MARINESCU, Voinea,; GHITESCU, T.,; STEFANESCU, Tr.,; GATOSCHI, G.

Cardiac catheterization. Bul stiint., sect. med. 7 no.4:1003-1018 Oct-Dec 55.

(HEART
catheterization, technic & possible compl.)

JUVARA, I.; GATOSCHI, Gh.; LUPU, A.; PRISCU, Al.

Clinical and radiological study of biliary, duodenal and pancreatic disorders after the Reichel-Polya type of gastropylorectomy. Probl.ter., Bucur. 2:7-31 1955.

1. Institutul de terapeutica al Academiei R.P.R., Sectia de chirurgie, spitalul Coltea si clinica a V-a chirurgicala.
(STOMACH, surg.
gastropylorectomy, postop. biliary, duodenal & pancreatic disord.)
(BILIARY TRACT, dis.
dysfunct. caused by gastropylorectomy & postop. dystonia)
(DUODENUM, dis.
postop. dystonia & dysfunct. caused by gastropylorectomy)
(PANCREAS, dis.
(same))

HORTOLOMEI, N., Academician; GHITESCU, T.; GATOSCHI, Gh.; STEFANESCU, Tr.; BOIU, S.; PROINOV, Fr.

Experimental and clinical research on coronary circulation.
Probl. ter., Bucur. 10 no.3:77-85 '59.
(CORONARY VESSELS, physiology)

GATOV, A.G. [translator]; GINGOL'D, L.S. [translator]; GREBENNIKOVA, Ye.N., [translator]; ZANEGIN, B.N. [translator]; ZVONOV, A.A. [translator]; ISAYENKO, B.S. [translator]; KOTOV, A.V. [translator]; MAYZEROV, S.M. [translator] SAFONOVA, Z.M. [translator]; SOVETOV, I.I. [translator]; SOROKIN, V.F. [translator]; TSVETKOVA, T.Ya. [translator]; CHZHOU, Sun-yuan' [translator]; SOGOMONYAN, G.S. [translator], redaktor; SHAPOVALOV, V.I., tekhnicheskiy redaktor

[Socialist developmen t in the Chinese village; a collection of articles prepared by the office of the Central Committee of the Chinese Communist Party] Sotsialisticheskii pod"em v kitaiskoi dereven; sbornik izbrannykh statei podgotovlen kantseliariei TsK KPK. Moskva, Izd-vo inostrannoi lit-ry, 1956. 502 p. (MLRA 9:10)
(China--Agriculture)

...ov, B. I. I. SUKHANOV, G. I.

5537 Gatov, B. I. I. Sukhanov, G. I. S vobodnaya kovka pod molotami. Pod Red. P. V. Kamneva. L, 1954. 36 s. s. Chert. 21 sm. (Vsesoyuz. O-Vo Po rasprostraneniyu Polit. i nauch. znaniy Leningr. Dom nauch.-tekhn. Propagandy. Dom. Kuznetsov i shtampovshchikov Lonitomash. B-chka kuznetsa-navatora. vyp. 7) 6.250 eks. 80k.— (55-1247) P 621.73

SO: Knizhnaya Letopis' , Vol. 1, 1955

KAMIEV, P.V.; YEKIMOV, K.K.; QAFOV, B.I., inzhener, retsenzent; OBOLDUYEV, G.T., inzhener, redaktor; POL'SKAYA, R.G., tekhnicheskiy redaktor

[Machanization of laborious operations in forge shops] Mekhanizatsiia trudoemkikh operatsii kuznechnogo proizvodstva. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 46 p.
(Forging)
(MLRA 7:11)

GATOV, Boris Iosifovich; DUBINSKIY, Naum Grigor'yevich; ZINOV'YEV, Nikolay Afanas'yevich; MALAKHOVSKIY, Grigoriy Viktorovich; NOVIKOV, Fedor Andreyevich; ZUDENKOV, Leonid Mikhaylovich; REZNICHENKO, Fred Samoylovich; SOKOLOV, Nikolay Nikolayevich; POTING, L.Yu., [deceased] redaktor; FRUMKIN, P.S., tekhnicheskiy redaktor

[Production of cast, welded and forged chains] Proizvodstvo litykh, svarnykh i shtampovannykh tsepei. Leningrad, Gos.soiuznoe izd-vo sudostroitel'noi promyshlennosti, 1955. 267 p. (MLRA 9:1)
(Chains)

BULGAKOV, Boris Sergeyevich; GATOV, B.I., red.; FREGER, D.P., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Adopting the group method of press forging die blocks] Osvoenie gruppovoi tekhnologii kovki shtampovykh kubikov pod pressami. Leningrad, 1962. 21 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia; Goriachaia i kholodnaia obrabotka metallov davleniem, no.7) (MIRA 16:3)

(Forging)

GATOV, D.M., inzh.; LOZHECHNIKOV, Ye.B., inzh.

Diesel-electric bucket loader. Mash.Bel. no.6:29-32 '59.
(MIRA 13:6)

(Conveying machinery)

GATOV, G.N.; MASTITSKIY, Ye.P., dotsent

Angular measurement at sharply varying distances for sighting purposes. Sbor. nauch. trud. Kaz GMI no.19:136-139 '60. (MIRA 15:3)
(Mine surveying)

GATOV, T.A.

Further improving the methods of the economic evaluation of nonferrous metal deposits. Izv. vys. ucheb. zav.; tsvet. met. 4 no. 1:154-164 '61. (MIRA 14:2)

1. Sibtsvetmetniiproyekt i Krasnoyarskiy institut tsvetnykh metallov.
(Ores--Sampling and estimation) (Nonferrous metals)

KLEYMAN, M.N.; BUYMISTRENKO, N.K.; GATOVA, F.L.

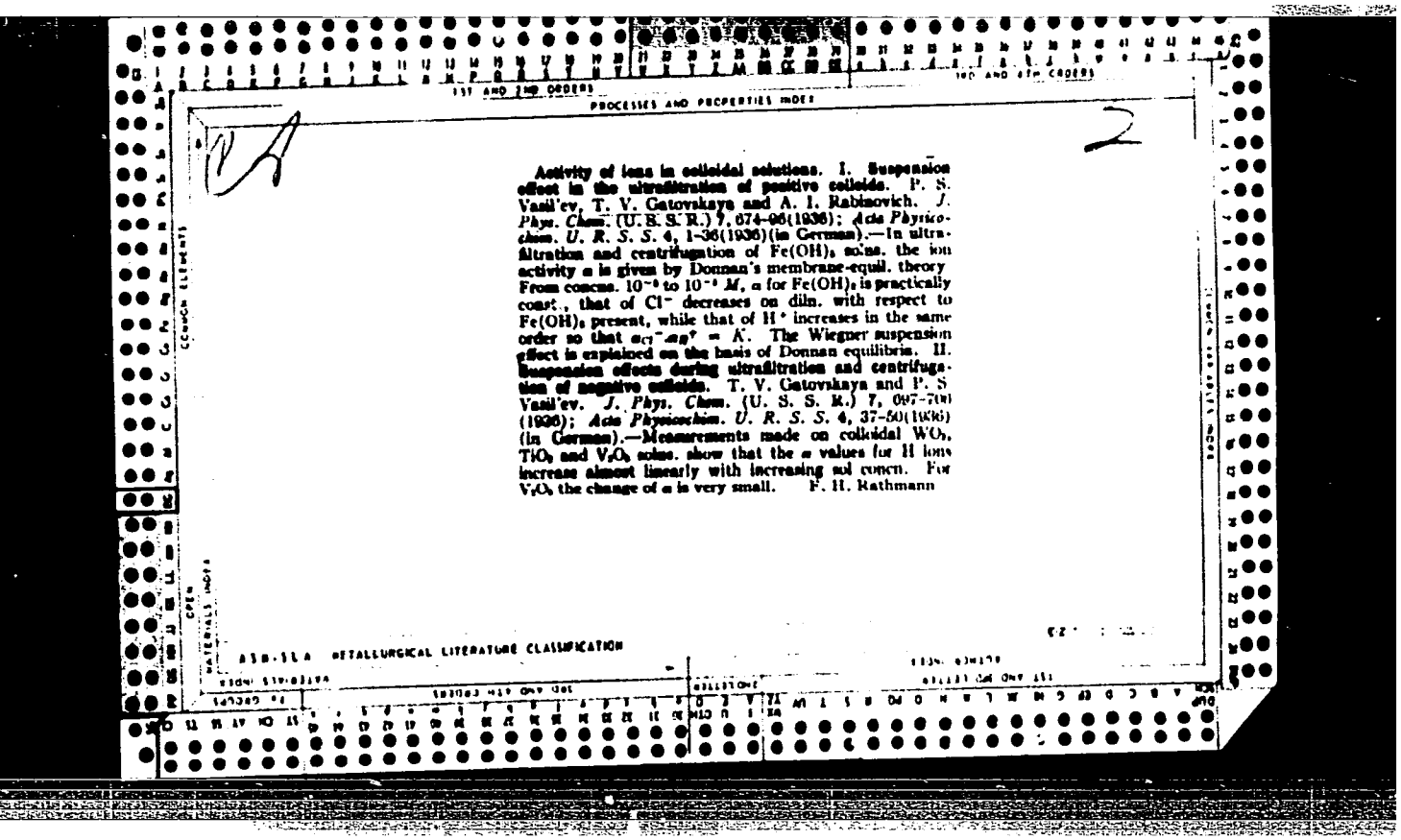
Disability evaluation of young miners in anthracosilicosis.
Uch.zap.Mosk.nauch.-issl.inst.san.i gig. no.8:53-57'61.
(MIRA 16:7)

1. Rostovskiy filial TsNIETIK.
(DISABILITY EVALUATION) (LUNGS—DUST DISEASES)
(COAL MINERS—DISEASES AND HYGIENE)

GATOVA, S.B.

Late results of the over-all treatment of the aftereffects of cranial injuries. Vop. kur., fizioter. i lech. fiz. kul't. 25 no.2: 138-141 Mr-Ap '60. (MIRA 13:9)

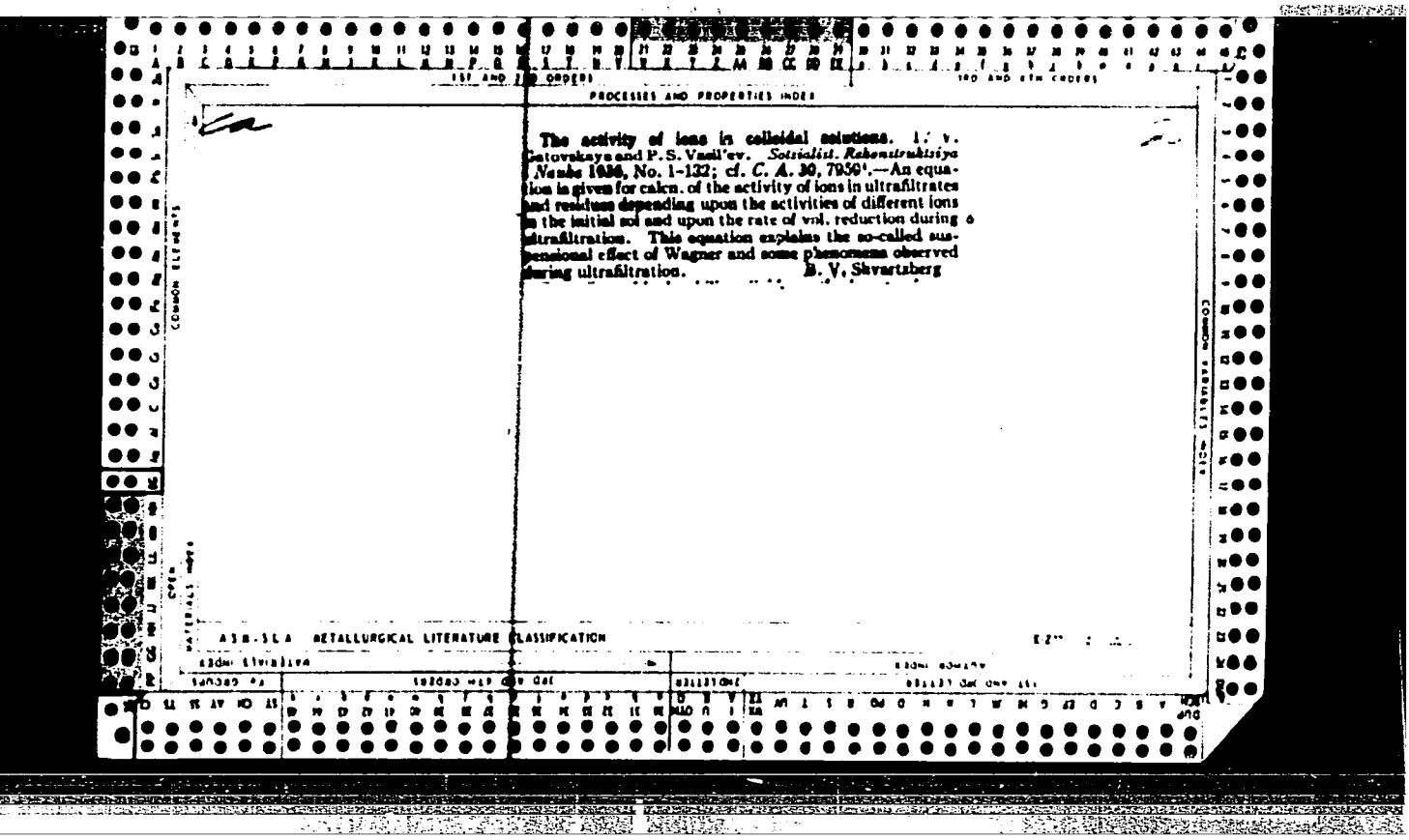
1. Iz Gor'kovskogo nevrologicheskogo gospitalaya dlya invalidov Otechestvennoy voyny (nachal'nik A.D. Yagovkina).
(SKULL—WOUNDS AND INJURIES)



PROCESSES AND PROPERTIES INDEX

Activity of ions in colloidal solutions. I. Suspension effect in the ultrafiltration of positive colloids. P. S. Vasil'ev, T. V. Gatovskaya and A. I. Rabinovich. *J. Phys. Chem.* (U. S. S. R.) 7, 674-96(1936); *Acta Physicochim. U. R. S. S.* 4, 1-36(1936)(in German).—In ultrafiltration and centrifugation of $Fe(OH)_3$ sols, the ion activity a is given by Donnan's membrane-equil. theory From concns. 10^{-6} to 10^{-3} *M*, a for $Fe(OH)_3$ is practically const., that of Cl^- decreases on dilu. with respect to $Fe(OH)_3$ present, while that of H^+ increases in the same order so that $a_{Cl^-}a_{H^+} = K$. The Wiegner suspension effect is explained on the basis of Donnan equilibria. II. Suspension effects during ultrafiltration and centrifugation of negative colloids. T. V. Gatovskaya and P. S. Vasil'ev. *J. Phys. Chem.* (U. S. S. R.) 7, 697-708(1936); *Acta Physicochim. U. R. S. S.* 4, 37-50(1936)(in German).—Measurements made on colloidal WO_3, TiO_2 and V_2O_5 sols. show that the a values for H ions increase almost linearly with increasing sol concn. For V_2O_5 the change of a is very small. F. H. Rathmann

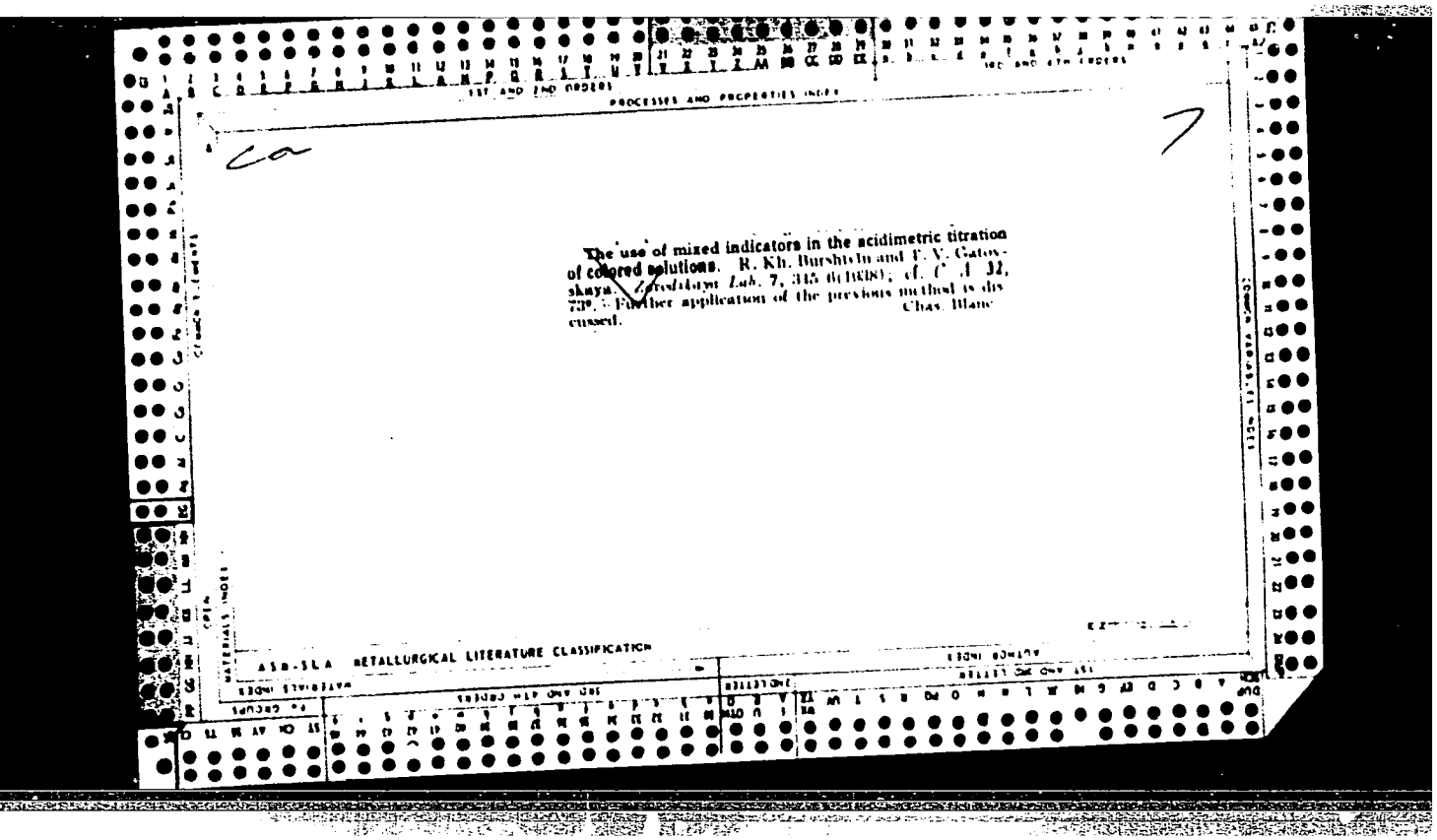
A58-11A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

The activity of ions in colloidal solutions. I. V. Gatovskaya and P. S. Vasil'ev. *Sotsialist. Rekonstruktsiya Nauke* **1936**, No. 1-132; *cf. C. A.* **30**, 7956⁴.—An equation is given for calcn. of the activity of ions in ultrafiltrates and residues depending upon the activities of different ions in the initial sol and upon the rate of vol. reduction during ultrafiltration. This equation explains the so-called suspensional effect of Wagner and some phenomena observed during ultrafiltration. B. V. Shvartsberg

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The use of mixed indicators in the acidimetric titration of colored solutions. R. Kh. Burshtein and F. V. Gatovskaya. *Zavodskaya Lab.* 7, 345 (1938); cf. C. A. 32, 729. Further applications of the previous method is discussed.

Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

Active alkalinity and adsorption of alkali in solutions prepared from the mucilage of castor oil plant and soybeans. A. Pasynskii and T. Chatovskaya. *J. Appl. Chem. (U. S. S. R.)* 12, 1080-7 (in French, 1087)(1939). The pH of 10% mucilage solns. contg. 1, 2, 4, 6, 8 and 10% NaOH of the wt. of the mucilage was detd. by means of the glass electrode at room temp. before and after heating the solns. to 80°. The electrode showed higher potentials in highly viscous solns. than those obtained from the standardization curve. The protein absorbed about 0.3% of the added NaOH. The absorption values were 3-4 times higher than the adsorption satn. values; this is attributed to chem. reaction between NaOH and protein, with disaggregation of the protein particles. Increase of NaOH concn. and heating of the solns. increased the disaggregation of the particles. A. A. Podgorny

METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Diffusion of linear macromolecules. I. The method of measurement. T. V. Gatovskaya and A. G. Pasynskii. *J. Phys. Chem. (U.S.S.R.)* 20, 707-14(1946). An app. to measure diffusion coeffs., *D*, according to Lamm is described. As an example, detn. of *D* of sucrose and of gelatin is explained in detail. **II. The molecular weight and the polydispersity of rubber from diffusion measurements.** A. G. Pasynskii and T. V. Gatovskaya. *Ibid.* 715-23; cf. C. A. 40, 4540[?]. *D* and the specific viscosity η of 0.1-0.2% solns. of various rubbers in CCl_4 are detd. From η the ratio *r* of the length to the thickness of the particles, from *r* the coeff. of friction, and from this coeff. and *D* the mol. wt. *M* of the particles are calcd. The ratio D/D_1 of the coeff. of diffusion calcd., resp., from the standard deviation and from the height of the curve "refractive index deviation against distance" is a measure of the polydispersity. The values of $D \times 10^7$, *r*, *M*, and D/D_1 are for a natural rubber 0.71, 117, 841,000, and 1.17; for a reprptd. natural rubber 0.66, 121, 975,000, and 1.18; for a natural rubber heated in air at 110° 1.0, 88, 101,000, and 1.72; for a com. bivinyl rubber 2.1, 65, 73,000, and 1.13; for a lab. bivinyl rubber freed from the monomer 3.5, 11, 28,100, and 1.37; and for a lab. bivinyl rubber contg. some monomer 5.4, 31, 10,000, and 2.00. The *M* values calcd. from η are, at *M* less than 100,000, much smaller than the above values.

J. J. Bikerman

Lab. Colloidal Chem. Karpov Physico-chem. Inst.

8

METALLURGICAL LITERATURE CLASSIFICATION

GATOVSKAYA, T.

USSR/Chemistry - Rubber
Chemistry - Molecular Weight

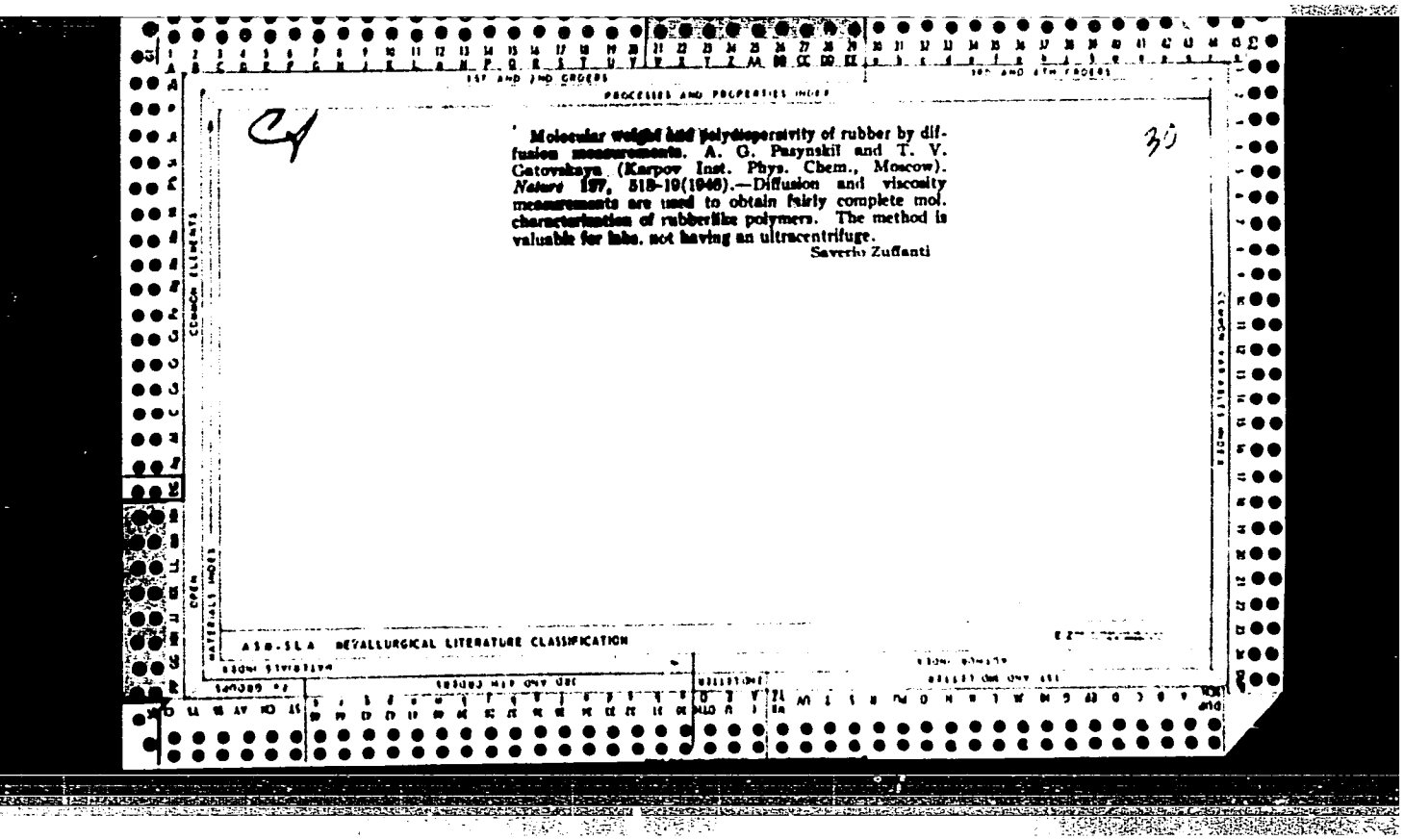
Nov/Dec 46

"Determination of Molecular Weight and Polydispersity of Rubber From Diffusion Measurements," A. Passynskiy, Lab Colloid Chem, Karpov Inst Phys Chem, T. Gatovskaya, Lab Macromolecular Structure, Back Biochem Inst, Acad Sci USSR, 20 pp

"Acta Physicochimica URSS" Vol XXI, No 6

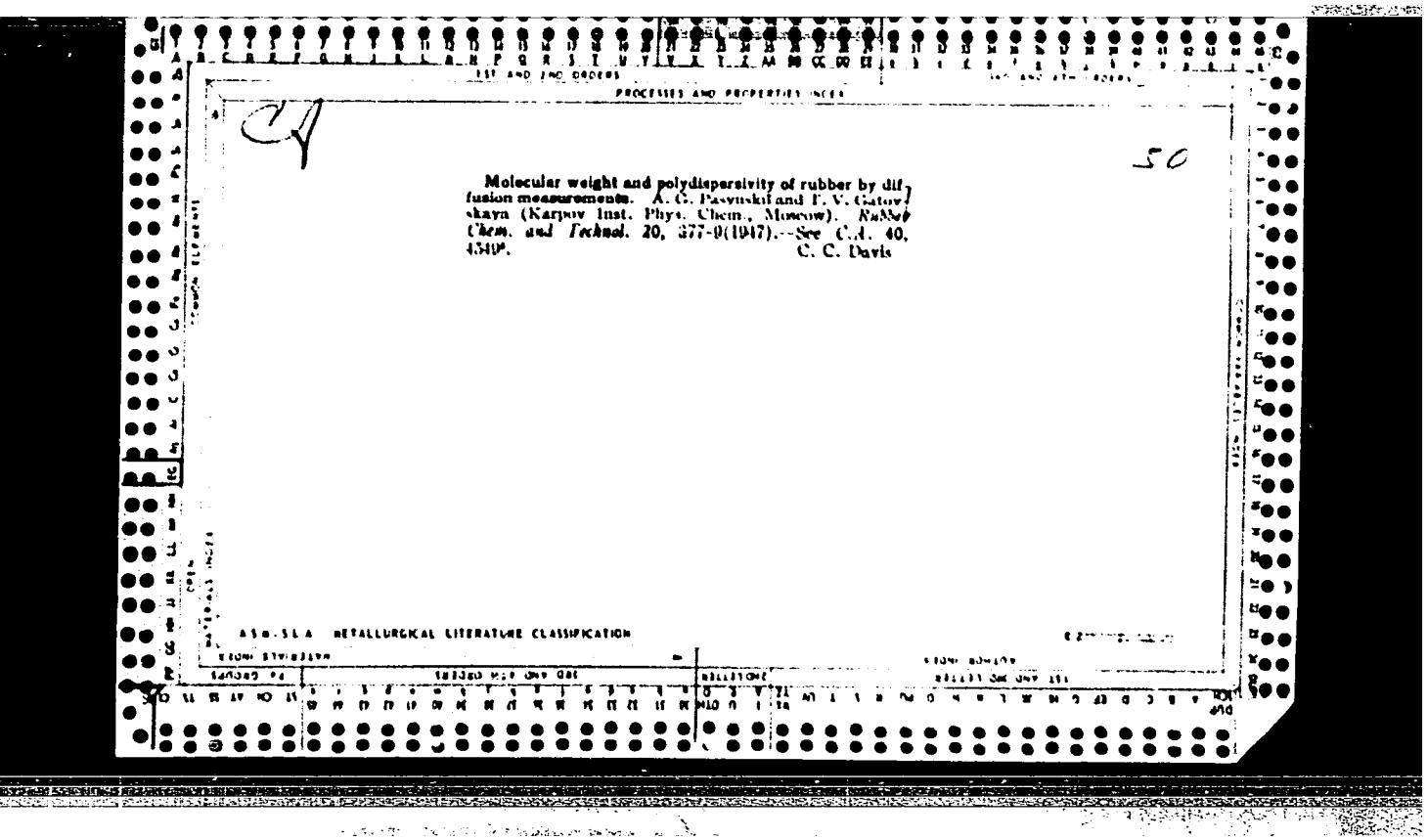
Computes molecular weight for three rubber samples from measurements of diffusion coefficients and asymmetry of particles; calculates polydispersity coefficients. Notes close correspondence between variations of diffusion coefficient and molecular weight for rubber. Received, 4 Sep 1945.

PA 54T33



Molecular weight and polydispersivity of rubber by diffusion measurements. A. G. Pasynskii and T. V. Gatovskaya (Karpov Inst. Phys. Chem., Moscow). *Nature* 157, 518-19(1946).—Diffusion and viscosity measurements are used to obtain fairly complete mol. characterization of rubberlike polymers. The method is valuable for labs. not having an ultracentrifuge.

Saverio Zuffanti



PROCESSES AND PROPERTIES INDEX

C4

50

Molecular weight and polydisperaivity of rubber by diffusion measurements. A. G. Pasynskii and T. V. Galovshaya (Karpov Inst. Phys. Chem., Moscow). *Rubber Chem. and Technol.* 20, 377-9(1947).—See C.A. 40, 4340. C. C. Davis

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Gatovskaya, T. A.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 40/63

Authors : Kargin, V. A., Academician; and Gatovskaya, T.A.

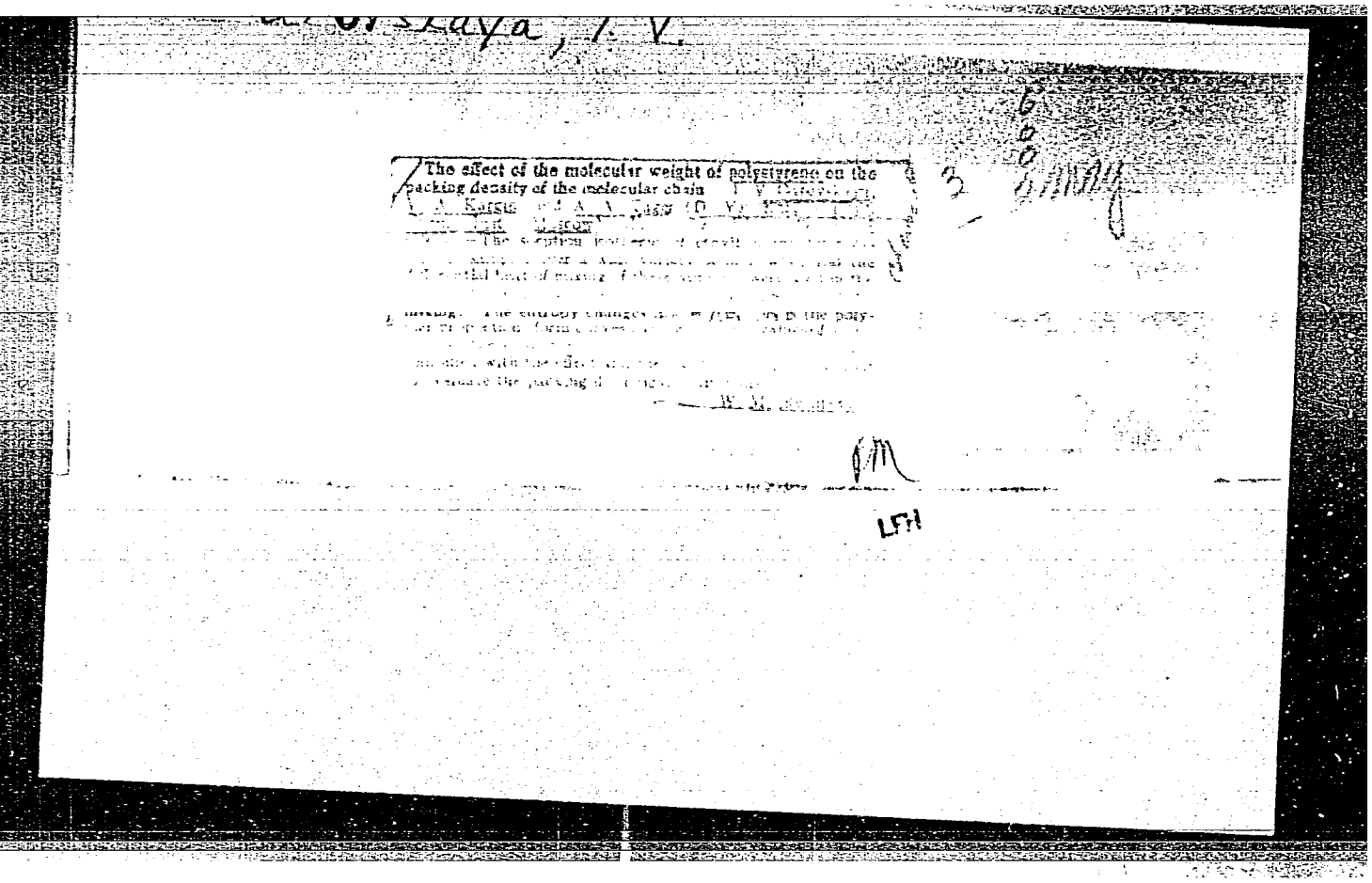
Title : Effect of crystallization on the sorption of hydrocarbons by natural rubber and guttapercha

Periodical : Dok. AN SSSR 99/6, 1037-1039, Dec 21, 1954

Abstract : Experimental data show that the sorption isotherms for amorphous and crsytalline natural rubber are practically identical, i.e., the presence of the crystalline phase does not change the sorptionability of the rubber. The observed difference between the sorption isotherm of natural rubber and that of guttapercha was found to be due not to the phase state but to the differnce in structure and flexibility of the chains. The thermodynamic activity and consequently the sorptionability of amorphous polymers were determined by the flexibility of the molecular chains. Seven refernces: 1-USA; 1-Swiss and 5-USSR (1935-1953). Graphs.

Institution: The L. Ya. Karpov Physico-Chemical Institute

Submitted: October 22, 1954



The effect of the molecular weight of polystyrene on the packing density of the molecular chain

Gatovskaya, T.V.

KARGIN, V.A.; GATOVSKAYA, T.V.

Sorption properties of crystalline polymers. Zhur.fiz.khim.29 no.5:889-891 My'55. (MLRA 8:12)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova, Moscow
(Polymers and polymerization) (Sorption)

GATOVSKAYA, T.V.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 27/50

Authors : Kargin, V. A., Academician., and Gatovskaya, T. V.

Title : Effect of orientation on the sorption of crystalline polymers

Periodical : Dok. AN SSSR 100/1, 105-106, Jan. 1, 1955

Abstract : The role of the orientation processes in the derivation and reprocessing of high molecular compounds particularly during the derivation of highly stable fibrous and pellicular materials is elucidated. Experiments showed that the elongation of crystal polymer samples leads to a change in the sorption magnitude which indicates certain changes in their packing density during the orientation. Such sorption changes indicate a certain loosening in the packing density of polymeric molecules in the process of orientation in the case of polyamides and cannot be identically interpreted in the case of polyethylene. Three USSR references (1948-1953). Graphs.

Institution : The L. Ya. Karpov Phys.-Chem. Institute

Submitted : October 22, 1954

GAIOVSKAYA, T. V.

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2 May

2819. Sorption of low molecular substances by amorphous polymers in a highly elastic state. V. A. KARGIN and T. V. GAIOVSKAYA. *Zhur. Fiz. Khim.*, 1956, 30, 1585-4. N-hexane sorption isotherms are plotted for natural rubber, a polyisoprene, and its high-molecular fraction, SKBM and a high-molecular fraction of SKBM, SK-1, SK-2 and SK-3, and for natural rubber and polyisoprene vulcanisates. In spite of the difference in the structure of the chains of natural and synthetic rubbers, all the sorption isotherms give the same curve. It is concluded that the branching of the chains of synthetic rubber is only slight and practically does not change the degree of flexibility of the chains in comparison with those of natural (linear) rubber. The presence of an uncommon spatial network (vulcanised rubber test-pieces) also does not alter the flexibility of the chains. 63461

GATOVSKAYA, T.V.

Category: USSR/Chemistry of High-Molecular Substances F.

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30890

Author : Kargin V.A., Gatovskaya T.V.
Inst : not given
Title : Sorption of Hydrogenated Monomers by Amorphous Polymers in Vitreous State

Orig Pub: Zh. fiz. khimii, 1956, 30, No 9, 2051-2056

Abstract: Study of sorption of hydrogenated monomers by polymers in the vitrification state (polyacrylic acid - propionic acid, polyvinyl alcohol - ethanol, polyvinyl chloride - ethyl chloride, polymethylmethacrylate - methylester of isobutyric acid, polybutylacrylate - butyl ester of isobutyric acid and polystyrene - benzene). Sorption isotherms are characterized by presence of two portions over the first of which true sorption occurs as a result of micro-porosity of the material. Loosely packed glasses behave like true adsorbents up to the point at which all micropores become filled with monomer; with accumulation

Card : 1/3

-4-

Category: USSR/Chemistry of High-Molecular Substances F

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30890

Author : Kargin V.A., Gatovskaya T.V.

of monomer, which exercises a plasticizing action, the polymer is changed to a highly elastic state and the process of sorption begins to reach one of entropy nature. In the case of densely packed glasses the first portion is not attained. Sorption begins when the amount of monomer sorbed at the surface becomes sufficient to fuse the glass and change the polymer to an elastic state. Such polymers include polymethyl-methacrylate, polyvinyl alcohol, polyacrylic acid. Nature of the transition from 1-st portion to the 2-nd is determined by properties of the polymer. Thus the fundamental factor which determines sorption of vapor by polymeric glasses is packing density of the chains and change in physical state on sorption. Hysteresis phenomena on desorption are due to change in physical state of polymer, as a result of which the surface layer is vitrified which hinders diffusion from the bulk of the polymer. The assumption is made

Card : 2/3

YESIPOVA, N.G., ANDREYEVA, N.S., GATOVSKAYA, T.V.

Role of water in the structure of collagen [with summary in English]. Biofizika 3 no.5:529-540 '58 (MIRA 11:10)

1. Fiziko-khimicheskiy institut im. Karpova, Moskva, i Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(COLLAGEN,
water in cytol. collagen structure, x-ray diffraction (Rus))
(WATER,
in collagen cytostructure, x-ray diffraction (Rus))

SOV/69-20-6-3/15

AUTHORS: Berestnev, V.A., Gatovskaya, T.V., Kargin, V.A., Yaminskaya, Ye.Ya.

TITLE: Studies of the Physical-Chemical Properties of Cord Fibers (Izucheniye fiziko-khimicheskikh svoystv kordnykh volokon). 1. The Heat Effects of Dissolution of Capron Fibers (Teplovyye effekty rastvoreniya kapronovogo volokna)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol 20, Nr 6, pp 694-696 (USSR)

ABSTRACT: The microstructure of cord fibers and their changes have been investigated by thermodynamical methods. The table shows that the decrease in heat effects during heating in water is different for stretched and unstretched specimens. The difference is 0.77 kcal/g or 25% of the total heat effect. The dissolution heat decreases sharply during heating of capron fibers in formic acid which is explained by an increase in crystallinity of the polymer. Repeated stretching has no effect on the heat of dissolution. The dissolution heat of a rolled specimen is 24.5% higher than in initial specimens. Cord fatigue is due to macrodefects in the fiber. There is 1 set of photos, 1 table, and 4 Soviet references.

Card 1/2

SOV/69-20-6-3/15

Studies of the Physical-Chemical Properties of Cord Fibers. 1. The Heat Effects of Dissolution of Capron Fibers

ASSOCIATIONS: Fiziko-khimicheskiy institut imeni L.Ya. Karpova (Institute of Physics and Chemistry imeni L.Ya. Karpov). Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva (Scientific Research Institute of the Tire Industry, Moscow)

SUBMITTED: October 5, 1957

1. Capron fibers--Physical properties 2. Capron fibers--Chemical properties 3. Capron fibers--Test methods 4. Capron fibers --Temperature factors

Card 2/2

AUTHORS: Kargin, V. A., Member, Academy of Sciences, USSR, Berestnev, V. A., Gatovskaya, T. V., Yaminskaya, Ye. Ya. SOV/20-122-4-36/57

TITLE: On the Mechanism of Fiber Failure (K voprosu o mekhanizme razrusheniya volokna)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 4, pp 668-670 (USSR)

ABSTRACT: It has been previously proved that the variations of the molecular structure of cord-caprone fibers with various mechanical influences are not large. Therfore, it cannot be said that these changes play an important role in the destruction process of a fiber (Ref 1). It has been assumed that the decisive factor, which was responsible for the destruction of the fiber with repeated cyclic influence, is the development of macrodefects in the material. The direct experimental proof of this fact was of interest. For this purpose, determinations of the stability of the cordcaprone fiber were carried out after the fiber had been treated with a surface-active agent (oleic acid). By this, the surface tension was reduced, in particular on the

Card 1/4

damaged spots of the fiber. Thus, the macrodefects were able to expand (Ref 2). This is confirmed by table 1. Washing out of the cord by means of carbon tetrachloride for the removal of the oleic acid increases the solidity of the fiber (Table 1, Sample 3). Table 1 gives further evidence on the stability and stretch (up to fatigue) of the investigated samples. These data remain unchanged, without dependence upon the kind of treatment of the fiber. Thus, with destruction of the cord by a repeated and single type of influence, different factors play the important role. In the first case the macro defects are mainly responsible, whereas during just one operation (tension test on a dynamometer) the effect of these factors is not large. Possibly, in this case the destruction of the cord is substantially related to the simultaneous destruction of a large number of molecular chains in the weakest places of the fiber. In order to confirm this assumption the viscosity of the fiber solutions before and after the mechanical treatment (repeated cyclic extension and breaking on the dynamometer) was measured. The results of the characteristic viscosity of these solutions in an 85 % formic

acid solution are given in table 2. It is seen from this that the decrease in viscosity of solutions from fibers, which have been torn on the dynamometer, is considerably higher than with a repeated extension. During fatigue the viscosity value falls somewhat in the initial period and then remains stable even at breaking. Inversely, at breaking on the dynamometer the specific viscosity is maintained up to the destruction of the fiber. At the time and on the site of breaking only, it drops rapidly. Therefore, it might be supposed that the destruction of a fiber in consequence of repeated mechanical influence is due to the continuous development of macrodefects at depth. During this, only a few chains are broken in a small cross section; during a single extension, the breaking of a considerable number of molecular chains in a weak part of the fiber determines the destruction of the fiber. There are 2 tables and 2 references, 2 of which are Soviet.

On the Mechanism of Fiber Failure

SOV/20-122-4-36/57

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute imeni L. Ya. Karpov)
Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire-Industry)

SUBMITTED: June 24, 1958

Card 4/4

BERESTNEV, V.A.; GATOVSKAYA, T.V.; KARGIN, V.A.; YAMINSKAYA, Ye.Ya.

Study of the physicochemical properties of cord fibers. Part 3: Some changes in the structure of fibers occurring in repeated cyclic stretching. Vysokom. soed. 1 no.3:373-377 Mr '59.
(MIRA 12:10)

1.Fiziko-khimicheskiy institut im. L.Ya. Karpova i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Nylon--Testing)

5(4)

AUTHORS: Gatovskaya, T. V., Golova, O. P., Krylova, R. G., Kargin, V. A.

SOV/76-33-6-39/44

TITLE: Investigation of the Sorption Properties of Cellulose in the Process of Its Thermal Disintegration (Issledovaniye sorbtsionnykh svoystv tsellyulozy v protsesse yeye termicheskogo raspada)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1418-1421 (USSR)

ABSTRACT: The experimental results of a previous paper (Ref 1) point to the fact that the process of thermal disintegration of cellulose (I) in the course of 90 minutes can be divided into two stages with different peculiarities (Table 1). It is assumed that the first reaction stage proceeds in less densely packed (I), whereas in the second reaction stage a higher packing density prevails and the yield of levoglucosane is proportional to this density. To investigate the packing density, a method with the use of sorption isothermals was applied to the present case. The sorption experiments were made on one of the investigation samples (Ref 1) of the cellu-

Card 1/3

Investigation of the Sorption Properties of Cellulose in the Process of Its Thermal Disintegration SOV/76-33-6-39/44

lose SP-700 which was heated to 300° for 10, 20, 40 and 90 minutes at $1 \cdot 10^{-5}$ mm Hg. The sorption of the steam by (I) decreases with the time of treatment of (I) to a certain value (20 minutes time of treatment) and then remains constant. This points to a condensation of the (I)-packing by a reduction of its polymerization degree (Ref 5). In the first stage of the thermal (I)-disintegration characterized by a sudden rise in the levoglucosane yield, the maximum condensation of the molecule packing of (I) is attained. In a further disintegration of the basic mass of (I), these values remain constant. Thus, the experimental results confirm the previous statements (Refs 6, 7) that the formation of levoglucosane is considerably influenced by the thermal treatment of (I), i. e. its packing density. There are 2 figures, 2 tables, and 7 references, 6 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva; Akademiya nauk SSSR, Institut lesa (Physico-chemical Institute imeni L. Ya. Karpov Moscow; Academy of Sciences of the USSR, Forestry Institute)

Card 2/3

Investigation of the Sorption Properties of Cellulose 30V/16-33-6-39/44
in the Process of Its Thermal Disintegration

SUBMITTED: December 28, 1957

Card 3/3

BERESTNEV, V.A.; GATOVSKAYA, T.V.; KARGIN, V.A.; YAMINSKAYA, Ye.Ya.

Study of the physicochemical properties of cord fibers. Part 2: Effect of thermal and mechanical action on the sorption properties of capron cord. Vysokom. soed. 1 no.3:337-341 Mr '59. (MIRA 12:10)

1.Fiziko-khimicheskiy institut im. L.Ya. Karpova i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Nylon)

15(4)

AUTHORS: Berestnev, V. A., Gatovskaya, T. V., Kargin, V. A., Yaminskaya, Ye. Ya.

S/183/59/000/06/015/027
B004/B007

TITLE: The Mechanism of the Fatigue of Fibers

PERIODICAL: Khimicheskiy volokna, 1959, Nr 6, pp 50 - 52 (USSR)

ABSTRACT: The authors proceed from the experimentally proven fact that the destruction of fibers by fatigue is caused by macrodefects (Refs 5-8), which develop in the course of the fatigue tests in the fiber. In the present paper they endeavor to give a mathematical description of this process as a function $n = f(N,v)$ (n = number of stress changes leading to fatigue failure, N = number of occurring defects, v = rate of the increase of defects). In consideration of the duration of stress, the intensity of the frequency of stress changes, and the length of the specimen to be tested, the authors obtain the equation (9), the correctness of which they prove for various limiting cases and which they compare with the results obtained by M.P. Nosov (Fig) (R... ... They mention

Card 1/2

The Mechanism of the Fatigue of [illegible]

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M S Porodovskiy (Refs 9,10), and thank M S Kosov for the experimental data placed at their disposal, as well as S.I. Slonimskiy, E Z. Faynberg, and V.Z. Kresin for their advice. There are 1 figure and 13 references, 7 of which are Soviet.

ASSOCIATION: NIFKhI im. L. Ya. Karpova (Scientific Research Institute for Physical Chemistry imeni L.Ya. Karpov), NII shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Card 2/2