C is a constant. The subject-matter is described in general terms. Orig. art. has: 7 formulas.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi (Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 08Jan64 ENCL: 00 SUB CODE: EC

NO REF SOV: 003 OTHER: 002

Card 2/2

NEYMAN, M.S.

Molecular memory systems and directed mutations. Radiotekhnika. 20 no.6:1-8 Je '65. (MIRA 18:7)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.

NEYMAN, M.S.

Method of induced e.m.f. and integral control of antennas.
Radiotekhnika 20 no. 12:22-26 D '65 (MIRA 19:1)

1. Deystvitel'nyy chlen Nauchno-tekhicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.

ACC NR: AP7009575 SOURCE CODE: UR/0142/66/009/006/0797/0797

AUTHOR: Noyman, M. S. (Honored Scientist and Technical Scientist of RSFSR; Doctor of Technical Sciences; Professor)

ORG: none

TITLE: Awarding of the A. S. Popov Prize for 1965

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 6, 1966, 797

TOPIC TAGS: antenna engineering, delay mechanism

SUB CODE: 09

ABSTRACT: The Povov prize is awarded once each three years for outstanding work in the area of radio physics and electronics performed in the USSR or abroad. In 1965, the prize was awarded to a group of teachers and scientific workers in the chair of transmitting apparatus of the Moscow Aviation Institute imeni Ordzonikidze and the Scientific Research Institute of the Ministry of the Radio Industry of the USSR. The prize was given for works on new methods of dectrical scanning in antenna systems. The authors solved the problem of rapid electrical scanning using two methods: frequency and discrete commutation methods. The frequency method has been under investigation by these authors since 1954. Such elements as dispersion delay devices have been studied in particularly great detail. The discrete commutation method of scanning was suggested in 1960. Many other problems associated with this type of antenna have been studied. These problems include the theory of non-reflecting gaps, the theory of multichannel antennas, the theory of distortion of antenna radiation patterns during scanning due to systematic and random factors and general problems in the design of electrically controlled phase shifters and delay systems. The primary results of the investigations were published under

Card 1/2

0930 1403

ACC NR: AP6036268 SOURCE CODE: UR/0108/66/021/011/0002/0009

AUTHOR: Neyman, M. S. (Active member)

ORG: Scientific and Technical Society of Radio Engineering and Electrocommunication im. A. S. Popov (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

TITLE: Negentropy principle in information-processing systems (for purposes of discussion)

SOURCE: Radiotekhnika, v. 21, no. 11, 1966, 2-9

TOPIC TAGS: negentropy, information processing, thermodynamics

ABSTRACT: Regarded as a generalized second principle of thermodynamics, the negentropy information principle is: the sum of information and negentropy in a closed system can only decrease. Binary-information processing systems impose

Card 1/2 UDC: 621.391

ACC NR: AP6036268

certain limitations on the relation between their operating speed and operating-energy level of their elements. The energy coefficient of operating speed is: $M = F_c/P$, where F_c - clock frequency and P - element power. Three characteristic ranges of M are distinguished: (1) A lower range, $M = 0 - 10^{15}$ cps/w; (2) A higher range, $M = 10^{15} - 2.4 \times 10^{20}$ cps/w at 300K; (3) A superhigh range, $M > 10^{23}$ cps/w at 300K. In the first range, no steps are required against intrinsic noise of the elements. In the second range, special antinoise measures (similar to those used in long-distance communications) are required. Operation in the third range is possible only at cryogenic temperatures. The above M ranges are valid at not very high frequencies; with frequencies that correspond to quantum energies exceeding kT, the maximum frequencies must be lowered. Orig. art. has: 2 figures and 11 formulas.

SUB CODE: 09 / SUBM DATE: 21Dec65 / ORIG REF: 002 / OTH REF: 001

Card 2/2

NEYMAN, M.V.

Category : USSR/Solid State Physics - Diffusion. Sintering E-2

Abs Jour : Ref Zhur - Fizika, No 7, 1957, No 16678

Author : Neyman, M.V., Shinyayev, A.Ya.
Title : Investigation of Diffusion in Binary Alloys as a New Method of Physical-Chemical Analysis.

Orig Pub : Zh. neorgan. khimii, 1956, 1, No 6, 1257-1263

Abstract : The change in the coefficient of diffusion D, the energy of activation E, and the coefficient of the exponential D_0 as functions of the composition of the alloys were determined in Fe-Ni and Fe-O systems. In the Fe-Ni, system, which represents in the temperature region from 900 - 1100° a continuous series of solid solutions of nickel in iron, D increases continuously, while E and log D_0 diminish continuously as functions of the alloy composition. In the Fe-O system, which contains the chemical compound Fe_2O_3 in the temperature range 100 -- 1200° under investigation, D diminishes sharply and E and log D_0 increase sharply at the point corresponding to the chemical combination. The authors believe that the singular point they observed on the diffusion characteristics vs. alloy composition curve,

Card : 1/2

Category : USSR/Solid State Physics - Diffusion. Sintering E-4

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6678

Author

corresponding to chemical combination, makes it possible to employ the study of diffusion in binary alloys as a new method of physical-chemical analysis.

Card : 2/2

NEYMAN, M. V. and SADILENKO, K. M.

"Thermonuclear Weapons," Moskva, 1958

Dr. Chem. Sci.

B

TITLE: Antitumor activity of stable free radicals

SOURCE: AN SSSR. Doklady, v. 157, no. 3, 1964, 707-709

TOPIC TAGS: biochemistry, neoplasm

ABSTRACT: The antitumor activity of free radicals was studied in the light of literature data indicating that a vital role in the mechanism of the antitumor action of inhibitors of radical processes is played by the action of comparatively stable free radicals formed from the inhibitors. Stable free radicals of a number of 4-substituted 2,2,6,6-tetramethylpiperidine oxides were investigated by a kinetic method of determining antitumor effectiveness. The kinetics of the changes in the weight of the spleen, number of leukocytes and hemocytoplasts per cubic millimeter of blood and percent content of hemocytoplasts in the bone marrow were studied in mice of the C57BL line with grafted leukemia from the Le strain. Antileukemic activity was discovered in three free radicals; the

Card 1/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136820

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ACCESSION NR: AP5019335

antileukemic activity of one of the preparations was found to be due to the presence in its molecule of both an unpaired electron and of a urethan group.

Orig. art. has: 4 graphs, 1 table.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 19Mar63 ENCL: 00 SUB CODE: LS, GC

NR REF SOV: 005 OTHER: 003 JPRS

NEYMAN, M. Z.

"The Esophagus in the Electrocardiograph of Normal and Infarched Myocarditis Cases," Terap. Arkhiv., 21, No. 2, 1949.

NEYMAN, M.Z.

Diagnosis of certain types of arrhythmia by means of the esophageal lead. Ter.arkh. 22 no.6:34-40 Nov-Dec 50. (CLML 20:5)

1. Of the Hospital Therapeutic Clinic (Director--Prof.M.E. Mandel'shtam), Leningrad Pediatric Medical Institute.

[redacted], M. .

Heart --Diseases

Report on the work of the cardiology section of the Leningrad branch of the All-Union Therapeutic Society for 1950. Terap. arkh., 23, No. 6, 1951.

9. Monthly List of Russian Accessions, Library of Congress, March 1952. ~~1953~~, Uncl.

NIMYMAN, M.Z.

Activity of the Cardiological Section of the S.P.Botkin Leningrad Branch of the All-Union Scientific Society of Therapeutists. Terap. arkh. 26 no.6:81-86 N-D '54. (MLRA 8:2)
(CARDIOVASCULAR SYSTEM--DISEASES)

HEYMAN, M.Z.

Activities of the cardiological section of the Botkin Leningrad brahch of the All-Union Scientific Society during 1954. Terap. Arkh.27 no.3:86-89 '55. (MLRA 8:9)
(HEART--SURGERY)

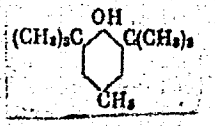
TITLE: Extending polymer life

B+1

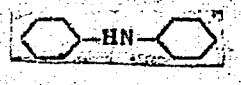
SOURCE: AN SSSR. Novoye v khimii (Latest developments in chemistry); sbornik statey. Moscow, Izd-vo Nauka, 1964, 165-178

TOPIC TAGS: polymer, polyethylene, polypropylene, antioxidant, polymer stabilizer

ABSTRACT: Extension of polymer life, i.e., increasing the induction period by adding small amounts of antioxidants to curtail reaction chains by reacting with the free radicals, is discussed. The use of phenols like

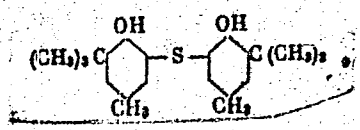


and aromatic amines like diphenylamine

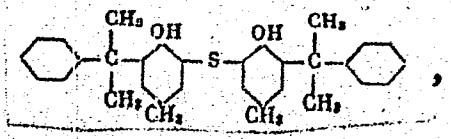


Card 1/5

can increase the induction period (at reasonable temperatures) of polymers by factors of 10-50, as shown for polyethylene containing 0.02 mol/kg of antioxidants in Fig. 1 on the Enclosure (at 200C in 300 mm Hg oxygen). Here CAO-6 represents the trade-name for

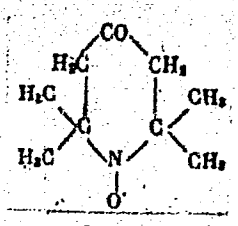


An antioxidant



newly synthesized by Russian scientists, has been found very effective with polypropylene (1000 hours at 120C) and many other polymers. Recently a new class

and consequent oxidation to



It can be stored indefinitely without decomposition. At the present time more than 40 stabilizing nitrate radical compounds with a free oxygen valence have been obtained. These are good stabilizers for caprone, polyformaldehyde, and several other polymers. Nitrate radicals also curtail the oxidation of other polyamides and are sometimes more effective antioxidants than aromatic amines. Since polymer production in the SSSR is expected to reach 3.5-4.0 million tons by 1970,

Card 3/5 15

L 45254-65
ACCESSION NR: AT5005159

extending the life of polymers by factors of only 2-3 will result in a substantial saving of raw materials and capital. Orig. art. has: 9 figures.

ASSOCIATION: none

SUBMITTED: 20Oct64 ENCL: 01 SUB CODE: OC

NO REF SOV: 000 OTHER: 000

Card 1/1

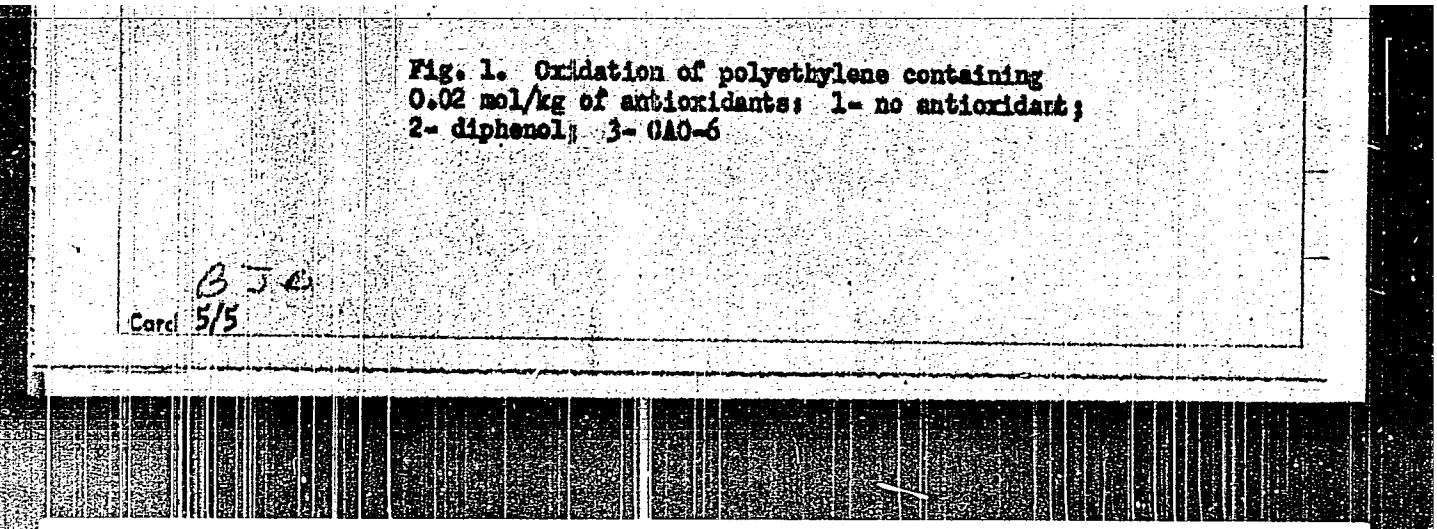


Fig. 1. Oxidation of polyethylene containing 0.02 mol/kg of antioxidants: 1- no antioxidant; 2- diphenol; 3- OAO-6

B J C

Card 5/5

NEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no.1: 157-158 Ja-F '60. (MIRA 13:5)
(Biology)

HEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no. 3:476-478 My-Je '60. (MIRA 13:12)
(BIOLOGY)

NEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no.4: 636-638 Jl-Ag '60. (MIRA 13:8)
(Bibliography--Biology)

HEYMAN, M.F.

Items from foreign biological publications. Agrobiologiia no.5:797-798 S-O '60. (MIRA 13:10)
(Rusts (Fungi)) (Botany--Physiology)

NEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no. 1:156-158 Ja-F '61. (MIRA 14:2)
(Biology)

NEYMAN, N.F.

From the pages of foreign biological and agricultural publications.
Agrobiologia 5:796-797 S-O '64. (MIRA 17:11)

NEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no.2:316-317 Mr-Ap '61. (MIRA 14:3)
(Biology)

NEYMAN, N.F.

Items for foreign biological publications. Agrobiologiia no.3:475-476 My-Je '61. (MIRA 14:5)
(Botany--Physiology)

NEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no.4:636-638 Jl-Ag '61. (MIRA 14:7)
(Biology) (Field crops)

DEVIS , D.R. [Davies, D.R.]; NEYMAN, N.F. [translator]

Induced mutation in crop plants. Agrobiologiia no.5:779-792 S-O '61. (MIRA 14:10)

(Botany—Variation)

NEYMAN, N.F.

Items from foreign biological publications. Agrobiologiia no.6:930-932 N-D '61. (MIRA 15:2)
(Biology)

NEYMAN, N.F. [Neuman, N.F.]

Items from foreign biological publications. Agrobiologiia no.1: 157-158 Ja-F '62. (MIRA 15:3)

(Biology)

NEYMAN, N.F.

From the pages of foreign biological publications. Agrobiologiia no.2:316-318 Mr-Ap '62. (MIRA 15:4)
(Biological research)

NEYMAN, N.F.; MIROSHNICHENKO, G.N.

From the pages of foreign biological and agricultural publications.
Agrobiologiia no.4:636-638 Jl-Ag '62. (MIRA 15:9)
(GENETICS) (AGRICULTURE)

NEYMAN, N.F.; SORKINA-FINKEL', L.I.

From the pages of foreign biological and agricultural publications.
Agrobiologiia no.2:317-319 Mr-Ap '63. (MIRA 16:7)
(Bibliography--Agricultural research)

NEYMAN, N.F.; SORKINA-FINKEL', L.I.

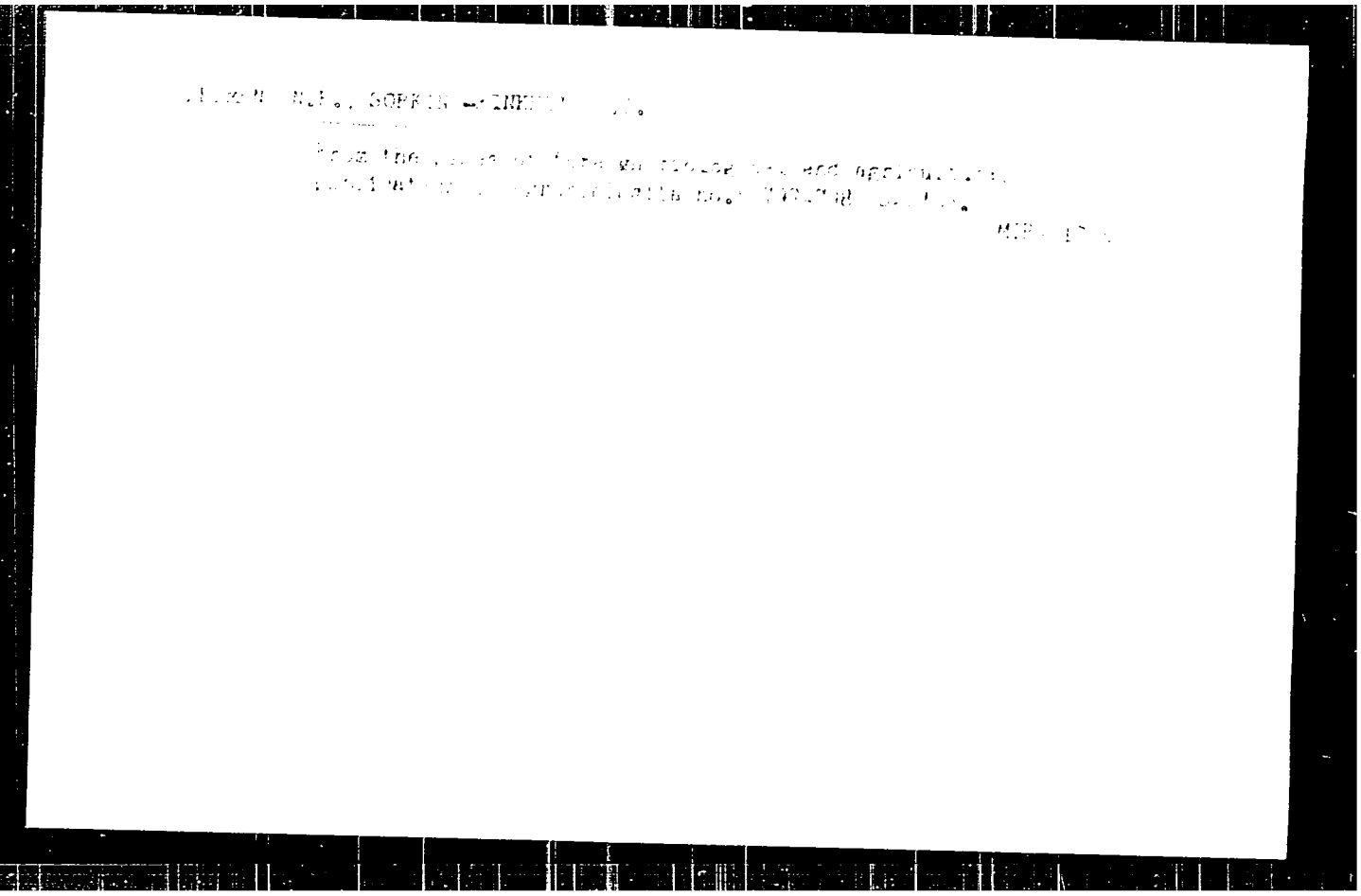
From the pages of foreign biological and agricultural publications.
Agrobiologiia no.3:476 My-Je '63. (MIRA 16:7)
(No subject heading)

FLEMING, G.A.; DELANEY, Dzh. [Delaney, J.]; NEYMAN, N.F. [translator]

Copper and nitrogen in the nutrition of wheat on cutaway peat. Agrobiologiia no.6:942 N-D '63. (MIRA 17:2)

NEYMAN, N.F.; SORKINA-FINKEL', L.I.

From the pages of foreign biological and agricultural publications. Agrobiologiia no.6:950-952 N-D '63.
(MIRA 17:2)



NEYMAN, N.F.; SORKINA-FINKEL', L.I.

From the pages of foreign biological and agricultural publications.
Agrobiologiia no. 3:475-477 My-Je '64. (MIRA 17:7)

NEYMAN, N.F.; SORKINA-FINKEL', L.I.

From the pages of foreign biological and agricultural publications.
Agrobiologiia no.4:637 Jl-Ag '64. (MIRA 17:12)

NEYMAN, N.F.

Book review . Agrobiologiia no.2:316-318 Mr-Ap '65.
(MIRA 18:11)

GRACHEV, P.A.; MEYMAN, N.I.

Efficient organization of a centralized manufacture and supply of enterprises with metal-cutting tools. Mashinostroitel' no.8:38 Ag '60. (MIRA 13:9)

(Metal-cutting tools)

ACC NR: AM6000295 Monograph UR/

Neyman, Mikhail Samoylovich

Course in radio transmitting devices (Kurs radioperedayushchikh ustroystv) 2d ed., rev. and enl. Moscow, Izd-vo "Sovetskoye radio," 1965. 593 p. illus., biblio. Textbook for radio engineering institutes and faculties. Errata slip inserted. 47,000 copies printed.

TOPIC TAGS: radio transmitter, electronic oscillator, hf oscillator, am transmitter, ground transmitting equipment, uhf transmitter, fm transmitter, radio circuit, laser optics

PURPOSE AND COVERAGE: This basic textbook on radio transmitting equipment is intended for students in radio engineering schools of higher education. This second, expanded edition, contains a series of improvements of and reflects developments in this field over the last six years. Two chapters describing transistorized transmitters and lasers have been added.

TABLE OF CONTENTS:

Card 1/3 UDC: 621.396.61(075)

ACC NR: AM6000295

Card 2/3

ACC NR: AM6000295

SUB CODE: 09/ SUBM DATE: 26Jun65/ ORIG REF: 052/ OTH REF: 006

Card 3/3

L 4205-66 EWT(m)/EPF(c)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WB

ACCESSION NR: AP5014132 UR/0365/65/001/003/0277/0279
620.193.141

AUTHOR: Kuzul, V. S.; Neyman, N. S.; Tsirman, A. I.

TITLE: Anodic dissolution of nickel in H_2SO_4 solutions

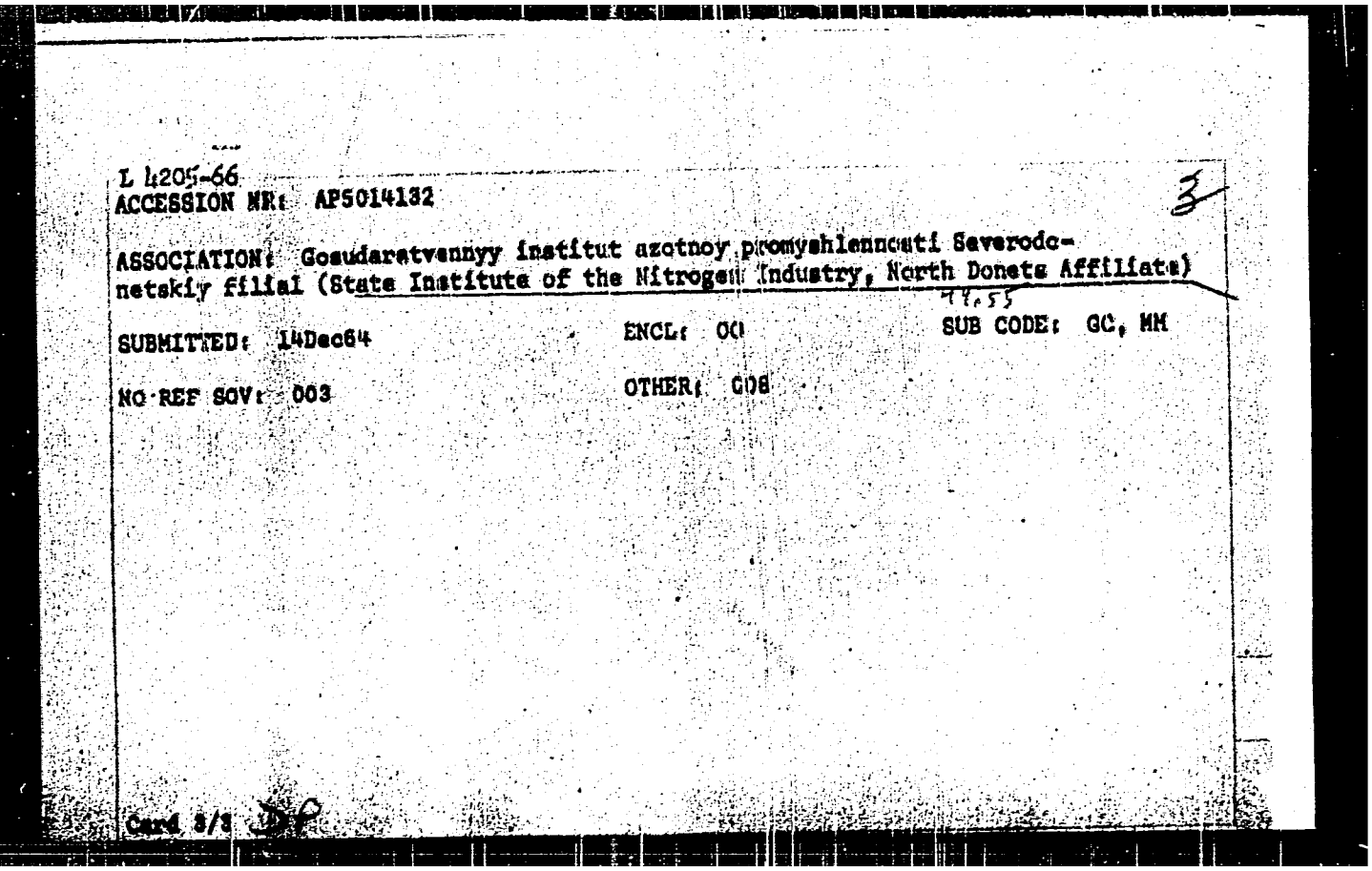
SOURCE: Zashchita metallov, v. 1, no. 3, 1965, 277-279, and insert facing p. 275

TOPIC TAGS: anodic oxidation, potentiometer, electrode potential, nickel plating

ABSTRACT: In this work, anodic potentiostatic measurements and metallography are used to study the dissolution of 99.2% pure Ni in a 1 N H_2SO_4 solution and in an electrolytic polishing solution, 21.5 N H_2SO_4, at a temperature of 22 ± 1°. The potentiostatic curves are obtained by using an electronic potentiostat. The specimens used had both planar and cylindrical shapes; at potentials above 1.3 v the strength of the current depended upon the separation and shape of the electrodes. Data on the dissolution of Ni are presented in the form of potentiostatic curves (lg i-a/cm^2 as a function of φ-voltage) in both of the H_2SO_4 solutions. Some of the curves illustrate the dependence of current density and speed of dissolution on potential. Surface microphotographs of Ni are shown for various regions of the potential, after 5-10 min of dissolution. However, for the regions of stability

Card 1/3

(passivization) the immersion time was longer. In the 1 N H_2SO_4 for the transition towards the passivating region, the surface was found to be etched, and pitting was observed. In the secondary region of passivity, spots of intercrystalline corrosion were observed, while beyond this region they diminished. Intercrystalline corrosion of the Ni occurred in the 21.5 N H_2SO_4 in the interval of potential from 0.3 to 1.3 volts. This is rationalized in terms of established theories of oxygen adsorption on the Ni surface which resulted in electrochemical heterogeneity of the grains relative to the boundaries and enhanced intercrystalline corrosion. The absence of intercrystalline dissolution in the 21.5 N H_2SO_4 in the potential range from 1.7 to 2.2 volts is explained by the apparent effect of the limiting current in causing the presence of some type of diffusion layer to form on the surface of the Ni. An analogous pattern of behavior was observed in the electrolyte $H_3PO_4 + H_2SO_4 + CrO_3$, where a similar increase in speed of dissolution was observed with the beginning of oxygen evolution. The authors conclude that only in the presence of some diffusion layer can the rates of dissolution of grains and boundaries be equalized, otherwise the adsorption of oxygen will result in intercrystalline attack. Orig. art. has: 5 figures.



L 4205-66
ACCESSION NR: AP5014132

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti Severodonetskiy filial (State Institute of the Nitrogen Industry, North Donets Affiliate)

SUBMITTED: 14Dec64 ENCL: 00 SUB CODE: GC, MM

NO REF SOV: 003 OTHER: 008

Card 1/1

SOURCE: Zashchita metallov, v. 1, no. 4, 1965, 396-400

TOPIC TAGS: corrosion resistant steel, stainless steel, carbon steel, potassium chloride, corrosion resistance, fertilizer, corrosion protection, electrochemistry, anodic protection, 1Kh18N9T stainless steel, OKh21N3T stainless steel, OKh21N6M2T stainless steel, OKh21N12M2T stainless steel, 13 carbon steel

ABSTRACT: Stainless steels 1Kh18N9T, OKh21N3T, OKh21N6M2T, and OKh21N12M2T, and Brand 3 carbon steel were subjected to corrosion tests in a pulp of complex fertilizers with the following composition (in %, dry basis): $Ca_5F(PO_4)_3$--28, $(NH_4)_2SO_4$-14, $CO(NH_2)_2$-10, KCl-17, NH_3-2, HNO_3-29. Water content was about 25 grams per 100 grams of pulp. The corrosion resistance of 1Kh18N9T and OKh21N12M2T steels was also determined in media with different

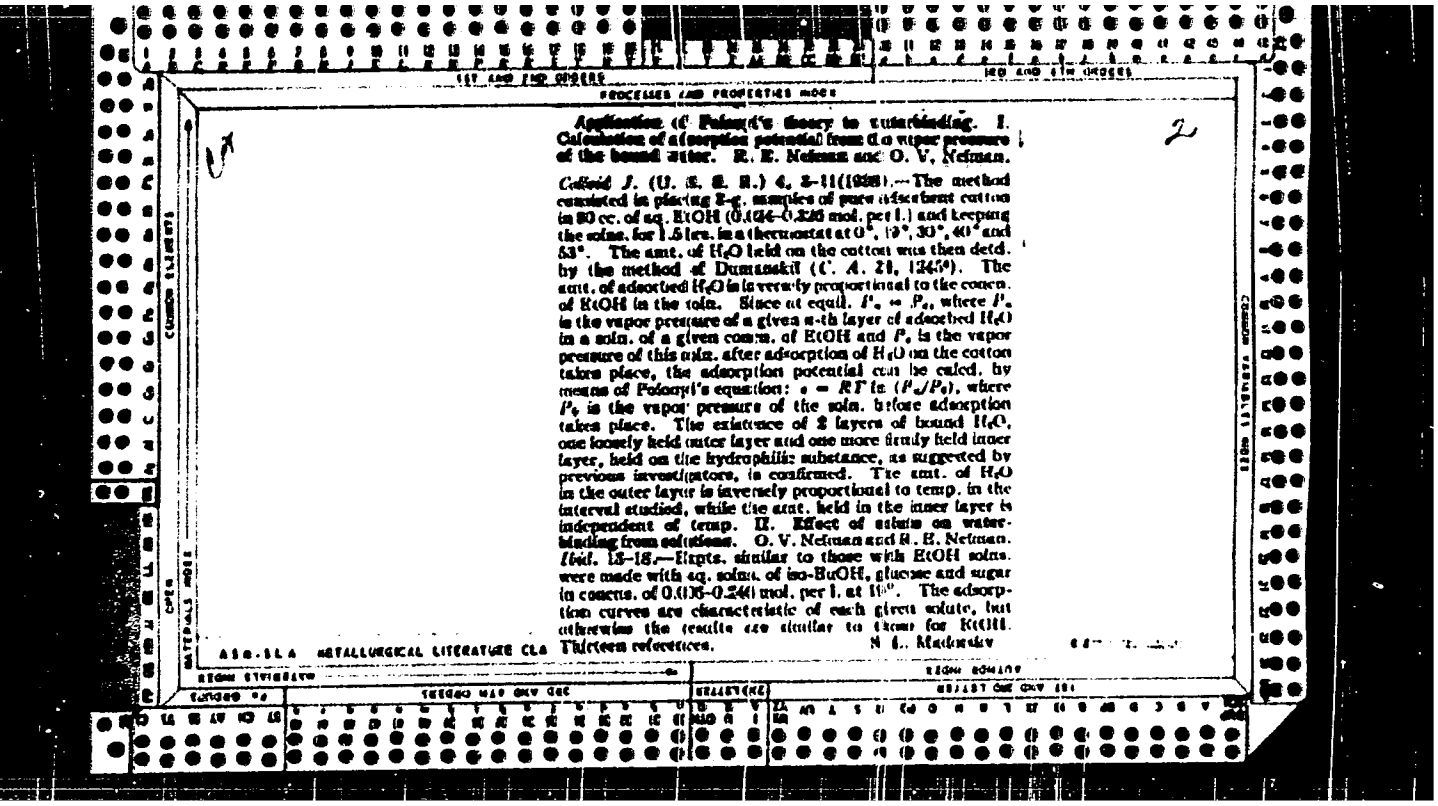
Card 1/2

pH values (4.5; 3.3; 2.8; 3.4; 2.2) and concentrations of KCl from 17% to zero at temperatures of 40-50C. Anodic protection of 1Kh18N9T steel was investigated at temperatures of 20-70C. The electrode surface was 0.05 cm^2, source of current was two accumulators with an emf of 2.5 volts connected in series, and the cathode was a platinum grid. A saturated calomel electrode was used for comparison. During the tests the potential was within the limits of 0.7-0.9 volts, and it was determined that the region of optimum passivity has a spread of 0.85 volts. Up to 60C the limiting potentials of this region (0.1-0.95 volts) do not change, but at 70C the spread is 0.3 volts. Pitting is observed only with a KCl content of 70% from the standard. The results, as shown in tables, indicate that in a pulp of complex fertilizers, anodic protection can reduce the corrosion rate by more than 50 times, and can completely eliminate pitting. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Gosudarstvennyi institut azotnoi promyshlennosti, Severodonetskii filial (State Institute for the Nitrogen Industry, North Don Branch)

Card 2/2

Use of the interferometer for the determination of bound water. A.V. Dumanskii and C... Kolman... collab. J.(U. .S.R.) 2, 615-19 (1936).- The Dumanskii interferometric method (cf. C.A. 26, 1245⁷, is very accurate. With increasing content of glucose in soln. the bound water contents of 2 samples of cotton wool remain decreased. As the glucose content decreased from 4 to 0, the bound water increased from 5 and 10% in the 2 kinds of cotton wool to 106 and 219%. Bound-water content decreased linearly with rise of temp. from 0° and 20° at 0° to 57 and 16%, resp., at 40°. By extrapolation both curves cross 0% at 128°, where it is assumed that disintegration of the diffuse layers occurs. F.R

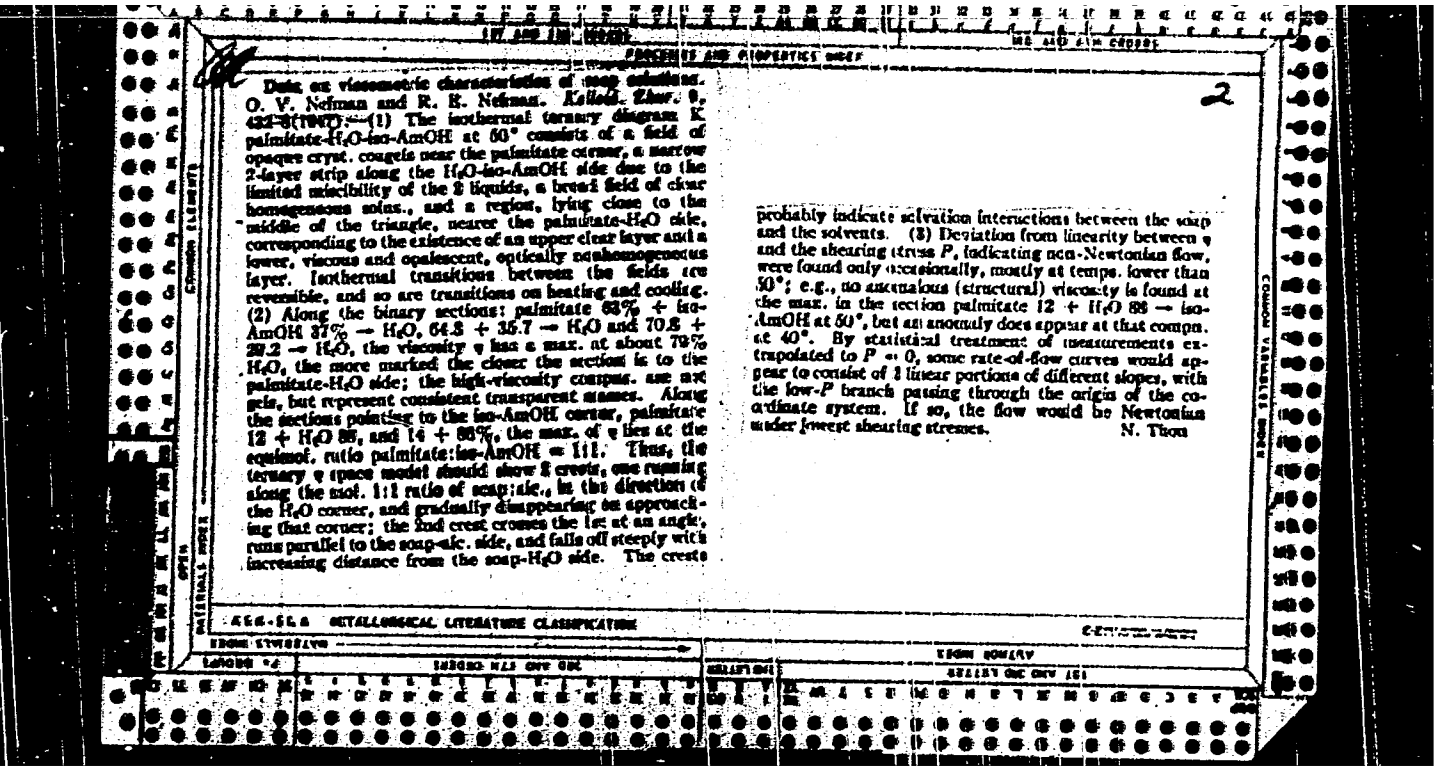


PROCESSES AND PROPERTIES INDEX

Application of Polanyi's theory to water-binding. I. Calculation of adsorption potential from the vapor pressure of the bound water. R. E. Neiman and O. V. Neiman.

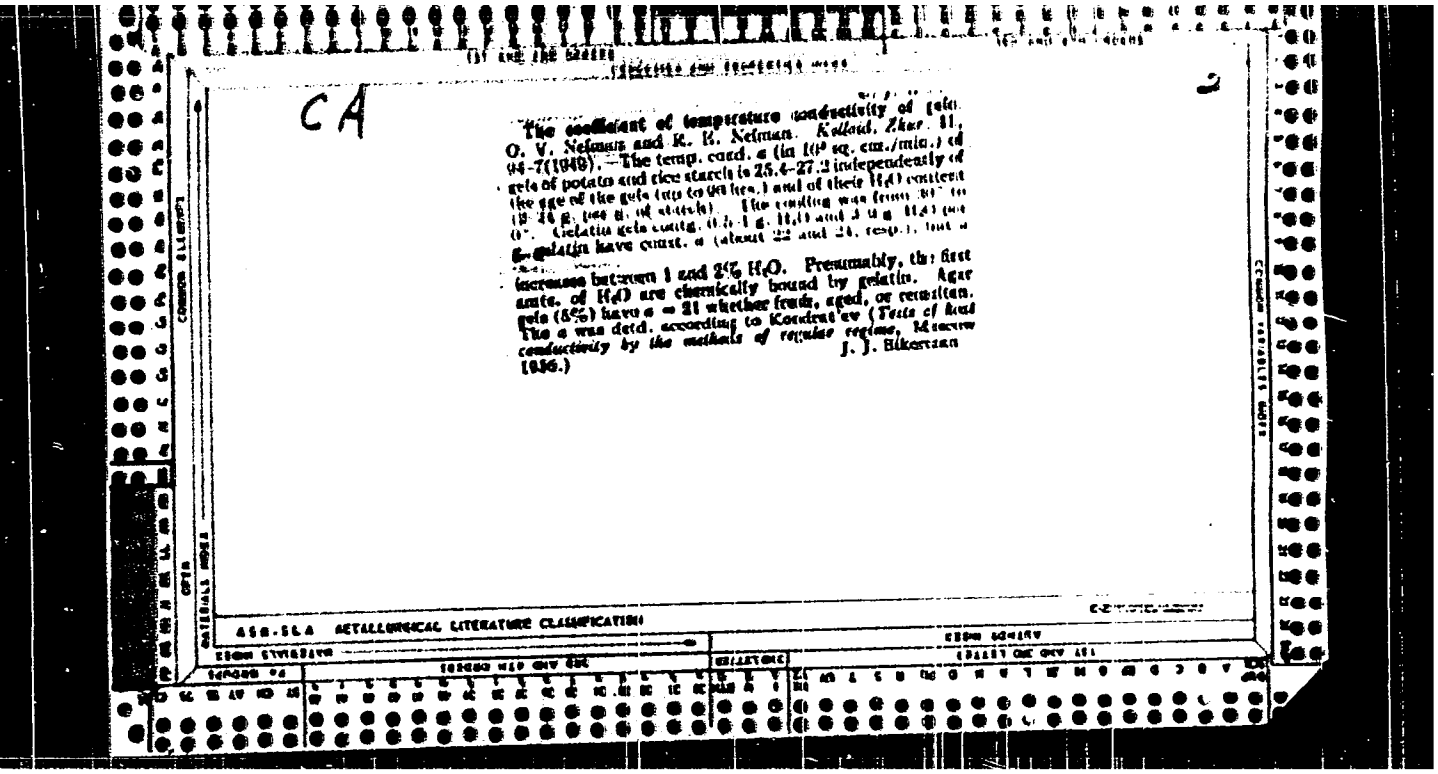
Colloid J. (U. S. S. R.) 4, 3–11(1938).—The method consisted in placing 2-g. samples of pure absorbent cotton in 80 cc. of aq. EtOH (0.036–0.226 mol. per l.) and keeping the solns. for 1.5 hrs. in a thermostat at 0°, 15°, 30°, 40° and 53°. The amt. of H_2O held on the cotton was then detd. by the method of Dumanskii (*C. A.* 21, 1365⁶). The amt. of adsorbed H_2O is inversely proportional to the concn. of EtOH in the soln. Since at equil. $P_n = P_s$, where P_n is the vapor pressure of a given n-th layer of adsorbed H_2O in a soln. of a given concn. of EtOH and P_s is the vapor pressure of this soln. after adsorption of H_2O on the cotton takes place, the adsorption potential can be calcd. by means of Polanyi's equation: $\epsilon = RT \ln (P_s/P_0)$, where P_0 is the vapor pressure of the soln. before adsorption takes place. The existence of 2 layers of bound H_2O, one loosely held outer layer and one more firmly held inner layer, held on the hydrophilic substance, as suggested by previous investigators, is confirmed. The amt. of H_2O in the outer layer is inversely proportional to temp. in the interval studied, while the amt. held in the inner layer is independent of temp. II. **Effect of solutes on water-binding from solutions.** O. V. Neiman and R. E. Neiman. *Ibid.* 13–18.—Expts. similar to those with EtOH solns. were made with aq. solns. of iso-BuOH, glucose and sugar in concns. of 0.036–0.246 mol. per l. at 15°. The adsorption curves are characteristic of each given solute, but otherwise the results are similar to those for EtOH. Thirteen references. N. L. Kladnitsky

ASB-BLA METALLURGICAL LITERATURE CLA



Data on viscometric characteristics of soap solutions. O. V. Nefman and R. E. Nefman. *Kolloid. Zhur.* 9, 422-8(1947).—(1) The isothermal ternary diagram K palmitate-H_2O-iso-AmOH at 50° consists of a field of opaque cryst. coagels near the palmitate corner, a narrow 2-layer strip along the H_2O-iso-AmOH side due to the limited miscibility of the 2 liquids, a broad field of clear homogeneous solns., and a region, lying close to the middle of the triangle, nearer the palmitate-H_2O side, corresponding to the existence of an upper clear layer and a lower, viscous and opalescent, optically nonhomogeneous layer. Isothermal transitions between the fields are reversible, and so are transitions on heating and cooling. (2) Along the binary sections: palmitate 63% + iso-AmOH 37% → H_2O, 64.3 + 35.7 → H_2O and 70.8 + 29.2 → H_2O, the viscosity η has a max. at about 79% H_2O, the more marked the closer the section is to the palmitate-H_2O side; the high-viscosity compns. are not gels, but represent consistent transparent masses. Along the sections pointing to the iso-AmOH corner, palmitate 12 + H_2O 88, and 14 + 86%, the max. of η lies at the equimol. ratio palmitate:iso-AmOH = 1:1. Thus, the ternary η space model should show 2 crests, one running along the mol. 1:1 ratio of soap:alc., in the direction of the H_2O corner, and gradually disappearing on approaching that corner; the 2nd crest crosses the 1st at an angle, runs parallel to the soap-alc. side, and falls off steeply with increasing distance from the soap-H_2O side. The crests probably indicate solvation interactions between the soap and the solvents. (3) Deviation from linearity between η and the shearing stress P, indicating non-Newtonian flow, were found only occasionally, mostly at temps. lower than 50°; e.g., no anomalous (structural) viscosity is found at the max. in the section palmitate 12 + H_2O 88 → iso-AmOH at 50°, but an anomaly does appear at that compn. at 40°. By statistical treatment of measurements extrapolated to P = 0, some rate-of-flow curves would appear to consist of 2 linear portions of different slopes, with the low-P branch passing through the origin of the coordinate system. If so, the flow would be Newtonian under lowest shearing stresses.

N. Thon



CA

The coefficient of temperature conductivity of gels. O. V. Nelman and R. B. Nelman. *Kolloid. Zhur.* 11, 94-7(1949).—The temp. coeff. a (in 10^{-4} sq. cm./min.) of gels of potato and rice starch is 25.4–27.2 independently of the age of the gels (up to 90 hrs.) and of their H_2O content (8–20 g. per g. of starch). The cooling was from 80° to 0°. Gelatin gels contg. 0.5–1 g. H_2O and 3 g. H_2O per g. gelatin have const. a (about 22 and 24, resp.), but a increases between 1 and 2% H_2O. Presumably, the first amts. of H_2O are chemically bound by gelatin. Agar gels (8%) have a = 21 whether fresh, aged, or remelted. The a was detd. according to Kondrat'ev (*Tests of heat conductivity by the methods of regular regime*, Moscow 1936.)

J. J. Elkerman

MEYMAN, O. V., and MEYMAN, R. L.

"On the Question of Some of the Peculiarities of Albuminous Jellies and Solutions" (K voprosu o nekotorykh osobennostyakh teplovogo rasshireniya belkovykh studney i rastvorov) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp. 459-463, Iz. AN SSSR, Moscow, 1956

(Report given at above Conference, Minsk, 21- 4 Dec 53)

Author: Voronezh State University, Chemistry Faculty

NIKOLAYEV, A.V.; NEYMAN, R.E.; NEYMAN, O.V.

Characteristics of the state of high polymer gels. Koll. zhur. 19 no.1:121-124 Ja-F '57. (MLRA 10:4)

1. Institut obshchey i neorganicheskoy khimii AN SSSR, Moskva i Voronezhskiy inzhenerno-stroitel'nyy institut.
(Colloids) (High molecular weight compounds)

NEYMAN, P.A.

Treatment of brucellosis at the fangotherapeutic resort Lipetsk.
Klin. med., Moskva 30 no.5:43-47 May 1952. (CIML 22:3)

1. Of Lipetsk Health Resort (Director -- N. P. Svitin).

MEYMAN, P.A.; ZAGORUYKO, O.A.

Fangotherapy of rheumatism with articular and cardiac lesions at the Lipetsk health resort. Klin. med. 32 no.10:49-52 O '54. (MIRA 8:1)

1. Iz Lipetskogo kurorta (dir. N.P.Svitin, konsul'tant dotsent fakul'tetskoy terapevticheskoy kliniki Voronezhskogo meditsinskogo instituta S.B.Epshteyn)

(MUD THERAPY, in various diseases,
rheum.heart dis. & rheum. arthritis)
(ARTHRITIS, RHEUMATOID, therapy,
mud ther.)
(RHEUMATIC HEART DISEASE, therapy,
mud ther.)

HEYMAN, Pavel Pavlovich; MILOSLAVSKIY, I.L., inzhener, retsenzent; KASENKOV, M.A., kandidat tekhnicheskikh nauk, redaktor; SHMEL'KINA, S.I., tekhnicheskiy redaktor; UVAROVA, A.F., tekhnicheskiy redaktor.

[Heating furnaces in forge shops] Nagreval'shchik pechei kuznechno-shtampovochnykh tsekhtov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 122 p. (MIRA 9:6)
(Furnaces, Heat treating)

NEYMAN, P.Z

NEYMAN, P.Z.

Nevosplameniaemye materialy v aviapromyshiennosti. Moskva, Oborongiz, 1944. 135 p., illus.

Bibliography: p.130-134.

Title tr.: Noninflammable materials in the aircraft industry.

TL697.F5N4

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

NEYMAN, P. Z.

Zashchitnaia obrabotka drevesiny v kolkhoznykh postroikakh. [Protective treatment of wood used in collective farm buildings]. Moskva, Sel'khozgiz, 1953. 84 p.

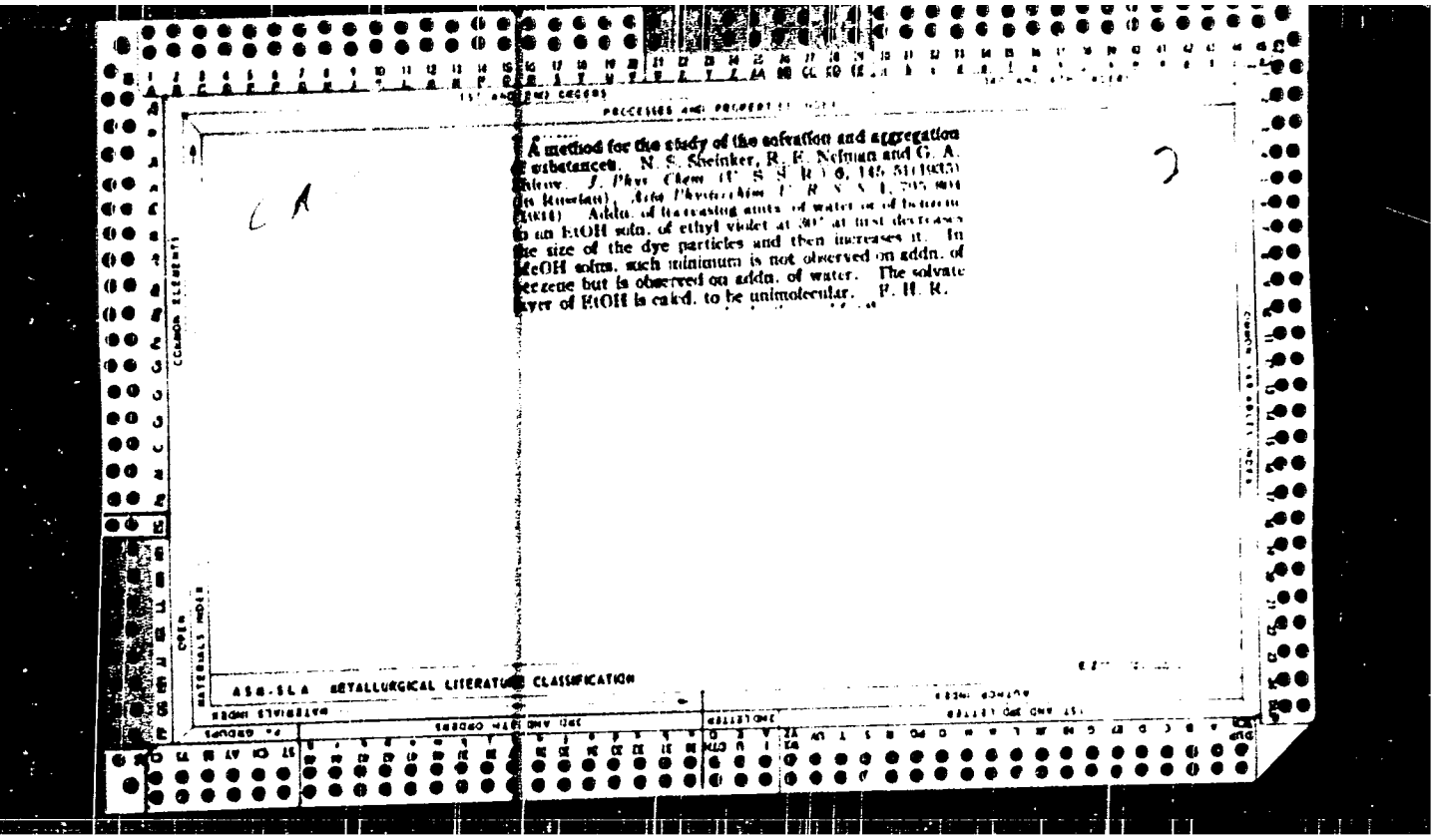
SO: Monthly List of Russian Accessions, Vol. 6 No. 8 November 1953

Nelken, Piotr, mgr inz.; Wasilewski, Wojciech, mgr inz.

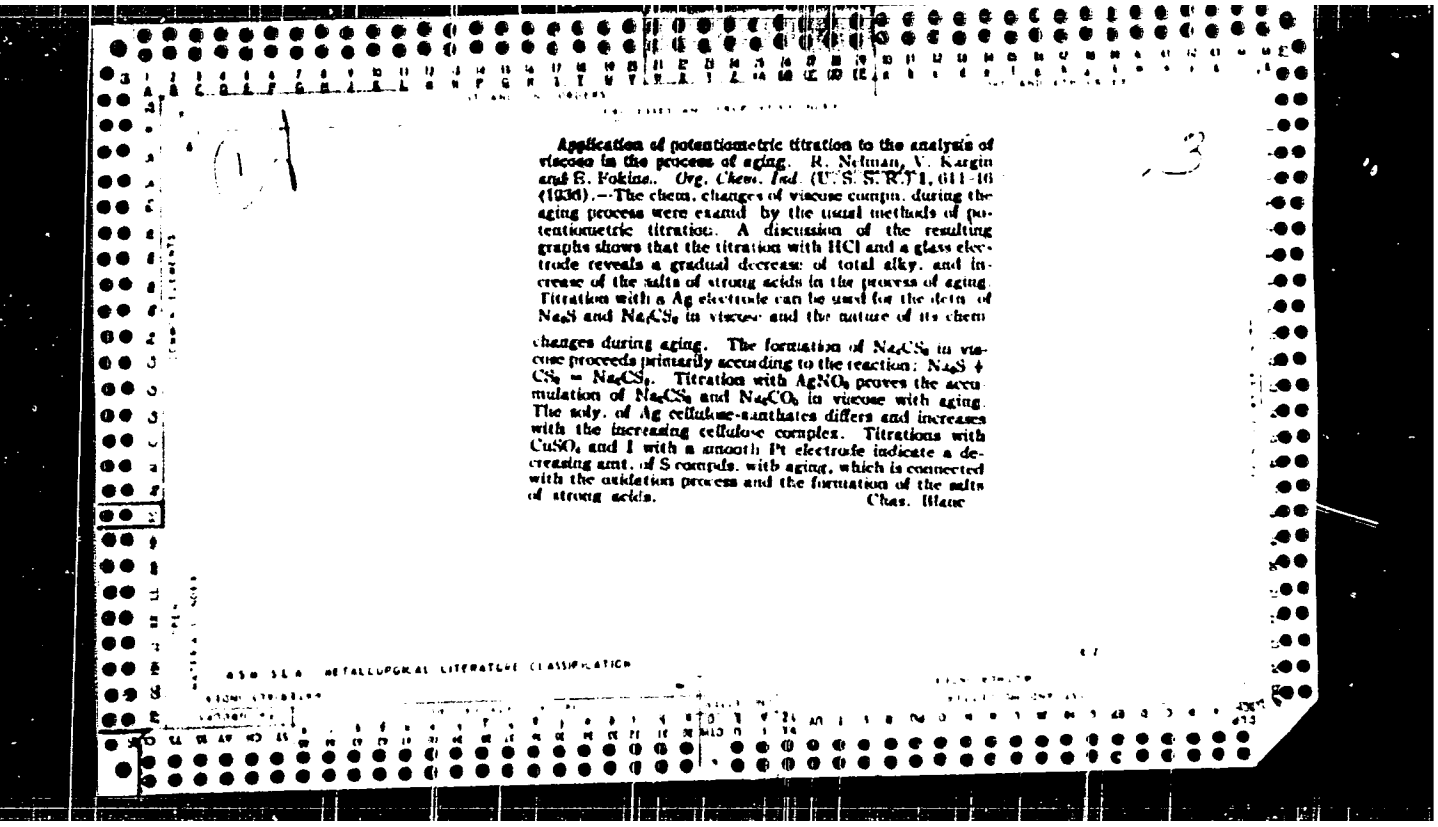
New products of the Opolskie Electric Motor Works. Wiad elektrotechn 32 no.5/6:134-141 My-Je '64.

Determination of sodium sulfite in viscose. R. Neiman. *Iskusstvennoe Volokno* (*Artificial Fiber*) 6, 10–11(1935).—Consistently accurate results and rapid filtration of the mixt. can be achieved in the detn. of Na_2SO_3 + $Na_2S_2O_3$ in viscose by the method of Kotaro Tanemura (*C. A.* 24, 3642) by pptg. the xanthate with satd. NaCl soln. preliminary to the addn. of $CaCO_3$. Similar improvement results in the detn. with $Pb(ONa)_2$ by the preliminary salting out of xanthate. Chas. Blanc

METALLURGICAL LITERATURE CLASSIFICATION



A method for the study of the solvation and aggregation of substances. N. S. Steinker, R. F. Nelman and G. A. Krilov. *J. Phys. Chem. (U.S.S.R.)* 9, 145-51(1937) (in Russian); *Acta Physicochim. U.R.S.S.* 1, 705 and (1934). Addn. of increasing amts. of water or of benzene to an EtOH soln. of ethyl violet at 30° at first decreases the size of the dye particles and then increases it. In MeOH solns. such minimum is not observed on addn. of benzene but is observed on addn. of water. The solvate layer of EtOH is calcd. to be unimolecular. F. H. R.



Application of potentiometric titration to the analysis of viscose in the process of aging. R. Neiman, V. Kargin and E. Fokina. *Org. Chem. Ind.* (U.S.S.R.) 1, 611-16 (1936).—The chem. changes of viscose comprn. during the aging process were examd. by the usual methods of potentiometric titration. A discussion of the resulting graphs shows that the titration with HCl and a glass electrode reveals a gradual decrease of total alky. and increase of the salts of strong acids in the process of aging. Titration with a Ag electrode can be used for the detn. of Na_2S and Na_2CS_3 in viscose and the nature of its chem changes during aging. The formation of Na_2CS_3 in viscose proceeds primarily according to the reaction: $Na_2S + CS_2 = Na_2CS_3$. Titration with $AgNO_3$ proves the accumulation of Na_2CS_3 and Na_2CO_3 in viscose with aging. The sply. of Ag cellulose-xanthates differs and increases with the increasing cellulose complex. Titrations with $CuSO_4$ and I with a smooth Pt electrode indicate a decreasing amt. of S compds. with aging, which is connected with the oxidation process and the formation of the salts of strong acids.

Chas. Blanc

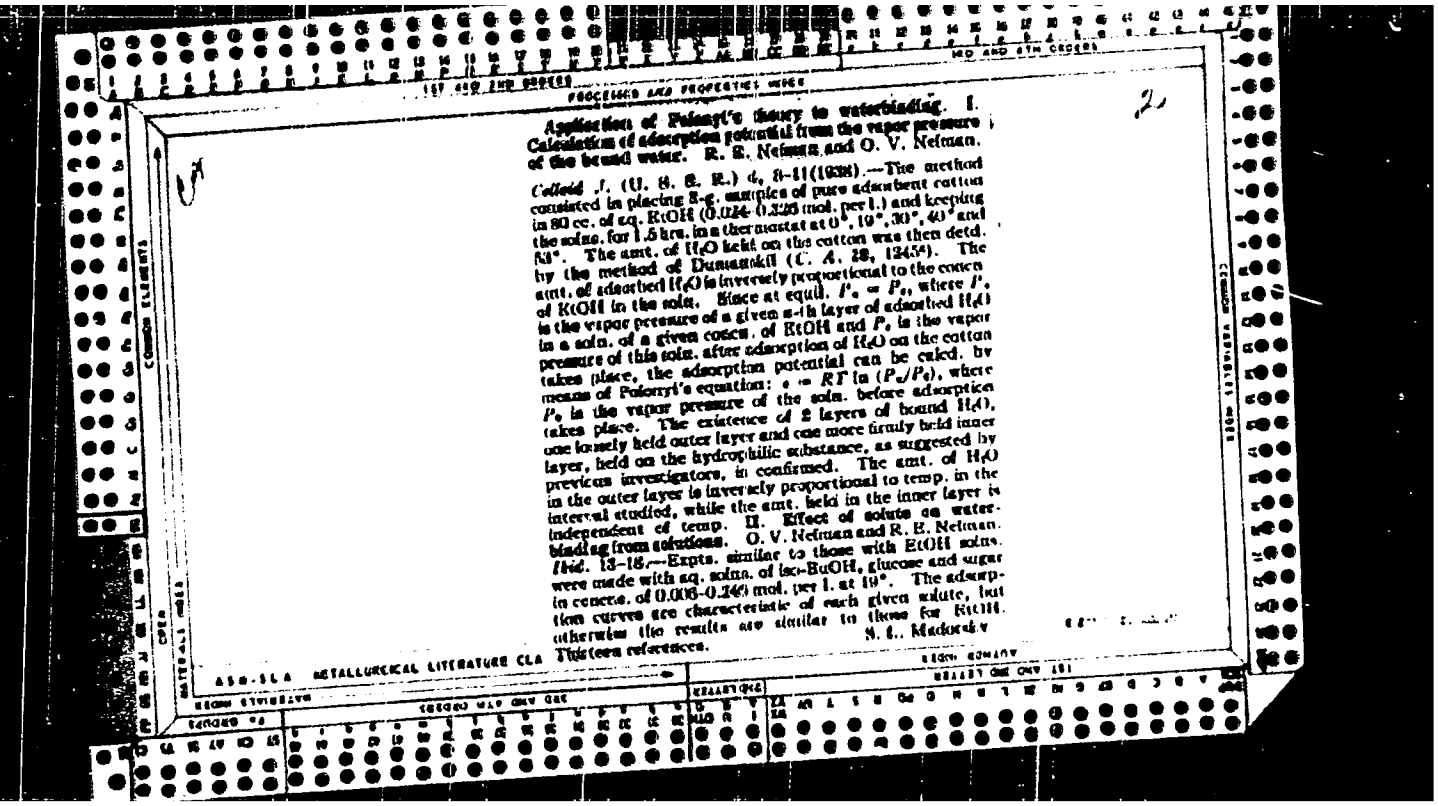
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Metallic membranes. Silver membranes. I. A. Santalov and R. E. Neiman. *Colloid J.* (U. S. S. R.) 3, 273-80(1937).—Ag membranes were prepd. by evapg. the Zn from plates made of Ag-Zn alloys in a vacuum, at 630-700°. The effect of concn. of Zn in the alloy and of length of time of evapn., on size and no. of pores in the membrane was investigated. S. L. Madorsky

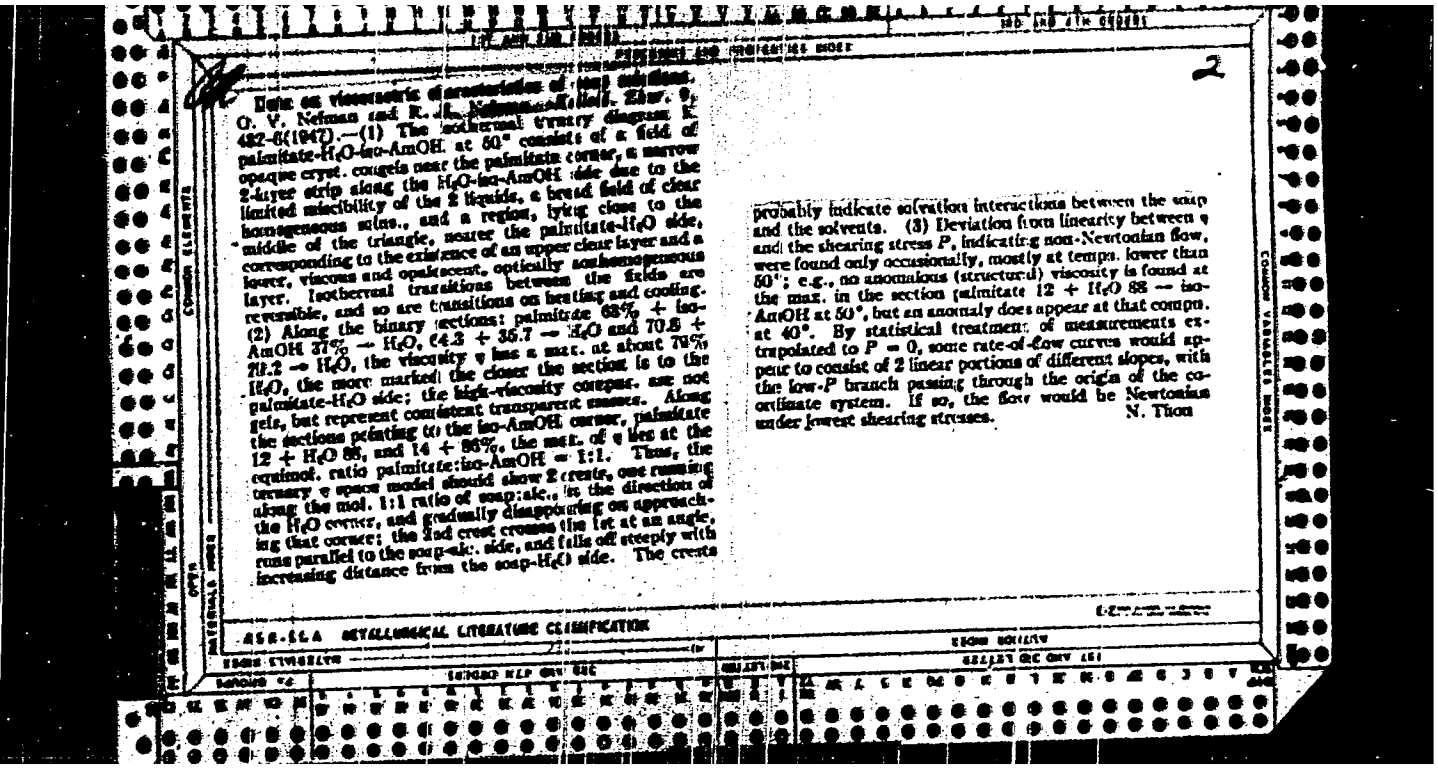
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Application of Polanyi's theory to waterbinding. I. Calculation of adsorption potential from the vapor pressure of the bound water. R. E. Neiman and O. V. Neiman.

Colloid J. (U. S. S. R.) 4, 3–11 (1938).—The method consisted in placing 2-g. samples of pure adsorbent cotton in 80 cc. of aq. EtOH (0.024–0.325 mol. per l.) and keeping the solns. for 1.5 hrs. in a thermostat at 0°, 10°, 30°, 40° and 53°. The amt. of H_2O held on the cotton was then detd. by the method of Dumanskii (*C. A.* 28, 1245⁸). The amt. of adsorbed H_2O is inversely proportional to the concn. of EtOH in the soln. Since at equil. $P_s = P_0$, where P_s is the vapor pressure of a given n-th layer of adsorbed H_2O in a soln. of a given concn. of EtOH and P_0 is the vapor pressure of this soln. after adsorption of H_2O on the cotton takes place, the adsorption potential can be calcd. by means of Polanyi's equation: $\epsilon = RT \ln (P_s/P_0)$, where P_0 is the vapor pressure of the soln. before adsorption takes place. The existence of 2 layers of bound H_2O, one loosely held outer layer and one more firmly held inner layer, held on the hydrophilic substance, as suggested by previous investigators, is confirmed. The amt. of H_2O in the outer layer is inversely proportional to temp. in the interval studied, while the amt. held in the inner layer is independent of temp. II. **Effect of solute on water-binding from solutions.** O. V. Neiman and R. E. Neiman. *Ibid.* 13–18.—Expts. similar to those with EtOH solns. were made with aq. solns. of iso-BuOH, glucose and sugar in concns. of 0.006–0.240 mol. per l. at 19°. The adsorption curves are characteristic of each given solute, but otherwise the results are similar to those for EtOH. S. L. Madorsky

Thirteen references.



Light on viscometric characteristics of soap solutions. O. V. Nelman and R. [illegible] Kolloid. Zhur. 9, 482-6(1947).—(1) The isothermal ternary diagram K palmitate-H_2O-iso-AmOH at 50° consists of a field of opaque cryst. congels near the palmitate corner, a narrow 2-layer strip along the H_2O-iso-AmOH side due to the limited miscibility of the 2 liquids, a broad field of clear homogeneous solns., and a region, lying close to the middle of the triangle, nearer the palmitate-H_2O side, corresponding to the existence of an upper clear layer and a lower, viscous and opalescent, optically nonhomogeneous layer. Isothermal transitions between the fields are reversible, and so are transitions on heating and cooling. (2) Along the binary sections: palmitate 68% + iso-AmOH 37% — H_2O, 64.3 + 35.7 — H_2O and 70.8 + 29.2 — H_2O, the viscosity η has a max. at about 70% H_2O, the more marked the closer the section is to the palmitate-H_2O side; the high-viscosity compns. are not gels, but represent consistent transparent masses. Along the sections pointing to the iso-AmOH corner, palmitate 12 + H_2O 88, and 14 + 86%, the max. of η lies at the equimol. ratio palmitate:iso-AmOH = 1:1. Thus, the ternary η space model should show 2 crests, one running along the mol. 1:1 ratio of soap:alc., in the direction of the H_2O corner, and gradually disappearing on approaching that corner; the 2nd crest crosses the 1st at an angle, runs parallel to the soap-alc. side, and falls off steeply with increasing distance from the soap-H_2O side. The crests probably indicate solvation interactions between the soap and the solvents. (3) Deviation from linearity between η and the shearing stress P, indicating non-Newtonian flow, were found only occasionally, mostly at temps. lower than 50°; e.g., no anomalous (structural) viscosity is found at the max. in the section palmitate 12 + H_2O 88 — iso-AmOH at 50°, but an anomaly does appear at that compn. at 40°. By statistical treatment of measurements extrapolated to $P = 0$, some rate-of-flow curves would appear to consist of 2 linear portions of different slopes, with the low-P branch passing through the origin of the coördinate system. If so, the flow would be Newtonian under lowest shearing stresses.

N. Thon

NEYMAN, R. E.

"The Problem of the Coefficient of Temperature Conductivity in Jellies," Kolloid. Thur., 11, No. 2, 1949. Voronezh State Univ. -1948-.

NEYMAN, O. V.

C.A.

2

Volume effects associated with sol-gel transformations and with aging of ferric hydroxide gels. R. I. Neiman and R. I. Sakhbutkova (Univ. Voronezh). [illegible] 12 [illegible]. When 10 cc. 0.1 N $FeCl_3$ soln. was mixed [illegible] with 10 cc. 0.1 N NaOH soln., the vol. increased by [illegible] cc. [illegible] H_2O was [illegible] with 10 cc. 0.1 N NaCl with 10 cc. [illegible] $Fe(OH)_3$ forma[illegible]. On mixing of 10 cc. [illegible], the increase due to $Fe(OH)_3$ formation [illegible] vol. decrease of [illegible]. When the mixt. obtained was left to age for a week, the vol. decreased by [illegible] cc.; this effect probably was due to change of the $Fe(OH)_3$ ppt. to a more ordered state. Coagulation of a dialyzed $Fe(OH)_3$ sol [illegible] by 0.01 N Na_2SO_4 caused contraction of [illegible] cc., equal to that observed by mixing 0.01 N Na_2SO_4 with H_2O alone. Also peptization of $Fe(OH)_3$ by 0.2 N NaOH was not associated with any sp. vol. change.
J. J. Bikerman

NEYMAN, R.E.

USSR 600

Gelatine, Expansion(Heat)

Characteristics of thermal expansion of gelatin gels and solutions. Dokl. AN SSSR,82, No. 3, rcd. 1 Oct. 1951.

SO: Monthly List of Russian Accessions, Library of Congress, June 1952. Uncl.

USSR/Chemistry - Gels Mar/Apr 52

"Heat Expansion of Gels and High-Polymer Solutions, I. Gelatin Gels," P. E. Neymman, Faculty of Chem, Voronezh State U

"Kolloid Zhur" Vol XIV, No 2, pp 107-111

Studied the heat expansion by the dilatometric method. The volume effect which customarily occurs in phase conversions is absent in the gelation of gelatin. The heat expansion coeff of gelatin gel changes abruptly reaching a max at a definite temp. This is an anomaly discovered for the 1st time. It is thought possible to consider

216T13

gelation as a critical phenomenon in the sense of the views of Semenchenko. "Zhur Fiz Khim" Vol XXI, p 1461, 1947; Vol XXV, p 121, 1951; "Dok Ak Nauk SSSR" Vol LXXIII, No 2, p 331, 1950) regarding generalized critical phenomena and as formulated for colloidal processes by Nikolayev (Report at the All-Union Conf on Colloid Chem, Kiev, Jun 1950).

216T13

NEYMAN, P. E.

NEYMAN, R. Ye.

"Peculiarity of Thermal Expansion of Jellies and Gelatin Solutions," DAN, 82, No. 3, pp 419-42[illegible], 1952.

NEYMAN, R. E.

USSR/Chemistry - Gels 21 Jan 52

"Peculiarities of Thermal Expansion of Gels and Gelatin Solutions," R. E. Neyman, Voronezh State U

"Dok Ak Nauk SSSR" Vol LXXXII, No 6, pp 419-422

The temp - vol increase (dilatometric) curves for gels of varying concns of gelatin show a break at 37-39°. If the vol effect of gelatin is zero, then the coeff of thermal expansion for the gel at a certain temp undergoes an abnormal jump. This was not noticed by anyone else until now. Gelatin may be characterized as follows: 1. There is no

211T34

thermal effect during gelation. 2. There also is no vol effect during gelation. 3. At a definite temp the coeff of thermal expansion undergoes a sharp change reaching a max value. Aging of a gel has no effect on these properties. The same expts were performed on the same gel after a period of 1.5 mos and showed no apparent change.

211T34

NEYMAN, R. Ye.

Anomalies in the thermal expansion of solutions of ovalbumin. R. E. Neiman (State Univ., Voronezh). *Doklady Akad. Nauk S.S.S.R.* 92, 615–18(1953); cf. *C.A.* 46, 6450c. —Dilatometric measurements carried out on a soln. of native ovalbumin (I) in phosphate buffer at pH 6.2 over the range 30–8° show a steep and abrupt decline in the curve of the coeff. of thermal expansion vs. temp. from 34.8 to 35.2° and an equally abrupt resumption of expansion at 35.2°. Similar measurements on a soln. of irreversibly denatured I give an almost identical curve. J. P. Hanelly

NEYMAN, R. Ye.

V Particularities of the thermal expansion of gels and solutions of high polymers. II. Agar and gelatin gels. R. E. Neiman (State Univ. Voronezh). *Kolloid. Zhur.* 16, 201–3 (1954); cf. *C.A.* 48, 6480i.—The expansion coeff. of agar gels has a max. (at 32° for 1% gels and 32.5° for 8% gels) and a min. approx. 0.5° higher. Gelatin gels (20%) in H_2O, in 3*M* urea, and in quinone soln. have a max. at 34.5° and a min. at 35.5°. These anomalies are related to mol. transformations in polymers. J. J. Bikerman

Polymer association in dilute solutions. H. Morawetz (Polytech. Inst., Brooklyn, N.Y.). *Industrie chim. belge* 19, 607–11 (1954)(in English).—See *C.A.* 48, 8006e. J. Lemli

NEYMAN, R. X Y.E.

USSR

Particularities of the thermal expansion of gels and solutions of high polymers. II. Agar and gelatin gels. R. R. Neiman, Colloid J. U.S.S.R. 16, 203-8(1954)(Engl. translation).—See C.A. 48, 11876e. H. L. H.

NEYMAN, R. Ye.

USSR.

The thermal expansion of gels and high-polymer solutio. I. III. Temperature relaxation of the volume of gelatin gels. R. E. Neiman. *Colloid J.* (U.S.S.R.) 16, 375–7(1954) (Engl. translation).—See *C.A.* 48, 13354*b*. H. L. H.

The thermal expansion of gels and high-polymer solutions. III. Temperature relaxation of the volume of gelatin gels. R. E. Neiman (State Univ., Voronezh). *Kolloid. Zhur.* 16, 300-3(1954); cf. *C.A.* 48, 11976c.—Gelatin gels (x %) were kept at a temp. $(T - 10)°$ and then transferred in a bath of $T°$. They reached the final vol. corresponding to $T°$ in τ min. When x increased from 10 to 40%, τ increased, e.g. 3 fold. The graphs of log τ against $1/T$ consisted of 2 straight lines each, and the kink occurred at 28°, 33°, and 35° for x = 10%, 20%, and 40%, resp., i.e. approx. at the m.p. of the gel. The apparent heat of activation was near 20 below, and near 60 kcal./mole above the kink temp. There was no kink on the graph for gelatin treated with quinone. Addn. of urea lowered the τ of gelatin.

J. J. Bikerman

NEYMAN, R. E.; Neyman, O. V.

"On the Question of Some of the Pecularities of Albuminous Jellies and Solutions" (K voprosu o nekotorykh osobennostyakh teplovogo rasshireniya belkovykh studney i rastvorov) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp. 458-463, Iz. AN SSSR, Moscow, 1956

(given at abovd Conference, Minsk, 21-4 Dec 53)

Author: Voronezh State University, Chemistry Faculty

NIKOLAYEV, A.V.; NEYMAN, R.E.; NEYMAN, O.V.

Characteristics of the state of high polymer gels. Koll. zhur. 19 no.1:121-124 Ja-F '57. (MLRA 10:4)

1. Institut obshchey i neorganicheskoy khimii AN SSSR, Moskva i Voronezhskiy inzhenerno-stroitel'nyy institut.
(Colloids) (High molecular weight compounds)

NEYMAN, R.E.; KUDZENKO, E.I.

Photometric determination of the interaction between molybdic acid and sulfosalicylic acid in solution. Trudy VGU 57:75-80 '59. (MIRA 13:5)
(Molybdic acid) (Salicylic acid)

S/069/60/022/006/007/009
B013/B066

AUTHORS: Neyman, R. E. and Lyashenko, O. A.

TITLE: Kinetics of Turbidity Change of Dilute Synthetic Latices During Their Coagulation by Means of Electrolytes

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 6, pp. 757-759

TEXT: In the present letter to the editor the authors report on the investigation of the agglomeration process of globulae carried out by means of light scattering and of the slow coagulation of dilute synthetic latices on addition of electrolytes. Various electrolytes ($CaCl_2$ or NaCl) (Table) were added to a divinyl styrene latex of the type СКС-30-АР (SKS-30-AR) (emulsifier: Nekal), which was 10^4 times diluted and not dialyzed; the change of turbidity with time was observed up to complete coagulation of the latex. A НФМ(NFM) nephelometer was used for the measurements. The concentration gradient of the refractive index of the dispersions was determined on a refractometer of the ИРТ-23 (IRT-23) type. The kinetic curves of the turbidity change were determined for one

Card 1/3

Kinetics of Turbidity Change of Dilute Synthetic Latices During Their Coagulation by Means of Electrolytes

S/069/60/022/006/007/009
B013/B066

of the latex samples (dry content 14%, pH 10, surface tension 1? dyne/cm, saturation of the surface of the globulae with the emulsifier 70%, average radius of the globulae, according to the turbidity data, r=19 mμ). The parallel experiments were well reproducible. The introduction of the electrolyte was found to cause the agglomeration of the globulae. The increase in turbidity which indicates this agglomeration, becomes slower after a certain time. The increasing saturation of the globula surface with the emulsifier, which takes place during the agglomeration, results in the formation of an adsorption - solvate layer. This concludes the first stage of the process. The further, slower course of the coagulation is probably due to the necessity of overcoming the potential barrier resulting from the protective action of the solvate layer. The primary agglomeration is accelerated by an increase in the electrolyte concentration. The dimensions of the resultant aggregates increase in this connection. This is due to the fact that the degree of the electrolyte action on the state of the adsorption-solvate sheath depends on its concentration. An increase in concentration presumably contributes to a drop of the potential barrier. The observed reduction of turbidity is due to the

Card 2/3

Kinetics of Turbidity Change [illegible] Dilute Synthetic Latices During Their C[illegible] Means of Electrolytes

S/069/60/022/006/007/00[illegible]
BC12/BC[illegible]

ascending of the coagulated dispersion to the surface. Similar results were also obtained for a number of other samples of this latex. There are 1 figure and 1 table.

ASSOCIATION: Voronezhskiy universitet Khimicheskiy fakul'tet (Voronezh University, Chemical Division)

SUBMITTED: July 8, 1960

Card 3/3

S/069/61/023/006/004/005
B119/B101

AUTHORS: Neyman, R. E., Lyashenko, O. A., Kirdeyeva, A. P., Yegorov, A. K., Kiseleva, O. G.

TITLE: Investigation of stability and coagulation of synthetic latexes 1 Effect of adsorptive saturation of the globule surface by the emulsifier

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 6, 1961, 732 - 738

TEXT: The coagulation kinetics of dilute synthetic latexes as dependent on the adsorptive saturation of the globule surface by the emulsifier (Nekal) was investigated. Experiments were conducted with divinyl styrene latex of the type СКС-30-АР (SKS-30-AR). The production of latex specimens differently saturated with emulsifier was carried out: (1) Dialysis of the latex for 50 days, the adsorptive saturation with emulsifier having been reduced down to 19%. The dialyzate was divided and mixed with various amounts of Nekal. (2) The latex was also dialyzed Specimens were taken during dialyzing (maximum saturation of the globule surface ~75%, minimum ~11%). The degree of surface saturation was

Card 1/4

S/069/61/023/006/004/005
B119/B101

Investigation of stability...

determined by adsorption titration with aqueous Nekal solution (indication: change of the surface tension). Coagulation was brought about by means of $CaCl_2$ and NaCl, respectively. The course of coagulation was observed on the basis of turbidity (measuring instrument: НФМ (NFM) nephelometer). The value of the concentration gradient of the refractive index of dispersion, was determined by means of a ИРФ 23 (IRF-23) refractometer. The macroelectrophoresis of latex specimens was conducted with an instrument according to A. I. Rabinovich and Ye. V. Fodiman (Zh. fiz. khimii 2, 336, 1931). The ζ-potential was calculated on the basis of data obtained from the electrophoresis. Results: The coagulation of latex not completely saturated takes place in two steps. The duration of the first step (characterized by a relatively quick turbidity of the solution) was 80 - 85 min for the least saturated latex specimens, and increased with increasing adsorptive saturation. Explanation: The quick coagulation of the globules occurs in places not covered by emulsifier. The size of the aggregates developed after this first coagulation step decreases, therefore, with increasing surface saturation of the initial globules. The second step takes place much more slowly than the first. This is due to the necessary overcoming of an additional

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potential barrier. The first phase could not be establ.sned for completely saturated latex; coagulation takes place from the start according to the second phase. The mean radius of the initial globules was 20 - 22 mμ. The radius of the aggregates formed after the first coagulation step was 43 - 58 mμ. The surface tension of the latex decreases with increasing saturation and is constant of further Nekal additions after the total saturation. The ζ-potential changes only slightly within the degrees of saturation investigated: 55 mv for latex saturated up to 25 - 30%; 65 mv for completely saturated latex. A dependence of the electrophoretic migration rate of the globules on their adsorptive degree of saturation was not established. Studies by B. V. Deryagin (Tr Tret'ey vses. konferentsii po kolloidnoy khimii, Izd. AN SSSR 1956, str. 225), P. A. Rebinder (Sb. "Kolloidy v pishchevoy prom-sti", 2, 1949, str. 21), and S. A. Glikman and Ye P. Korchagina (Ref. 5: Kolloidn. zh. 19, 657, 1957) are mentioned. There are 6 figures, 1 table, and 13 references: 9 Soviet and 4 non Soviet. The two most recent references to English-language publications read as follows: J. T. G. Overbeek, Advances in Coll. Science, N. J., 3, 97, 1950. S. H. Maron, W. W. Bowler, J. Amer. Chem. Soc., 70, 3893, 1948.

Card 3/4

Investigation of stability . .

S/069/61/023/006/004/005
B119/B101

ASSOCIATION: Voronezhskiy universitet, Khimicheskiy fakul'tet Laboratoriya vysokomolekulyarnykh soyedineniy (Voronezh University, Division of Chemistry Laboratory of High molecular Compounds)

SUBMITTED: August 27, 1960

Card 4/4

NEYMAN, R.E.

Characteristics of the thermal expansion of protein gels and sols. Vysokom.soed. 4 no.9:1404-1410 S '62. (MIRA 15:11)

1. Voronezhskiy gosudarstvennyy universitet.
(Gelatin)
(Expansion (Heat))

39801
S/069/62/024/004/003/003
B101/B138

11.4200

AUTHORS: Neyman, R. E., Lyashenko, O. A.

TITLE: Investigation of the stability and coagulation of synthetic latexes. 2. Dependence of the rate of first stage of latex coagulation on concentration and valence of the coagulating ions.

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 4, 1962, 494 - 496

TEXT: Previous papers (Kolloidn. zh., 22, 757, 1960; ibid., 23, 732, 1961) showed that the coagulation of divinyl styrene latexes by electrolytes proceeds in two stages. The slow first stage was here studied nephelometrically in CKC-30AP (SKS-30AR) divinyl styrene latex with Nekal as emulsifier. The latex (dry residue 7.5%) was diluted $5 \cdot 10^3$ - 10^4 times (pH = 6) and coagulated with NaCl, $CaCl_2$, or $NdCl_3$. Results: (1) The coagulation time t (300-500 min) of the slow stage decreases with increasing electrolyte concentration. When rapid coagulation sets in, t (3-7 min) becomes independent of electrolyte concentration. (2) The values found for transition from slow to rapid coagulation were:

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Investigation of the stability ...

A	B		
	NaCl	$CaCl_2$	$NdCl_3$
1.35	160	2	0.05
3.90	240	4	0.20
6.00	480	7	0.25
7.60	560	8	0.30

where A is the content of emulsifier in the latex (in % of rubber); and B is the electrolyte concentration (mole/l).

If the $CaCl_2$ concentration is 1, 60 - 80 times more NaCl, but only 0.03 - 0.05 $NdCl_3$ is required to reach the transition point to rapid coagulation. This is in good agreement with the Schultz-Hardy rule. Hence, the existence of a relation between the first stage of slow coagulation and the electrostatic factor of the aggregate stability of latexes is confirmed. There are 2 figures and 1 table.

ASSOCIATION: Voronezhskiy universitet, Khimicheskiy fakul'tet, Laboratoriya vysokomolekulyarnykh soyedineniy (Voronezh University, Division of Chemsitry, Laboratory of High-molecular Compounds)

SUBMITTED: August 2, 1961

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S/069/62/024/005/007/010
B106/B186

AUTHORS: Neyman, R. E., Verezhnikov, V. N.

TITLE: Stability and coagulation of synthetic latexes. 3. Effect of the pH on the kinetics of slow coagulation of divinyl styrene latexes by electrolytes

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 5, 1962, 593 - 598

TEXT: The effect of a pH of between 2 and 10 on the kinetics of the slow coagulation of two dilute divinyl styrene latexes, types СКС-30-АРК (SKS-30-ARK) and СКС-30-АР (SKS-30-AR) (with colophony and Nekal as emulsifiers) was studied nephelometrically. NaCl and $CaCl_2$ were used as coagulants. With any pH value, coagulation proceeds in two stages. Only the first stage was studied, the kinetics of which is determined by the overcoming of an energy barrier which is due to electrostatic repulsion when the ion atmospheres are superimposed. This first stage of coagulation depends on the pH value. The rates of coagulation in the neutral and alkaline regions are practically independent of the pH value for both latices. At pH <5, coagulation proceeds much faster, which is explained

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S/069/62/024/005/008/010
B117/B186

AUTHORS: Neyman, R. E., Verezhnikov, V. N.

TITLE: Investigation into the stability and coagulation of synthetic latexes. 4. Particularities of the coagulation of adsorption-saturated latexes

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 5, 1962, 599-601

TEXT: This paper reports the results of a nephelometric investigation into the kinetics of slow coagulation of dilute divinyl styrene latexes (СКС-30-АР(SKS-30-AR), СКС-30-АРК (SKS-30-ARK)) with emulsifier (Nekal and potash rosin soap) present in excess. The adsorption layer at the particle surface of samples with an emulsifier content above the critical concentration for micelles formation reaches saturation, whereby the process of coagulation is altered considerably. The coagulation of saturated latexes is preceded by the induction of latent modifications over a long period, which may be due to the change in state of stable polymolecular liquid films. The thickness of these films, which form at the surface of particles coated with soap, decreases very slowly while the

electrolyte is being added, thereby determining how long the induction period lasts. This can be shortened by lowering the pH of the medium. In this case, solvation is weakened, probably because a considerable part of the soap at the particle surface is transformed to the corresponding acid. Slow coagulation of saturated latexes corresponds to the second stage of coagulation of unsaturated latexes. After the period of induction the latex darkens quickly at first and then brightens again. This process is influenced by the shape of the aggregates forming. These results confirm the interpretation of the varying coagulation of saturated and unsaturated latices suggested by R. E. Neyman, O. A. Lyashenko, A. P. Kirdeyeva, A. K. Yegorov, and O. G. Kiseleva (Kolloidn. zh. 23, 732, 1961) who attributed this difference to the stability of molecular aggregates being determined by two factors: namely, that characterized by electrostatic repulsion due to the superposition of ionic atmospheres and that which is non-electrostatic by nature, distinguished by properties of saturated adsorption-solvated films of the emulsifier. There are 2 figures.

ASSOCIATION: Voronezhskiy universitet, Khimicheskiy fakul'tet, Laboratoriya vysokomolekulyarnykh soyedineniy (Voronezh University, Chemical Department, Laboratory for High-molecular Compounds)

NEYMAN [illegible] R.E.; K[illegible]EVA, O.G.

Stability and coagulation of [illegible], Part [illegible]
25 no.[illegible]-350-358 My-Je [illegible].

1. Voronezhskiy universitet, [illegible] fakul'tet, laboratoriya vysokomolekulyarnykh [illegible].

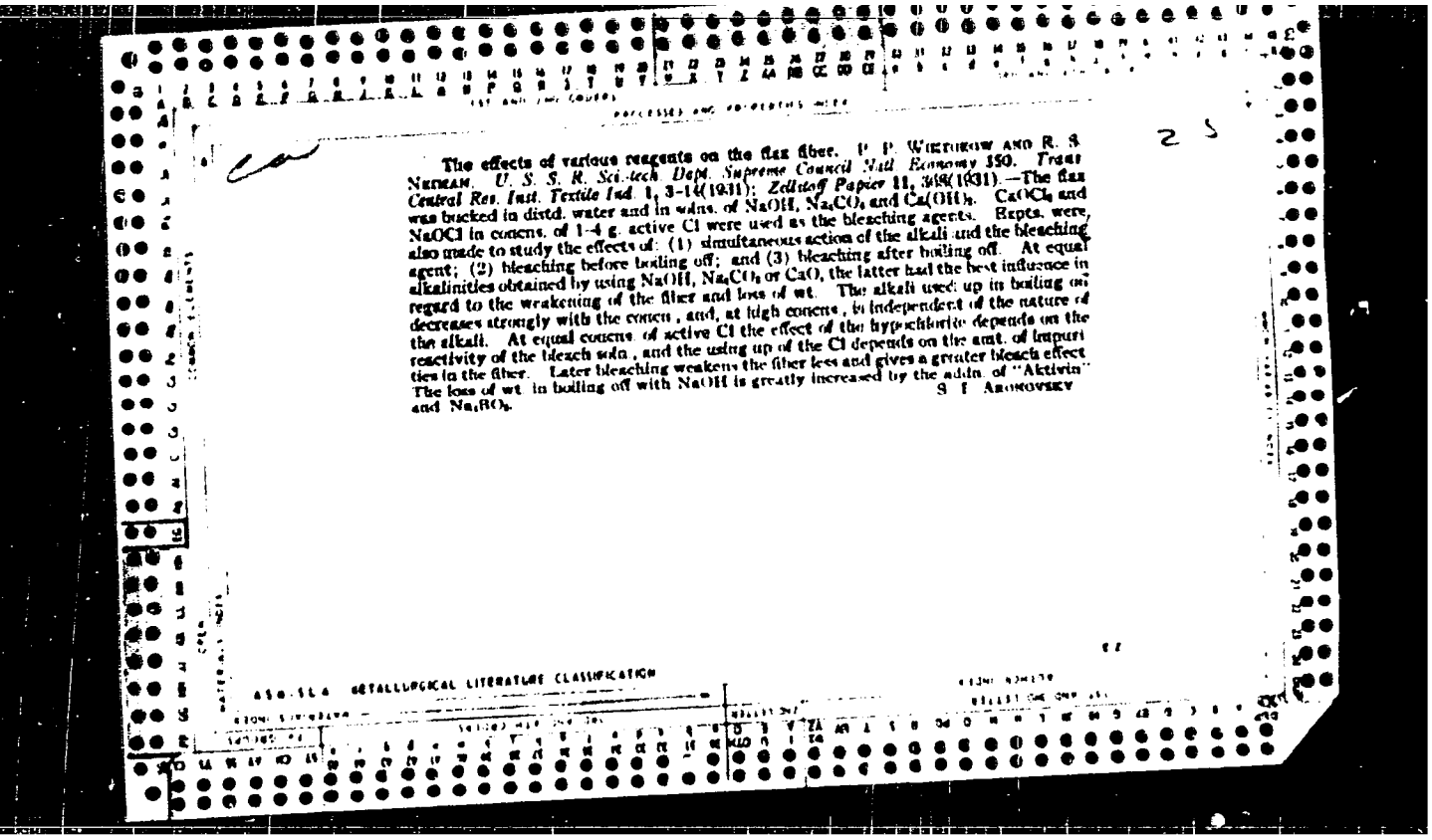
NEYMAN, R.E.; LYASHENKO, O.A.

Stability and coagulation of synthetic latexes. Part 6: Effect of secondary ions of electrolyte-coagulants on the kinetics of the first stage of coagulation. Koll. zhur. 27 no.2:254-258 Mr-Ap '65. (MIRA 18:6)

1. Voronezhskiy universitet, Nauchno-issledovatel'skiy fiziko-khimicheskiy institut.

NEYMAN, R.I., inzh.; SMIRNOV, B.I.

Use of split wooden pole arms on 35-110kv. overhead power lines. Energetik 12 no.11:26-27 N '64 (MIRA 18:2)



The effects of various reagents on the flax fiber. P. P. Wittenow and R. S. Neiman. *U. S. S. R. Sci.-tech. Dept. Supreme Council Natl. Economy* 150. *Trans. Central Res. Inst. Textile Ind.* 1, 3-14(1931); *Zellstoff Papier* 11, 398(1931).—The flax was bucked in distd. water and in solns. of NaOH, Na_2CO_3 and $Ca(OH)_2$. $CaOCl_2$ and NaOCl in concns. of 1-4 g. active Cl were used as the bleaching agents. Expts. were also made to study the effects of: (1) simultaneous action of the alkali and the bleaching agent; (2) bleaching before boiling off; and (3) bleaching after boiling off. At equal alkalinities obtained by using NaOH, Na_2CO_3 or CaO, the latter had the best influence in regard to the weakening of the fiber and loss of wt. The alkali used up in boiling off decreases strongly with the concn., and, at high concns., is independent of the nature of the alkali. At equal concns. of active Cl the effect of the hypochlorite depends on the reactivity of the bleach soln., and the using up of the Cl depends on the amt. of impurities in the fiber. Later bleaching weakens the fiber less and gives a greater bleach effect. The loss of wt. in boiling off with NaOH is greatly increased by the addn. of "Aktivin" and Na_2SO_3.

S. I. Aronovsky