SHAKHOVSKOY, N.M.

Eclipsing variable BB Cephei. Biul. Stal. astron. obser. no.18:28-30 '56. (MIRA 10:6)

(Stars, Variable)

SHAKOVSKOY, N.M.

Studying spectra and magnitudes of stars in the vicinity of Orion's belt. Biul. Stal. astron. obser. no. 20:3-17 '57.
(MIRA 11:8)

(Stars--Observations)

SHAKHOVSKOY, N.M.

Studying stars in the association Cepheus 2. Trudy GAISH 27:165-202 '56. (MIRA 12:1)

(Stars--Observations)

SHAKHOVSKOY, N.M.

Photographic study of variable stars. Biul. Stal.astron.obser. no.22/23:19-27 '57. (MIRA 11:7)
(Stars, Variable) (Astronomical photography)

SHAKHOVSKOY, N.M.

Elements of YY Cancri. Astron. tsir. no.183:17-18 Jl '57.
(MIRA 11:3)

1. Stalinabadskaya astronomicheskaya observatoriya.
(Stars, Variable)

SHAKHOVSKOY, N.

Brief remarks on 9 uninvestigated variables from the "Catalog of stars suspected of being variables." Astron. tsir. no.177:18-19 F '57. (MLRA 10:6)

1. Stalinabadskaya astronomicheskaya observatoriya Akademii nauk Tadzhikskoy SSR.

(Stars, Variable)

S/035/61/000/003/013/048
A001/A101

AUTHORS: Solov'yev, A.V. and Shakhovskoy, N.M.

TITLE: An investigation of 50 short-periodic cepheids

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 3, 1961, 25, abstract 3A265 ("Tr. In-ta astrofiz. AN TadzhSSSR", (formerly Tr. Stalinabadsk. astron. observ.), 1958, v. 7, 45 - 199)

TEXT: The authors present visual observations and results of processing the observations of 50 short-periodic cepheids obtained during 1934 - 1938, by N. I. Gur'yev. The following stars were observed: SW, XX And; BR, CP, CY, DN Aq; X, RV Ari; TZ Aur, RS, TV, TW, UU, UY Boo; RU CVn; RZ Cep; RR, RU, RV, RX Cet; RV CrB; UY, DM Cyg; SW Dra; RX, SV, UZ BB, BC Eri; SS For; RR Gem; TW Her; SV, SZ, UU Hya; RR Leo; U Lep; VY Lib; EZ Lyr; AV, BH, DH Peg; AR Per; RY Psc; V 440, V 675 Sgr; RU Sel; SX UMa; AF Vir; ИЗП (KZP) 465. The authors present vicinities maps, comparison stars, mean luminosity curves, elements, and epochs of normal maxima. For some cepheids later observations of other authors were used for checking the elements. Period changes were discovered in about 50% of cepheids. In most cases changes of period are irregular. There are 201 references.

[Abstracter's note: Complete translation]

V. Fedorovich

Card 1/1

/c

SOLOV'YEV, A.V.; SHAKHOVSKOY, N.M.

Investigation of 50 short-period Cepheids. Trudy AN Tadzh.SSR 76:45-199 '58. (MIRA 13:3)
(Cepheids)

41269
S/035/62/000/010/012/128
A001/A101

AUTHORS: Shakhovskoy, N. M., Dimov, N. A.

TITLE: An integrating stellar electropolarimeter

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10, 1962, 18 - 19, abstract 10A163 ("Izv. Krymsk. astrofiz. observ.", 1962, v. 27, 291 - 308)

TEXT: The authors describe photoelectric devices for studying polarization characteristics of stellar radiation within a broad spectral range. Synchronously with rotation of an analyzer (1 rev/sec), 20 RC-integrators are switching over. After a great number of revolutions, charges are stored on capacitors, which are proportional to the average, during the observation time, intensity of the polarized component of a star light for each position of the analyzer. During the entire time of storing, full intensity of the star light is continuously registered. A luminous standard with constant polarization is used for the control of apparatus sensitivity. The method described enables one to obtain results independent of variations of light flux during observation. An increase of observation time does not lead to additional errors. The results

Card 1/2

S/035/62/000/010/012/128
A001/A101

An integrating stellar electropolarimeter

of preliminary tests of the polarimeter mounted on a 40-cm refractor have shown that the rms error of one observation amounts to 0.16% in polarization degree and to $1^{\circ}7$ in the position of the polarization plane at the storage time of 3 min. The penetrating capacity, determined by the brightness of the night sky background, is equal to 11^{m}. A comparison with data of other authors (RZhAstr, 1961, 8A344) shows that the apparatus described yields results not inferior, in accuracy and penetrating capacity, to considerably larger telescopes at comparable observation times. There are 16 references.

From authors' summary

[Abstracter's note: Complete translation]

Card 2/2

SHAKHOVSKOY, N.M.

Observations of the polarization of β Lyrae. Astron.zhur. 39 no.4:755-758 Jl-Ag '62. (MIRA 15:7)

1. Institut astrofiziki AN Tadzhikskoy SSR.
(Stars, Variable) (Polarization (Light))

SHAKHOVSKOY, N.M.

Observations of the polarization of light in χ Ophiuchi. Astron. tsir. no.228:16-17 Ap '62. (MIRA 16:6)

1. Institut astrofiziki AN Tadzhikskoy SSR.
(Polarization(Light))
(Stars, Variable)

SHAKHOVSKOY, N.M.

Investigating the polarization of the radiation of variable stars. Astron. zhur. . 40 no.6:1055-1064 N-D '63. (MIRA 16:12)

1. Institut astrofiziki AN TadzhSSR.

SHAKHOVSKOY, N.M.

Comments on A. A. Boiarchuk's paper. Vop. kosm. 10:18-19 '64.
(MIRA 17:10)

SHAKHOVSKOY, N.M.

Polarization of the radiation of variable stars. Part 2: Eclipsing variable stars. Astron. zhur. 41 no.6:1042-1055 N-D '64 (MIRA 18:1)

1. Institut astrofiziki AN TadzhSSR.

SHAKHOVSKOY, V.

Image of our contemporary. Sov.foto 21 no.5:8-9 My '61.
(MIRA 14:5)

1. Fotokorrespondent zhurnala "Sovetskiy Soyuz"
(Photography--Potraits)

SHAKHOVTSEV, B.P.

Using the emersion method for finishing furniture with nitro lacquers. Sbor.vnedr.rats.pred. v les. i meb.prom. no.2:116-119 '59. (MIRA 13:8)

(Lacquer and lacquering)

SHAKHOVTSEV, V.I.

Specialization in the factories of Main Administration of Automobile and Tractor Parts Industries. Avt. i trakt. prom. no. 6:1-3 Je '56. (MLRA 9:9)

1. Ministerstvo avtomobil'noy promyshlennosti.
(Automobile industry)

SOV-110-58-9-4/19

AUTHOR: Chakhovtsev, V.I.

TITLE: The Improvement of Spark Plugs (Covershenstvovaniye svechey zazhiganiya)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 9, pp 10-13 (USSR)

ABSTRACT: Soviet plants produce spark plugs in accordance with GOST-2043-54. The threading is in three sizes: 10, 14 and 18 mm. The 10 mm type is produced only for the ZIL-110 car and has a crystallocorundum insulator. The 14-mm plugs are provided for ZIL-150, ZIL-151, "Moskvich", "Volga", ZIM and various motorcycles. The 18-mm plugs are produced for GAZ-51, GAZ-63, GAZ-69, "Pobeda", UralZIS-355M and for tractors. The two latter plugs have uralite insulators. Annual spark plug output in the USSR is several 10 million units. The author compares tabulated ceramic masses as to their suitability for plug production. He advocates the casting process for plugs, recommends increased automation in the plug production sector and analyzes diverse shapes and sizes of spark plugs, the microstructure of the central electrode made of NMTs-5 and Kh25T alloys (Photo 5) which he thinks to be excellent, and complains of the still insufficient hermetic properties of the present plugs (which are inferior to those of the firm "Champion"). The present nickel-manganese electrode

Card 1/2

SHAKHOVTSEV, V.I.

Reliability of ignition systems. Avt.prom. 27 no.12:18-22 D '61. (MIRA 15:1)

1. Nauchno-issledovatel'skiy eksperimental'nyy institut avtotraktornogo elektrooborudovaniya i priborov.
(Motor vehicles--Ignition)

GOSSE, N.P., inzn.; KISLUKHIN, S.V., inzh.; NIKOL'SKIY, G.A., inzh.; POPOV, G.S., inzh.; SHAKHOVTSEV, V.I., nauchnyy red.; VAGNER, A.A., red.; RUNOVA, A.P., red.; KOVAL'SKAYA, I.F., tekhn. red.; VINOGRADOV, Ye.A., tekhn. red.; IL'YUSHENKOVA, T.P., tekhn. red.

[Electric equipment and devices of motor vehicles; catalog and reference book] Avtotraktornoe elektro-oborudovanie i pribory; katalog-spravochnik. Moskva, TSentr.in-t nauchno-tekhn.informatsii mashino-stroeniia. Pt.1. 1961. 371 p. (MIRA 14:12)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po koordinatsii nauchno-issledovatel'skikh rabot. 2. Nauchno-issledovatel'skiy eksperimental'nyy institut avtotraktornogo elektrooborudovaniya i priborov (for Gosse, Kislukhin, Nikol'skiy, Popov). 3. Direktor Nauchno-issledovatel'skogo eksperimental'nogo instituta avtotraktornogo elektrooborudovaniya i priborov (for Shakhovtsev).
(Motor vehicles—Electric equipment)

PAVLOV, Mikhail Stepanovich; SHAKHOVTSEV, V.I., inzh., retsenzent; PETUKHOVA, G.N., red. izd-va; VLADIMIROVA, L.A., tekhn. red.

[Organization and technical standardization of assembling operations in instrument plants] Organizatsiia truda i tekhnicheskoe normirovanie sborochno-montazhnykh rabot na priborostroitel'nykh predpriiatiiakh. Moskva, Mashgiz, 1962. 197 p. (MIRA 15:6)
(Instrument industry--Production standards)

GOSSE, N.P., inzh.; KISLUKHIN, S.V., inzh.; NIKOL'SKIY, G.A., inzh.; POPOV, G.S., inzh.; SHAKHOVTSEV, V.I., nauchnyy red.; RUNOVA, A.P., red.; VAGNER, A.A., red.; ALEKSEYEVA, T.V., tekhn. red.

[Electrical equipment and instruments for automobiles and tractors; a reference catalog] Avtotraktornoe elektrooborudovanie i pribory; katalog-spravochnik. Moskva, TsINTIMASH. Pt.2. 1962. 378 p. (MIRA 15:9)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po koordinatsii nauchno-issledovatel'skikh rabot 2. Nauchno-issledovatel'skiy eksperimental'nyy institut avtotraktornogo elektrooborudovaniya i priborov (for Gosse, Kislukhin, Nikol'skiy, Popov).
(Tractors--Electric equipment)
(Automobiles--Electric equipment)

SHAKHOVTSEV, V.I.

Performance of the ignition system in starting a carburetor engine. Avt. prom. 30 no.9:9-13 S '64. (MIRA 17:10)

1. Nauchno-issledovatel'skiy i eksperimental'nyy institut avtomobil'nogo elektrooborudovaniya, karbyuratorov i priborov.

S/181/62/004/005/010/055
B102/B138

9.4177
24.2600

AUTHORS: Kononenko, I. D., Muzalevskiy, Ye. A., and Shakhovtsova, S.I.

TITLE: Investigation of the generation of electrical pulses by CdSe single crystals at liquid-nitrogen temperature

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1132-1134

TEXT: It was found that CdSe single crystals to which a constant voltage of about 200 v is applied generate current pulses at nitrogen temperature. The frequency of these pulses is between 1 and 0.001 cps and depends on the illumination intensity. The sizes of the crystals used were 2·2·4, 2·3·4, and 1·2·3 mm^3. They were illuminated with monochromatic light with an ИКС-12 (IKS-12) infrared spectrometer. The photocurrent was recorded with ЭПП-М1 (EPP-M1) and Н-3732 (N-3732) recorders. The pulses were observed with an ЭНО-1 (ENO-1) oscillograph and photographed with a loop oscillograph. Before the measurements the samples were kept in the dark for 15-30 min, then light was switched on and the applied voltage was raised slowly. The frequency ν of the observed current pulses was found to increase almost linearly with the intensity of the illumination. The

Card 1/5

curve $v(V)$ has a "shallow" minimum at ~300 v. When the sign of the voltage was altered, the shape, the amplitude and the frequency of the current pulses changed as shown in Fig. 5. The pulse generation could be damped and even suppressed by additional infrared illumination ($\lambda \approx 1\mu$). When the temperature of the sample was raised the pulse amplitudes became lower and the durations longer. The effect of pulse generation was observed whether the contacts were ohmic or not. There are 5 figures.

ASSOCIATION: Institut fiziki AN USSR Kiyev (Institute of Physics of the AS UkrSSR, Kiyev)

SUBMITTED: December 11, 1961

Legend to Fig. 5: (1) V direct, (2) V back.

Card 2/2

24.5600
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30102
S/185/62/007/003/015/015
D299/D301

AUTHORS: Kononzenko, I.D., Muzalevs'kyy, Ye.O. and Shakhovtsova, S.I.

TITLE: Crystal generator of infra-low frequency pulses

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 3, 1962, 338

TEXT: In studying the photoelectric properties of CdSe single crystals at liquid-nitrogen temperature, the authors observed that a photocurrent was generated by these crystals. First investigations showed that the observed effect differed considerably from that observed by Ye.A. Sal'kov and H.A. Fedorus (Ref.1: Fotoelektricheskiye i opticheskiye yavleniya v poluprovodnikakh, Kiyev, Izd-vo AS UkrSSR, 1959). It could be of great practical value. It was established that the frequency of the current pulses depend on the intensity L of illumination of the crystal, varying between 1 and 0.001 cycles. The generation of the photocurrent may stop if a voltage below 160 volts is applied, or if the intensity of illumination is high. The maximum

Card 1/2

[illegible] TSOVA, S.I.

Volt-ampere characteristics of generating CuS and CdSe single crystals. Fiz. tver. tela 6 no.8:2541-2543 Ag '64.
(MIRA 17:11)

1. Institut fiziki AN UkrSSR, Kiyev.

VINETSKIY, V.L.; KONOZENKO, I.D.; SHAKHOVTSOVA, S.I.

Analysis of the phenomenon of photocurrent pulse generation by cadmium selenide crystals. Fiz. tver tela 5 no.9:2698-2702 S '63. (MIRA 16:10)

1. Institut fiziki AN UkrSSR, Kiyev.

L 24125-65 EWT(m)/EWP(b)/T/EWP(t) IJP(c) RDW/JD
ACCESSION NR: AP4043393 S/0181/64/006/008/2541/2543

AUTHOR: Shakhovtsova, S. I.

TITLE: Current-voltage characteristics of generating CdS and CdSe single crystals

SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2541-2543

TOPIC TAGS: cadmium sulfide, cadmium selenide, single crystal, optical crystal, photosensitivity

ABSTRACT: Current--voltage characteristics were recorded at various illumination intensities, using white light or monochromatic light of wavelengths in the maximum photosensitivity region, both at room temperature and 77.3K. Above a certain illumination intensity threshold L_0 (values not quoted), the current in both CdS and CdSe rose (linearly at room temperature, but not at 77.3K) to a sharp peak at some voltage U_{cr} and then dropped on further increase of the voltage (negative resistance). Increase of the illumination intensity above L_0 reduced the voltage (U_{cr}) at which the current peak occurred and raised the peak current (15 mamp for CdS at room temperature and up to 200--400 mamp for CdSe at 77.3K (see Fig. 1 of Enclosure) (other values of the current and the corresponding illumination intensities are not quoted). At illumination intensities lower than L_0, the negative

Card 1/3

L 24125-65
ACCESSION NR: AP4043393

resistance region disappeared in both CdS and CdSe and current pulses were generated (in CdS only) under 200--300 v at room temperature and at 77.3K. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki AN UkrSSR, Kiev (Physics Institute, AN UkrSSR)

SUBMITTED: 12Feb64 ENCL: 01 SUB CODE: SS, OP

NO REF SOV: 002 OTHER: 000

Card 2/3

L 24125-65
ACCESSION NR: AP4043393

ENCLOSURE: 01

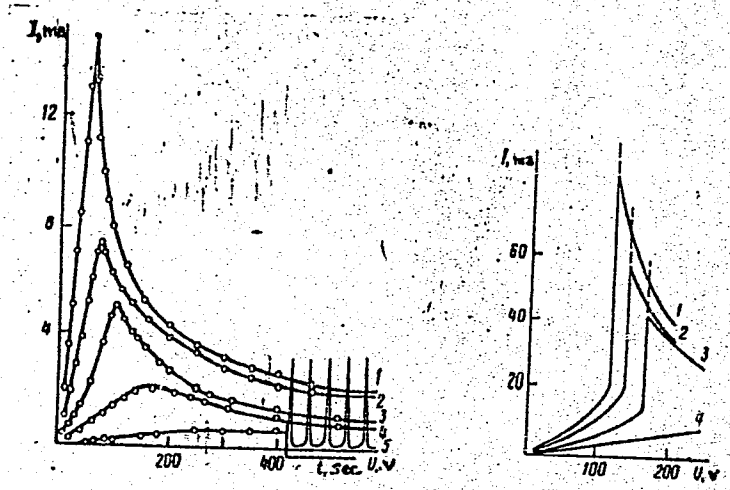


Fig. 1

Voltage-current characteristics of CdS sample at room temperature (left) and at 77.3K (right) for different illuminations

Card 3/3

L 23940-65 EWT(m)/EWP(b)/T/EWP(t) IJP(c) JD
ACCESSION NR: AP5003449 S/0181/65/007/001/0278/0279

AUTHOR: Shakhovtsova, S. I.; Konozenko, I. D.; Muzalevskiy, Ye. A.

TITLE: On the generation of current pulses by CdS single crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 278-279

TOPIC TAGS: cadmium sulfide, photoelectric effect, photoelectricity, electric pulse

ABSTRACT: Samples of cadmium sulfide single crystals were shown to generate current pulses if exposed briefly to monochromatic or white light or to gamma radiation. The phenomenon was observed at temperatures of 330—270K (for some samples down to 77.3K), and the range of frequencies generated was from 0.2 to 0.05 cycles per second. The voltages measured on the samples corresponded to certain intervals of the illumination intensity. A sufficiently strong complementary illumination caused the phenomenon to disappear. The experiments were a followup to earlier experiments (I. D. Konozenko, Ye. A. Muzalevskiy, S. I. Shakhovtsova, FTT, 4, 1133, 1962; V. L. Vinetskiy, I. D. Konozenko, S. I. Shakhovtsova, FTT, 5, 2698, 1963), in which

Card 1/2

L 23940-65
ACCESSION NR: AP5003449

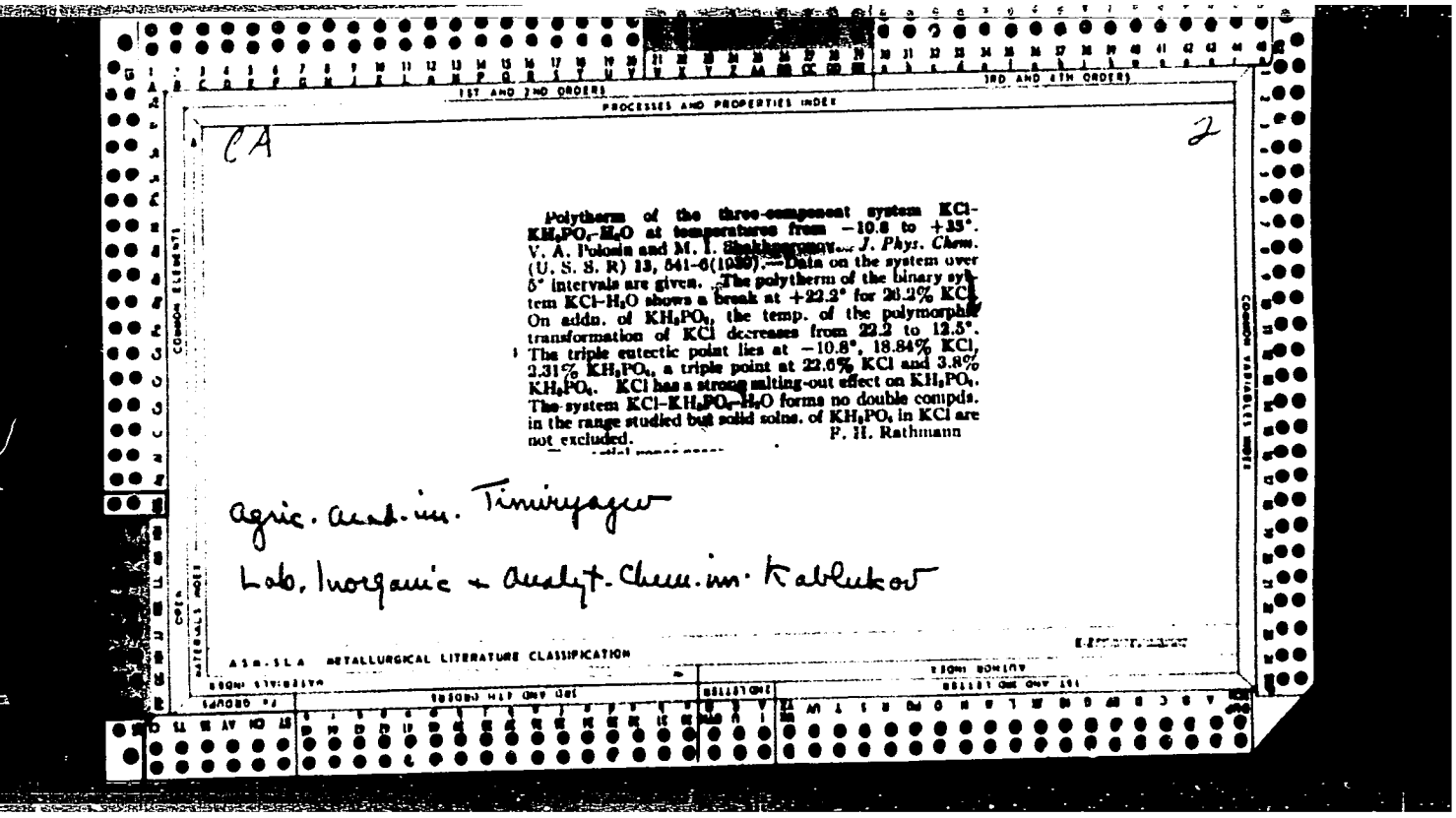
the generation of similar pulses was observed in cadmium selenide.
Orig. art. has: 2 figures. [ZL]

ASSOCIATION: Institut fiziki AN UkrSSR, Kiev (Institute of Physics, AN UkrSSR)

SUBMITTED: 23Jul64 ENCL: 00 SUB CODE: SS

NO REF SOV: 003 OTHER: 000 ATD PRESS: 3176

Card 2/2



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

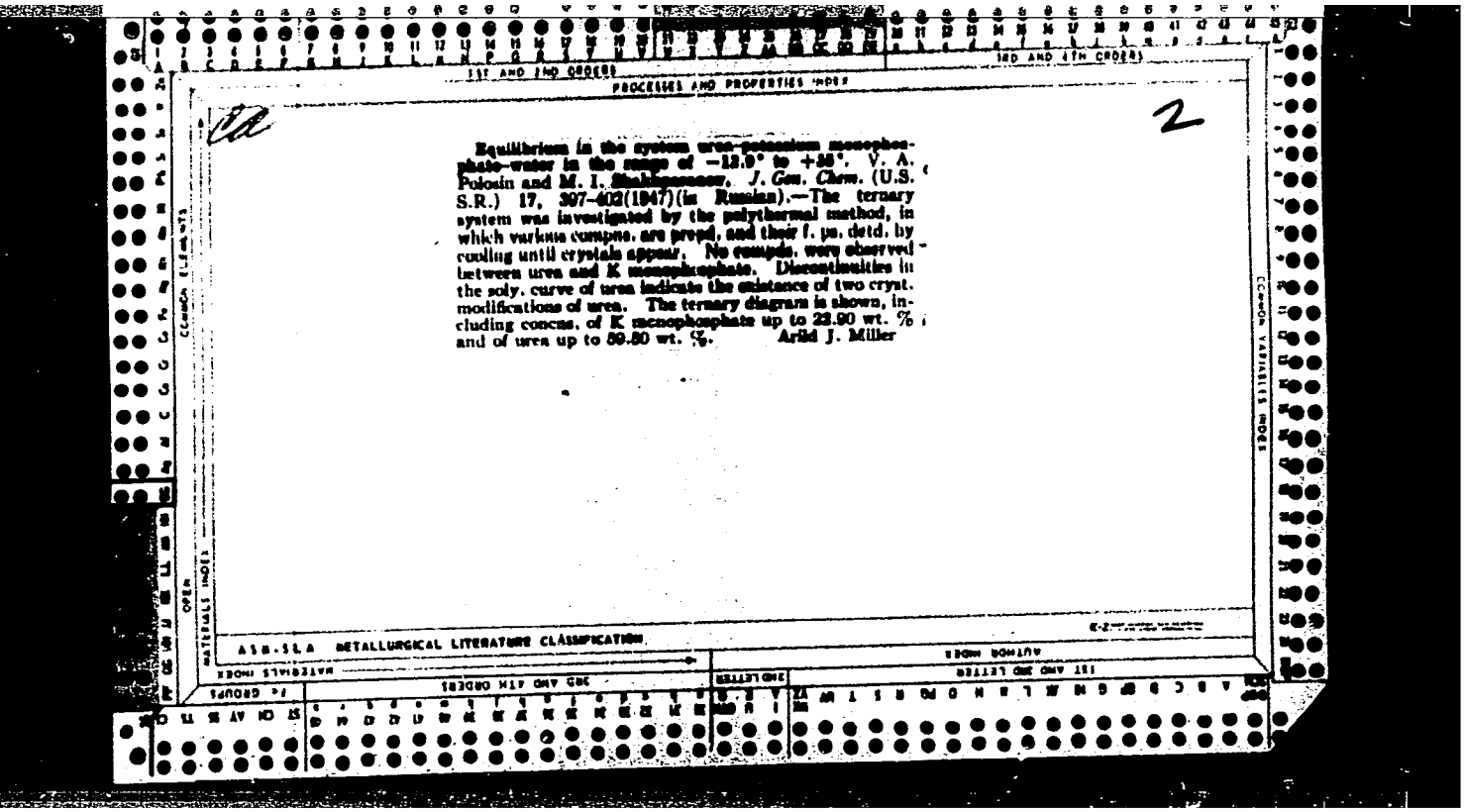
2

Polytherm of the three-component system KCl-KH_2PO_4-H_2O at temperatures from −10.8 to +35°. V. A. Polosin and M. I. Shakhparonov. *J. Phys. Chem.* (U. S. S. R) 13, 541-6(1939).—Data on the system over 5° intervals are given. The polytherm of the binary system KCl-H_2O shows a break at +22.2° for 26.2% KCl. On addn. of KH_2PO_4, the temp. of the polymorphic transformation of KCl decreases from 22.2 to 12.5°. The triple eutectic point lies at −10.8°, 18.84% KCl, 2.31% KH_2PO_4, a triple point at 22.6% KCl and 3.8% KH_2PO_4. KCl has a strong salting-out effect on KH_2PO_4. The system KCl-KH_2PO_4-H_2O forms no double compds. in the range studied but solid solns. of KH_2PO_4 in KCl are not excluded.
P. H. Rathmann

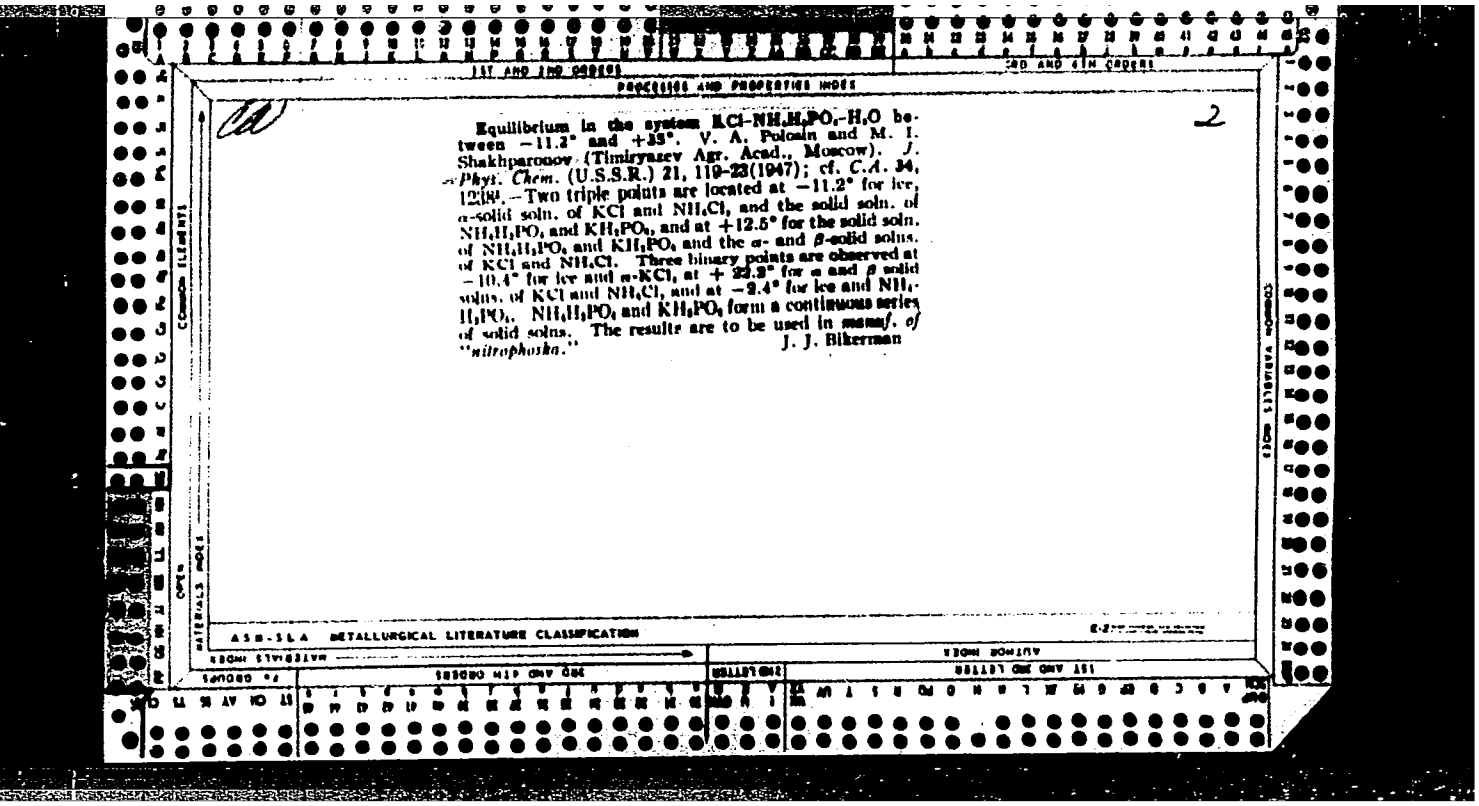
agric. acad. im. Timiryazev

Lab. Inorganic + Analyt. Chem. im. Kablukov

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



Equilibrium in the system urea–potassium monophosphate–water in the range of −12.9° to +35°. V. A. Polosin and M. I. Shakhparonov. *J. Gen. Chem.* (U.S.S.R.) 17, 397–402(1947)(in Russian).—The ternary system was investigated by the polythermal method, in which various compns. are prepd. and their f. pts. detd. by cooling until crystals appear. No compds. were observed between urea and K monophosphate. Discontinuities in the soly. curve of urea indicate the existence of two cryst. modifications of urea. The ternary diagram is shown, including concns. of K monophosphate up to 23.90 wt. % and of urea up to 59.80 wt. %. Arild J. Miller



Equilibrium in the system KCl-$NH_4H_2PO_4$-H_2O between −11.2° and +35°. V. A. Polosin and M. I. Shakhparonov (Timiryazev Agr. Acad., Moscow). *J. Phys. Chem.* (U.S.S.R.) 21, 119-23(1947); cf. *C.A.* 34, 1238⁸.—Two triple points are located at −11.2° for ice, α-solid soln. of KCl and NH_4Cl, and the solid soln. of $NH_4H_2PO_4$ and KH_2PO_4, and at +12.5° for the solid soln. of $NH_4H_2PO_4$ and KH_2PO_4 and the α- and β-solid solns. of KCl and NH_4Cl. Three binary points are observed at −10.4° for ice and α-KCl, at + 22.2° for α and β solid solns. of KCl and NH_4Cl, and at −2.4° for ice and $NH_4H_2PO_4$. $NH_4H_2PO_4$ and KH_2PO_4 form a continuous series of solid solns. The results are to be used in *manuf. of "nitrophoska."*

J. J. Bikerman

SHAKHPARONIV, M. I. PA 20/49T93

USSR/Physics
Viscosity

Oct 48

"The Problem of Measuring the Density and Viscosity of Vapors of Liquids," M. I. Shakhparoniv, Sci Res Inst of Phys, Moscow State U, 3 pp

"Zhur Tekh Fiz" Vol XVIII, No 10

Present-day methods are inaccurate as they do not consider volatile substances. Some other methods, particularly those involving chemical analysis, are so complex that they are almost worthless. Author presents a new simple method which overcomes difficulties of older accepted methods. Submitted 15 Mar 48.

[redacted]

20/49T93

SHAKHPARONOV, M. I.

USSR/Chemistry - Solubility, Equation of Feb 1948
Chemistry - Organic Compounds

"A Check of the General Equation of Solubility," V. K. Semenchenko, Moscow State U imeni M. V. Lomonosov, M. I. Shakhparonov, Lab of Phys Solutions, Moscow, 11¼ pp

"Zhur Fiz Khim" Vol XXII, No 2

Previously submitted equations for solubility were confirmed on the basis of experimental data obtained during studies on the organic bonds of the aromatic series, aliphatic series, and weak, average, and strong electrolytes and elements having dipole moments. In all cases there was noted a similarity. Only results obtained from $Ba(ClO_4)$ did not agree with the others.

Submitted 17 Jun 1947

PA 64T16

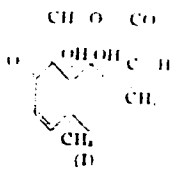
C4

10

Solubility of *d*-camphor in organic solvents. M. I. Shakhparonov. *Zhur. Obshchei Khim.* (J. Gen. Chem.) *20*, 300-3(1950). Sdy. data in several org. solvents indicate the existence of compds. of the compn. camphor·2MePh and camphor·2CCl$_4$. The following data give the wt.-% of camphor in the mixt. at the specified temp. at which crystn. begins to take place. In MePh, 40°, −24.8°, 42°, −23.3°, 45°, −22.2°, 50°, −24.0°, 55°, −25.9°, 65°, 29°, and 70°, 37°; in CCl$_4$, 25°, −13°, 28°, −10.3°, 30°, −9.0°, 32°, −8.4°, 35°, −8.0°, 40°, −8.7°, 42°, −9.6°, 45°, −10.7°, 50°, −13.1°, 55°, 16.5°, 57°, 31.8°, 58°, 37.6°, 60°, 48.3°; in AcOH, 50°, −0.9°, 55°, −4°, 60°, −7.1°, 65°, 7.3°, 67°, 10.1°, 68°, 21.2°, 70°, 30.1°; in MeOH, 41.2°, −26.7°, 45°, −19.3°, 50°, −10.1°, 54°, −3.3°, 58°, 4.4°, 62°, 11.5°, 66°, 19.3°, 70°, 27.7°; in glycol, 2°, −13°, 3°, 5.8°, 3.5°, 14.2°, 4°, 21.5°, 4.5°, 27.8°, 5°, 32.2°, 6°, 42.6°; in HCO$_2$H, 9.4°, 5.4°, 15°, 4.9°, 25°, 3.1°, 35°, 0.8°, 40°, −0.5°, 45°, −2.1°, 50°, −4.4°, 55°, −6.3°, 60°, −10.1°, 65°, −14.9°, 70°, −20.1°, 75°, −27.5°, 78°, −19.0°, 80°, 3.1°, 82°, 23.7°, 84°, 43.8°.

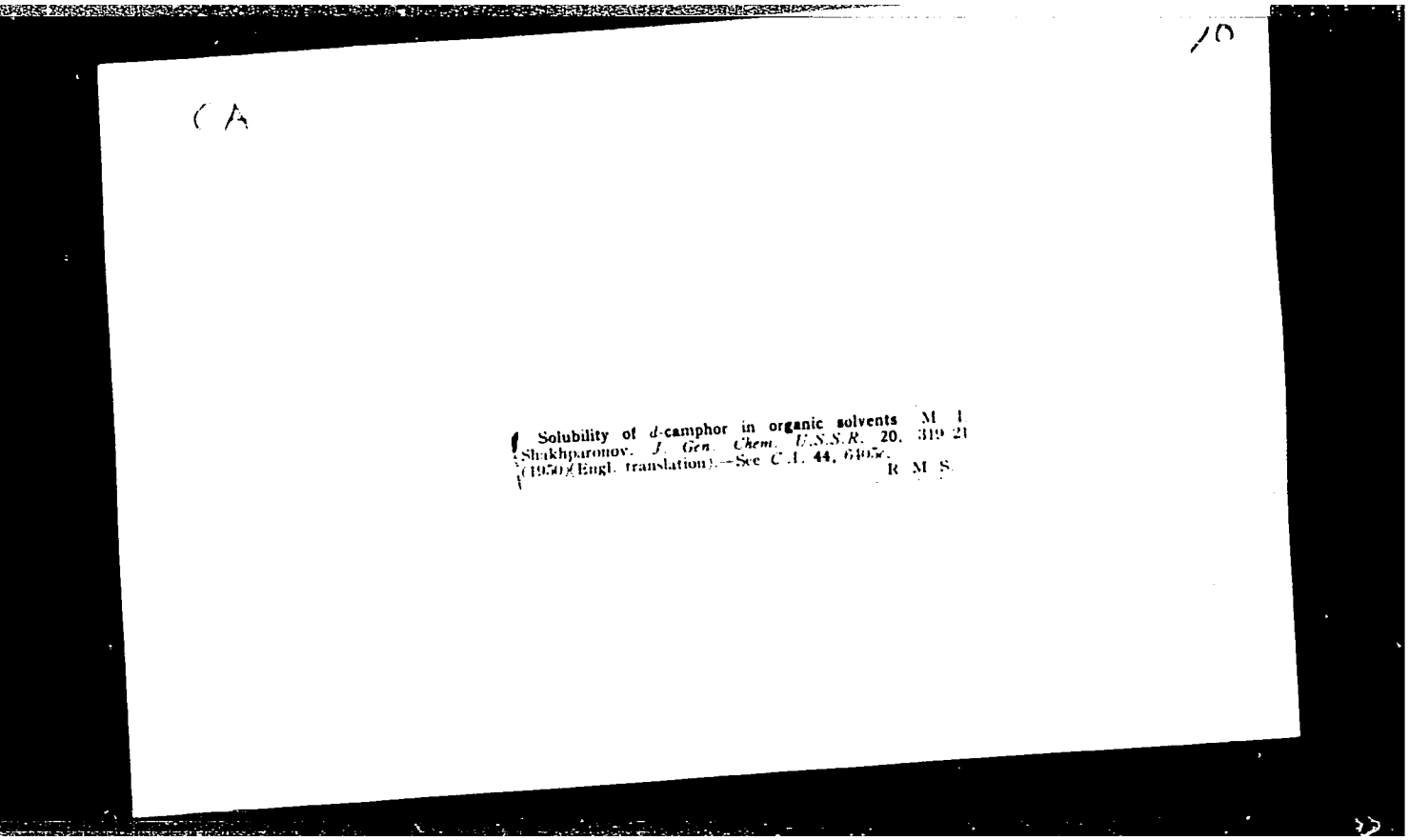
G. M. K.

α-Santonin. G. R. Clemo, W. Cocker, C. Lipman, and F. J. McQuillin (Kings Coll., Newcastle-on-Tyne, Engl.). *Chemistry & Industry* 1950, 201–2; cf. *C.A.* 43, 1242*d*.—I is suggested as a precursor of *l*-, *β*-, and *ψ*-santonin, and artemisin.



(I)

K. G. Stone



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Solubility of *d*-camphor in organic solvents. M. I. Shakhparonov. *J. Gen. Chem. U.S.S.R.* 20, 319-21 (1950) (Engl. translation).—See *C.A.* 44, 6405c. R. M. S.

SHAKHPARONOV, M. I.

Shakhparonov, M. I. (Criticism and Bibliography) The book by I. V. Kuznetsov "The Principle of Conformity in Modern Physics and its Philosophical Significance". P. 99

Chair of Physics of Solutions
Oct. 9, 1950

SO: Herald of the Moscow University (Vestnik), Series on Physical, Mathematical and Natural Sciences, No. 2, Vol. 6, No. 3, 1951

SHAKHPARONOV, M.I.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
General and Physical Chemistry

Thermodynamic properties of liquid two-component systems. M. I. Shakhparonov (M. V. Lomonosov State Univ., Moscow). Zhur. Fiz. Khim. 25, 231–8(1951).—A classification of liquid two-component systems is attempted on the basis of the dependence of activity coeffs. f_{a_i} on the concn. of the solvent (subscript 1) and solute (subscript 2). From $F = F_0 + \Delta U_\theta$ (1) and $\ln f_{a_i} = k_i N_i^{\gamma_i}$ (2), the following relations are derived: $\ln f_{a_1} = [-k_2\gamma N_2^{\gamma-1}/(\gamma - 1)] + kN_2^\gamma$ (3) and $\Delta U_\theta = -kRTN_2^\gamma (n_1 + n_2)/(\gamma - 1)$ (4). The notations are: F and F_0, free energy of, resp., the binary system and the standard state (infinitely dil. soln.); ΔU_θ, difference between the mean potential energies of the binary system and of its standard state; k_i = coeffs. depending on temp. and pressure (or vol.); γ_i = consts.; N_i, mole fraction; n_i = no. of moles. From (3), it is seen that $\gamma > 1$ ($\gamma \leq 1$ would mean nonsoly. or reaction between solvent and solute); thus the sign of ΔU_θ in (4) is detd. by the sign of k. For approx. ideal solns. ΔU_θ is small (which occurs, other things being equal, for large values of γ). With the help of (2), (3), and (4), solns. are classified into 5 categories: (I) $k = 0$: ideal solns. (II) $\gamma > 2$: then for $N_2 \to 0$, $\partial \ln f_{a_1}/\partial N_2 \to 0$; (a) $k > 0$: e.g. AgBr-PbBr$_2$ (in examples the solvent is given first), PbBr$_2$-ZnBr; (b) $k < 0$: e.g. H$_2$O-glycerol, NH$_3$-K. (III) $\gamma = 2$: then for $N_2 \to 0$, $\partial \ln f_{a_1}/\partial N_2 \to 0$ and $\partial \ln f_{a_2}/\partial N_2 \to 2k$; (a) $k > 0$: e.g. H$_2$O-EtOH, C$_7$H$_{16}$-Iodine, Cd-Zn; (b) $k < 0$: e.g. Hg-Tl, Cd-Sn, H$_2$O-HCOOH. (IV) $1 < \gamma < 2$: then for $N_2 \to 0$, $\partial \ln f_{a_1}/\partial N_2 \to 0$ and $\partial \ln f_{a_2}/\partial N_2 \to \pm\infty$; (a) $k > 0$; e.g. H$_2$O-KNO$_3$, H$_2$O-NH$_4$NO$_3$; (b) $k < 0$; e.g. PbCl$_2$-KCl. (V): max. and min. in the dependence of f_{a_i} on concn.; e.g. H$_2$O-HCl, H$_2$O-NaCl. For each category when $k > 0$, then $f_{a_1} > 1$, $f_{a_2} < 1$, and $\Delta U_\theta < 0$; when $k < 0$, $f_{a_1} < 1$, $f_{a_2} > 1$ and $\Delta U_\theta < 0$.

Michel Boudart

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2

Relation among solubility, activity coefficient, and properties of solvent and solute. M. I. Shakhparonov (Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 25, 1103–10 (1951).—On the assumption of (1) only nearest neighbor interactions, (2) spherical shape of the constituents with vol. ratio < 2, (3) quasicryst. configuration of the soln., and (4) no large departure from additivity of vols., a soly. equation is derived similar to those of Hildebrand and Sachenov (*Z. phys. Chem.* 4, 117(1889), 8, 657(1891)) which is valid up to x_1 mole fraction x_1 of solute equal to 0.1 or 0.15. This equation is: $x_1^{sat.} = x_1^{id} \exp.(-r\beta x_2^2/RT)$. In an ideal soln., the soly. would be x_1^{id}. The values of r and β are: $r = (w_{11} - w_{12})^2 + 2w_{11}w_{22}(1 - \delta) - 2w_{12}(q - 1)/(r_1^\circ + r_2^\circ)^6$; $\beta = (zN/2)[1 - x_1^2[\exp(-w/kT) - 1]][1 - (\pi\rho)/(r_1^\circ + r_2^\circ)]$; r_i° is the "effective or equil." radius of component i; q_i is an "effective charge"; m_i an "effective moment" for the interaction energy $w_{ij} = -q_iq_jr^{-n} + P\exp(-r/\rho)$; $m_i = q_i/(2r_i^\circ)^{n/2}$, where n is the exponent in the expression $\delta = (2r_1^\circ r_2^\circ)^6/(r_1^\circ + r_2^\circ)^6$; q is defined by $q_{ij} = q\,\text{ess}\,ij$; $w = w_{11} + w_{22} - 2w_{12}$; z is the coördination no. and N is the Avogadro no. No example is given. Michel Boudart

SHAKHPARONOV, M. I.

SHAKHPARONOV, M. I.

The theory of the thermodynamic properties of solutions. III. Semenchenko rule. M. I. Shakhparonov (M. V. Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 25, 1371–83(1951).—The earlier derived soly. equation (cf. *C.A.* 46, 2886*e*) is discussed and the relation between the soly. and the properties of mol., making up the soln. is explained. The Semenchenko rule, which expresses the relation between soly. and the dielec. const. of the solvent, is derived, and the relation between the soly. and the activity coeffs of the components of the solvent is established. It is shown that the Semenchenko rule, in conjunction with ideal soly. data, permits estn. of othe thermodynamic properties of soln., and deduction of the type of interaction between the mols. of solvent and solute. If the dielec. const. of pure liquid components of the soln. is known, the thermodynamic properties of the soln. can be estd. without recourse to soly. data. The area of neg. deviations from linearity increases with transition from nonpolar to polar substances owing to increase of effective attraction between the mols. of solute and solvent. Theoretical deductions are supported by quoted exptl. data. Ludwig Luft-Zurakowski

General and Physical Chemistry 2

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1951

The problem of "homeomorphous transitions". M. I. Shakhparonov (Moscow State Univ.). *Doklady Akad. Nauk S.S.S.R.* 78, 323–5(1951).—The discontinuous changes of the temp. coeff. of the soly. at points where there is no change in the phys. and chem. properties of the solid phase, as observed at 21.2° for KCl, at 22° for KBr, at 11° for KI, etc., are attributed to a change of the coördination no. Z of the mols. of the solvent A around the mols. of the solute B occurring within a temp. interval ΔT. By statistical thermodynamics, $\ln a_B = -(\lambda_B/RT) + (\lambda_B/RT_B) - (r\alpha\beta/RT)$, where a = mole fraction, at satn., λ = heat of fusion, T_B = melting temp. of B, r = temp.-independent function of geometric and force properties of A and B; β = pos. coeff. = fZ, where f is nearly concn.- and temp.-independent. This gives $\partial a_B/\partial T = a_B P - a_B Q(\partial Z/\partial T)$, with $P = (\lambda_B/RT^2) + (r\alpha\beta/RT^2)$ and $Q = rN\beta/RT^2$. The temp. coeff. of a_B has a jump if $\partial Z/\partial T \neq 0$. It is proposed to call the temp. point or interval in which $\partial a_B/\partial T$ changes abruptly without change of the solid phase, the "Bergman point" or "Bergman region" (B. and Vlasov, *C.A.* **37**, 1323[1]; B., *C.A.* **37**, 1919[8]; V. and B., *C.A.* **38**, 1167[4]). This point is, as expected, influenced by extraneous substances, in the absence of any solid soln.; e.g. for KCl it is lowered from 22.2 to 12.5° by addn. of KH_2PO_4, to 6° by addn. of $NH_4H_2PO_4$, and to −7.9° by addn. of $CO(NH_2)_2$. Changes of the quasi-cryst. structure of the liquid soln. may also account for observed anomalies of heats of soln.

N. Thon

– Physics Faculty,

SHAKHPARONOV, M. I.

SHAKHPARONOV, M. I. - "Certain Problems in the Physical Theory of Solutions." Sub 26 Dec 52, Moscow Order of Lenin State U imeni M. V. Lomonosov. (Dissertation for the Degree of Doctorates in Chemical Sciences).

SO: Vechernaya Moskva January-December 1952

SHAKHPARONOV, M. I.

Physics

"Dynamic and statistical laws of physics." YA. P. Terletskiy. Reviewed by M. I. Shakhparonov. Vest. Mosk. un., 7, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October, 1952~~1953~~ Unclassified.

Shakhparonov, M.I.

The aqueous reciprocal systems of potassium and ammonium nitrates, chlorides, and monosubstituted orthophosphates. Solubility polytherm in the diagonal cut of $KCl-KNO_3-NH_4H_2PO_4-H_2O$. A. G. Bergman and M. I. Shakhparonov. *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei Neorg. Khim., Akad. Nauk S.S.S.R.* 21, 331–45 (1953).—The investigated system was obtained by dissecting the 4-dimensional heptahedron representing the system $[K, NH_4||Cl, H_2PO_4, NO_3] + H_2O$ with a tetrahedron passing through $KCl-KNO_3-NH_4H_2PO_4-H_2O$. The dissecting tetrahedrons were triangulated, and triangles in turn were studied by linear sections. The temp. range of this study was −11.7 to 35°. The numerous data are presented in tables and on diagrams. The crystn. surface of the system studied consists of 4 fields: ice, solid solns. $(NH_4,K)Cl$, solid solns. $(NH_4,K)H_2PO_4$, and KNO_3. The orthophosphate field expanded with rising temp. at the expense of the KNO_3 field. At low temps. this field showed a tendency to break up. The $(NH_4,K)Cl$ field at 10 and 20° isotherms was divided in α and β regions corresponding to the α-β transformation of KCl solns. M. Hoseh

Geol + Hydrogeol

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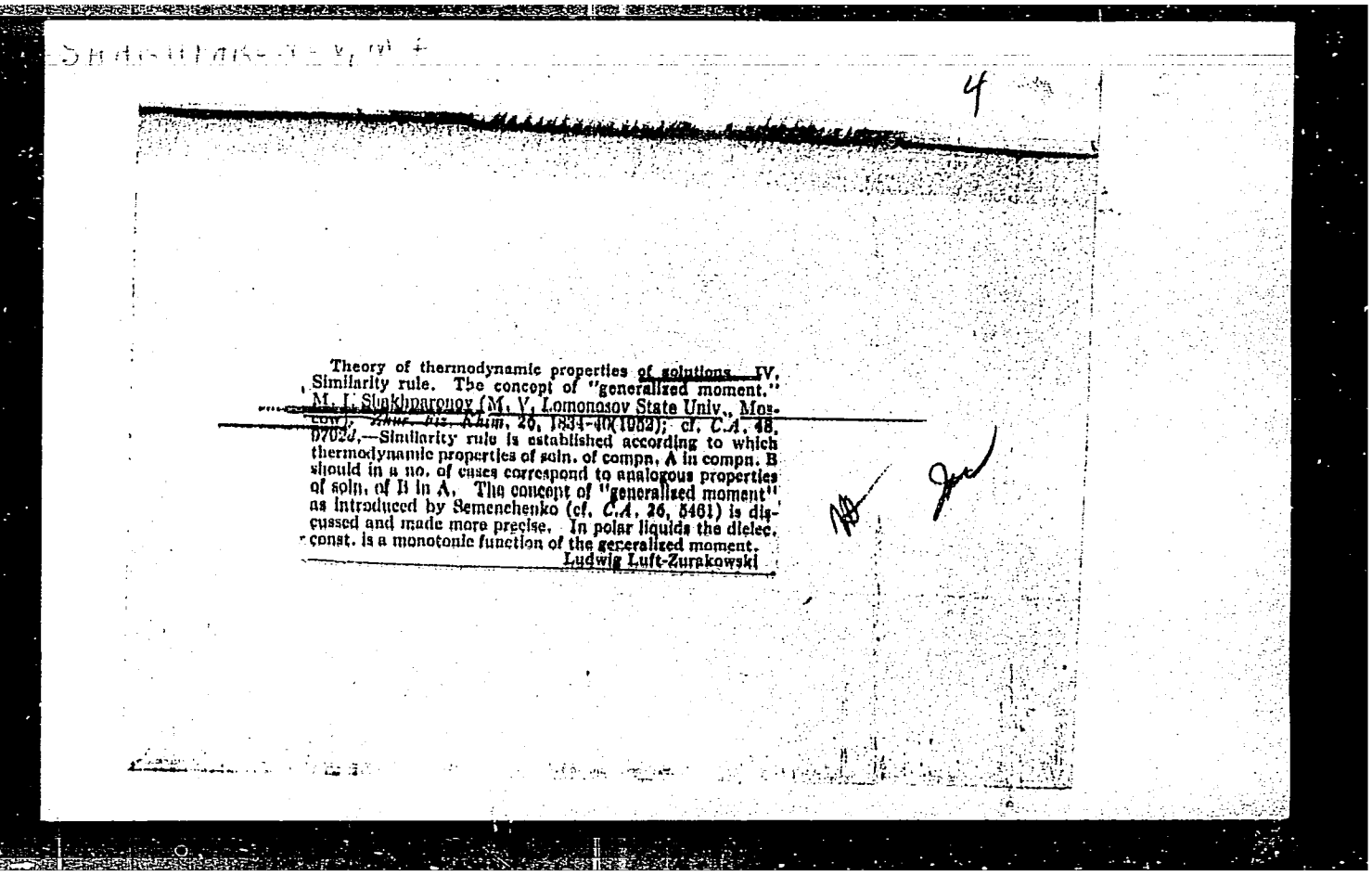
9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.



Theory of thermodynamic properties of solutions. IV. Similarity rule. The concept of "generalized moment." M. I. Shakhparonov (M. V. Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 26, 1834-41(1952); cf. *C.A.* 48, 9702d.—Similarity rule is established according to which thermodynamic properties of soln. of compn. A in compn. B should in a no. of cases correspond to analogous properties of soln. of B in A. The concept of "generalized moment" as introduced by Semenchenko (cf. *C.A.* 26, 5461) is discussed and made more precise. In polar liquids the dielec. const. is a monotonic function of the generalized moment.
Ludwig Luft-Zurakowski

SHAKHPARONOV, M.I.

Against idealistic hypotheses on the future of the universe, and the distortion of the meaning of the second law of thermodynamics. Vest.Mosk.un. 8 no.6:15-31 Je '53. (MLRA 6:10)

1. Laboratoriya fiziki rastvorov. (Thermodynamics) (Cosmogony)

SHAKHPARONOV, M.I.

Theory of solutions of non-electrolytes in electrolytes. Vest.Mosk.un.8 no. 9:93-96 S '53. (MLRA 6:11)

1. Kafedra fiziki rastvorov. (Electrolytes) (Solution (Chemistry))

Theory of the thermodynamic properties of solutions. V. The structure of solutions, the relations of solubility to temperature, and corresponding solutions. M. I. Shakhparonov (M. V. Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 27, 87–94(1953); cf. *C.A.* 46, 2886*e*; 48, 4302*a*; 49, 14105*b*.—From previous conclusions certain assumptions were made about the internal structure of solns. The relation between a fluctuation in concn. and the parameters that det. the properties of the particles making up the soln. was detd. The temp. dependence of soly. was studied and the theoretical conclusions verified qualitatively by exptl. results. The concept of corresponding solns. based on Semenchenko's rule is introduced. VI. Second-order phase transitions in solutions. *Ibid.* 111–17.—Discontinuities in the derivation of the soly. with respect to temp. for the KCl-H_2O system are explained by the transition in the quasi-cryst. structure of the soln.

J. Roytar Leach

1. [redacted], I. I.; [redacted], A. Ye.

2. USSR (600)

4. Resorcinol

7. Theory of thermodynamic properties of solutions. Part 7. Vapor pressure of solutions of resorcinol in various solvents. Zhur. fiz. khim. 27, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. SHAKHPARONOV, M. I.; MARTYNOVA, M. Ye.

2. USSR (600)

4. Phenols

7. Theory of thermodynamic properties of solutions. Part 8. Vapor pressure of solutions of o-nitrophenol in various solvents. Zhur. fiz. khim. 27 No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

Shakhparonov M. I.

The rules of similitude in the thermodynamic properties of solutions. B. V. Deryagin and M. I. Shakhparonov (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 93, 515-17(1953).—A math. proof is presented that the rule of similitude, or better "reciprocity," recently established (cf. *C.A.* 49, 14105) can be derived from very general considerations, which use no general assumptions about the nature of mol. forces, except for their additivity and independence of the orientation of mols.; these considerations are rigorously applicable to dispersional forces between sym. mols. The rule of reciprocity is further generalized. The conformity of these rules depends on conditions controlled macroscopically, based on the partial molar vols. of the components of the soln. W. M. S.

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(1)

SHAKHPARONOV, M. I.

USSR/Physics - Statistical mechanics of solutions FD-672

Card 1/1 : Pub. 129 - 7/25

Author : Shakhparonov, M. I.

Title : Theory of solutions

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, Vol 9, No. 3, 55-60, May 1954

Abstract : Reduces the problem of a solution to the statistical-mechanical problem of gases. Finds supplementary conditions for extending the theory of electrically neutral solutions to the theory of electrolytes.

Institution : Laboratory of the Physics of Solution

Submitted : June 23, 1953

FD-1503

USSR/Physics - Dielectric permeability

Card 1/1 : Pub. 129-6/18

Author : Brandt, A. A., and Shakhparonov, M. I.

Title : Connection between the dielectric permeability of solutions and deviations of properties of solutions from the ideal

Periodical : Vest. Mosk un. Ser. fizikomat. i yest. nauk, 9, No 6, 45-50, Sep 54

Abstract : The dependence of dielectric permeability on concentration of solutions CCl_4-CH_3OH, O-C_8H_{10}-CH_3OH, (CH_3) CO-$CHCl_3$, C_6H_6- $(C_2H_5)_2O$ is studied. Results proved that this dependence is closely related to the deviation of properties of solutions from ideal ones. An explanation is attempted by studying structural differences of ideal and nonideal solutions. One Soviet and two foreign references.

Institution :

Submitted : December 18, 1953

SHAKHPARONOV, M.I.

USSR

The theory of solutions. M. I. Shakhparonov. *Vestnik Moskov. Univ., 9, No. 8, Ser. Fiz.-Mat. i Estestven. Nauk* No. 3, 55-9 (1954).—Expressions for the statistical analog of the free energy and for the osmotic pressure are derived under the following assumptions: (1) The interaction potential between 2 mols. is infinite for $r < r_0$, where r_0 is the sum of the mol. radii; it is a function of r for $r > r_0$. (2) The interaction energy of a pair of mols. does not depend on the position of other mols. The calcns. can be made explicitly for the potential $\phi(r) = 4u[(r/r_0)^{12} - (r/r_0)^6]$, where u is a const. Further, an expression for the soly. is derived. An analysis of this expression appeared in an earlier paper (*C.A.* 48, 9792d). E. Gora

USSR/Physics - Solution structure FD-1141

Card 1/1 Pub. 129-5/23

Author : Shlenkina, N. G., and Shakhparonov, M. I.

Title : Investigation of the structure of solutions of benzol carbon tetrachloride with methyl alcohol by means of molecular scattering of light

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 7, 43-48, Oct 1954

Abstract : The authors note that the clarification of the structure of solutions and of pure fluids is one of the most important problems in the modern physics of the fluid state; at the present time the investigation of the structure of fluid alloys of metals is of the greatest practical significance. Because of the extreme difficulty of studying such fluids the authors study here the simpler but related case of nonelectrolytes, e.g. the system C_6H_6-CCl_4-Ch_3OH. They find that concentration fluctuations develop considerably in such a system, as deduced theoretically (M. I. Shakhparonov, Zhur. fiz. khim., 27, 87, 1953), but depend but slightly upon fluctuations in density and anisotropy. Because of the simplifying assumptions (e.g. independence of orientation of each molecule from the orientation of the neighboring molecules) they regard their results as preliminary (see their article in DAN SSSR, 96, 55, 1954).

Institution : Laboratory of Physics of Solutions

Submitted : January 20, 1954

SHAKHPARONOV, M I.

AID P - 1117

Subject : USSR/Chemistry

Card 1/1 Pub. 119 - 7/7

Author : Shakhparonov, M. I. (Moscow)

Title : V. K. Semenchenko, an outstanding Soviet scientist (on the occasion of his 60th birthday)

Periodical : Usp. khim., 23, no. 5, 635-640, 1954

Abstract : Review of his work on the theory of electrolytes, the theory of solutions, and on critical points. One photo, 40 references (38 Russian: 1924-1952).

Institution : None

Submitted : No date

SHAKHPARONOV, M. I.

USSR

523.12 : 536.7 62

6686. **The problem of the applicability of the second law of thermodynamics to large objects in the universe.** M. I. SHAKHPARONOV. *Zh. éksper. teor. Fiz.*, **27**, No. 5(11) 646–7 (1954) In Russian.

Discussion paper. The incorrectness of Ya. P. Terletskii's demonstration [see Abstr 7878 (1952)] of the inapplicability of the second law of thermodynamics (confirming Boltzmann's fluctuation hypothesis) is shown. The attempt to base such a demonstration on methods of statistical thermodynamics (thus, implicitly, on the second law) involves an internal contradiction. Also, Terletskii's theoretical derivation leads to a result clashing with the principles of statistical thermodynamics, one of the fundamental assumptions of which (since Smoluchovskii's work in this field) is that fluctuations cannot upset the macroscopic equilibrium. By using the virial theorem it is then shown that the equations used in the derivation are incompatible.

B. P. KRAUS

Shakhparonov M. I.

Theory of solutions. IX. Molecular scattering of light and the structure of solutions. M. I. Shakhparonov and N. G. Shlenkina (M. V. Lomonosov State [illegible], Moscow). *Zhur. Fiz. Khim.* 28, 1910–21(1954); cf. C.A. 49, 2822e. The relative intensity (S) and degree of depolarization (D) were measured of light (λ over 3650 A.) scattered by the binary systems benzene (I)–MeOH (II), I–Me$_2$CO (III), I–BuOH (IV), CCl_4 (V)–II, PhCl (VI)–II, *o*-xylene (VII)–II, and VII–III and the ternary system I–V–II at 20°. S, D, and n_D^{20} are tabulated with respect to mole fraction of the 1st component. The quantities dn/dT and dV/VdT, where V is vol. and T is temp., and the isothermal coeff. of compressibility (C) for the system I–II are also tabulated; when the mole fraction of I is 0.5, values of dn/dT, dV/VdT, and C are 5.35×10^{-4}/degree, 1.17×10^{-3}/degree, and 98.8, resp. Calcd. intensities of light scattered by fluctuations of d. (S_d), anisotropy (S_a), and concn. (S_c) are plotted with respect to compn. S_d is a linear function of concn. for ideal as well as markedly nonideal solns. S_c is max. in all the binary systems when the molar ratio is near unity. Values of S for the ternary system I–V–II lie between the corresponding values for systems I–II and V–II. The max. diam. of a fluctuation is much less than 4000 A. The relation between fluctuations of anisotropy, concn., and d. are discussed. J. W. Loweberg, Jr.

SHAKHPARONOV, M. I.

Raman-effect studies of the structure of solutions. M. I. Shakhparonov and N. G. Shlenkina. *Doklady Akad. Nauk S.S.S.R.* 96, 65-9(1954); cf. *C.A.* 49, 2826e.—Studies were planned to reveal the relation between concn. fluctuations and the compn. of the soln., and to confirm the derivation of conclusions from the soln. theory by measuring the relative intensity and the degree of the Rayleigh mol. depolarization of light in liquid solns. of org. dielectrics which form no layers. The systems studied which differ most in dielec. properties were MeOH–C_6H_6, MeOH–CCl_4, MeOH–*o*-xylene, and MeOH–C_6H_5Cl. The systems with similar dielec. properties of the components were *n*-C_4H_9OH–C_6H_6 and Me_2O–*o*-xylene. The results largely confirmed the hypothesis. For the system C_6H_6–MeOH, the results calcd. by the Einstein formula, with the partial pressure of the components given by Scatchard and Ticknor (*C.A.* 46, 10826a), are much lower than the exptl. results of S and S. W. M. S.

(1)

SHAKHPARONOV, Mikhail Ivanovich; VATOLLO, V.V., redaktor; MURASHOVA, N.Ya., tekhnicheskiy redaktor

[Introduction to the molecular theory of solutions] Vvedenie v molekuliarnuiu teoriiu rastvorov. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 507 p. (MLRA 9:11)
(Solution (Chemistry))

SHAKHPARONOV, M. I.

USSR/Physical Chemistry, Solutions, Theory of Acids and Bases. B-11

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22458.

Author : M. I. Shakhparonov.
Inst : Not given
Title : On the problem of structure of solutions.

Orig Pub : Zh. neorgan. khimii, 1956, I, No 6, 1194-1201.

Abstract : Data was studied concerning the fluctuating structures (FS) of series of non stratified solutions and the influence of FS on solubility, dielectric penetrability, and other solution properties. It is shown that FS represents an important feature of liquids structure. A systematic study of FS opens new possibilities to explain many peculiarities of structure-property curves.

Card 1/1 -160-

USSR/Atomic and Molecular Physics - Statistical Physics. Thermo-dynamics D-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 8967

erroneousness of the Clausius hypothesis there is no need for going outside the framework of thermodynamics and to resort to statistical physics and group theory.

Card : 2/2

SHAKHPARONOV, M.I.; TATEVSKIY, V.M.

Concerning the discussion on the theory of molecular structure.
Zhur.fiz.khim. 30 no.9:2122-2123 S '56. (MLRA 9:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Molecules)

SHAKHPARONOV, M. I.

CARD 1 / 2 PA - 1938

SUBJECT USSR / PHYSICS
AUTHOR ŠACHPARONOV, M.I.
TITLE On the Theory of the Polarization of Dielectrica.
PERIODICAL Dokl.Akad.Nauk, 111, fasc.4, 815-817 (1956)
Issued: 1 / 1957

Here a macroscopic sample of the dielectricum A consisting of $N = \sum_{i=1}^{k} N_i$ molecules of the components 1,2,...,k, which occupies the volume V and is fitted in the vacuum, is investigated. Outside the sample a certain distribution of immobile charges, which generate the field E_o, is assumed to exist. Under the effect of the field E_o the electric moment $\vec{M}_{E_o} = \alpha_m \vec{E}_o$ is induced in the sample. The macroscopic polarizability α_m of the sample can be represented in form of the sum $\alpha_m = \alpha_m^c + \alpha_m^s$, where α_m^s denotes that part of polarizability which is due to the influence of the surface of the dielectricum. α_m^c does not depend on the influence exercised by the surface. The author derives the equations with which it is possible to compute α_m^c and α_m^p on the basis of the experimental data concerning the dielectricity constant of the dielectricum A. α_m^c and α_m^s can be divided into an induction- and into an orientation component: $\alpha_m^c = (\alpha_m^c)_{or} + (\alpha_m^c)_{in}$, $\alpha_m^s = (\alpha_m^s)_{or} + (\alpha_m^s)_{in}$. The orientation components are connected with the existence of dipoles in the molecules of some components of the dielectricum. The induction components are due to electronic and atomic polarizability of the

Dokl.Akad.Nauk,111,fasc.4,815-817 (1956) CARD 2 / 2 PA - 1938

molecules. The following relations are obtained: $(\alpha_m^c)_{or}+(\alpha_m^s)_{or}=\overline{M_s^2}/3kT$, $(\alpha_m^c)_{in}+(\alpha_m^s)_{in}=(3/(\varepsilon_\infty+2))/((\varepsilon_\infty-1)/4\pi)V$. Here ε_∞ - denotes the dielectricity constant of the substance A at high frequencies; $\vec{M}_s$ - that part of the total electric moment $\vec{M}_{E_o}$ which is connected with a certain configuration of the molecules and does not depend on the exterior field E_o in the case of an assumed configuration. If it is assumed that there is no remote order of orientation in the sample and that the dimensions of the sample are large compared to the distances at which correlation between the orientations of the molecules plays an important part, it is possible to neglect the changes of fluctuations of M_s. On these conditions we find: $(\alpha_m^s)_{or}=-2(\varepsilon-1)^2\overrightarrow{M^2}/(\varepsilon+2)(2\varepsilon+1).3kT$, $\alpha_m^c=\sum_i N_i\bar{\alpha}_i=$ $=(3/(\varepsilon+2))((\varepsilon-1)/4\pi)V$, ($\bar{\alpha}_i$ denotes the average polarizability of the molecules of the type i.), $(\alpha_m^s)_{in}\sim 0$, $(\alpha_m^c)_{in}\sim\sum_i N_i\bar{\alpha}_i\sim(3/(\varepsilon_\infty+2))((\varepsilon_\infty-1)/4\pi)V$, $\alpha_m^c=$ $=(3/4\pi)((2\varepsilon+\varepsilon_\infty)/3\varepsilon)((\varepsilon-1)/(\varepsilon_\infty+2))V$ $\alpha_m^s=-(\varepsilon-1)^2(\varepsilon-\varepsilon_\infty)V/\varepsilon(\varepsilon_\infty+2)2\pi$, $(\alpha_m^c)_{or}=$ $=\overline{M^2}/3kT=V(\varepsilon-\varepsilon_\infty)(2+1)/4\pi\varepsilon(\varepsilon_\infty+2)$. In conclusion the molecular polarization of the dielectricum and its share in orientation is determined. The forces with short range and the energy of the interaction among polar molecules is neglected.

INSTITUTION: Moscow State University.

PHASE I BOOK EXPLOITATION 878

Shakhparonov, Mikhail Ivanovich

Ocherki filosofskikh problem khimii (Outline of Philosophical Problems in Chemistry) [Moscow] Izd-vo Moskovskogo univ-ta, 1957. 265 p. 3,500 copies printed.

Sponsoring Agency: Moscow. Universitet.

ED.: Kondrashkova, S.F.; Tech. Ed.: Yermakov, M.S.

PURPOSE: This book is a manual for university students majoring in the sciences.

COVERAGE: This book discusses some problems of the philosophy of natural sciences from the point of view of dialectical materialism. The field of chemistry and to a certain degree physics were chosen as the basis of these considerations. The book states that all branches of chemistry will continue to serve as a rich source of concepts promoting the development of Marxist-Leninist philosophy.

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On the other hand, dialectical materialism became an indispensable element in the development of scientific research, and serves as an indispensable tool in verifying doubtful theories. Several general problems of science can be successfully solved by the application of the principles of dialectical materialism, e.g., classification of sciences and the historical development of sciences. The author expresses his gratitude for the cooperation of the following persons: Ya.I. Gerasimov, Corresponding Member, AS USSR, Yu.A. Zhdanov, Candidate of Philosophy, and Yu.I. Solov'ev, Candidate of Chemical Sciences [review and comments]; G.V. Platonov, Professor, A.P. Gagarin, Professor, Kh. M. Fataliyev, Professor, V.M. Tatevskiy, Professor, and K.G. Khomyakov, Professor, [reviews of separate chapters of the manuscript]; and M.Ye. Martynova [assistance in preparation of the manuscript for printing].

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AVAILABLE: Library of Congress

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12-15-58

SHAKHPARONOV, M.I.

"Thermodynamics of solutions" by V.A. Kirillin and A.E. Sheindlin. Reviewed by M.I.Shakhparonov. Zhur.fiz.khim.31 no.7:1662-1663 Jl '57. (MIRA 10:12)
(Solution (Chemistry)) (Kirillin, V.A.) (Sheindlin, A.E.)

PHASE I BOOK EXPLOITATION 994

Shakhparonov, Mikhail Ivanovich

Dialekticheskiy materializm i nekotoryye problemy fiziki i khimii (Dialectical Materialism and Certain Problems in Physics and Chemistry) Moscow, Gospolitizdat, 1958. 86 p. 50,000 copies printed.

Ed.: Samsonenko, L.; Tech. Ed.: Mukhin, Yu.

PURPOSE: This book is intended for teachers of philosophy and natural science to be used in the "struggle of materialism against idealism" in the study of the natural sciences.

COVERAGE: This book was prepared from lectures delivered by the author in 1956 at the Moscow State University. The author discusses the dialectical meterialist approach to certain problems in physics and chemistry with emphasis on relativity (special and general), quantum theory, and molecular structure. He also criticizes the "idealist" approach. No personalities are mentioned. There are no references.

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Dialectical Materialism and Certain Problems (Cont.) 994

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

"The Microstructure of Sound"

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

GERASIMOV, Ya.I.; YEREMIN, Ye.N.; KISELEV, A.V.; LEBEDEV, V.P.; SKURATOV, S.M.; TOPCHIYEVA, K.V.; SHAKHPARONOV, M.I.

Methods of preparing scientific workers and teachers of institutions of higher education. Vest.Mosk.un.Ser.mat.,mekh.,astron., fiz.,khim. 13 no.1:235-238 '58. (MIRA 12:4)
(Science--Study and teaching)

AUTHORS: Gerasimov, Ya. I., Corresponding Member, 30-58-7-35/49
AS USSR, Shakhparonov, M. I., Doctor of Chemical Sciences

TITLE: Thermodynamics and the Structure of Solutions (Termodinamika i stroyeniye rastvorov) Transactions of the Conference in Moscow (Soveshchaniye v Moskve)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 7, pp. 122 - 124 (USSR)

ABSTRACT: This conference was called by the Department of Chemical Sciences of the AS USSR and the Chemistry Department of Moscow University (Otdeleniye khimicheskikh nauk Akademii nauk SSSR i khimicheskiy fakul'tet Moskovskogo universiteta); it convened from January 27th to January 30th. It was attended by about 600 physicists, chemists and thermal power engineers from the Soviet Union as well as from the people's democracies. Problems of statistical mechanics were discussed. In the development of modern molecular theory of solutions new methods are being worked out. The theory deals with new methods of mechanical statistical computation of the thermodynamic and kinetic properties of multicomponent systems. The existing methods permit a sufficiently exact computation of the free energy as well as of the properties of the diluted solutions of electrolytes and non-

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Thermodynamics and the Structure of Solutions. 07/30-58-7-35/49
Transactions of the Conference in Moscow

-electrolytes connected with it; among the mentioned methods those suggested by N.N.Bogolyubov and his collaborators are of greatest importance. In the reports and discussions on the statistical theory of solutions participated: A.Ye.Glauberman, A.Z. Golik, O.A.Yesin, G.Kel'bg, German Democratic Republic (GDR), V.A.Kozheurov, G.I.Mikulin, M.I.Usanovich, G.Fal'kenkhagen, German Democratic Republic, I.Z.Fisher, I.R.Yukhnovskiy and others. The main part of the reports and informations dealt with the problems of the molecular structure of the solutions. The consideration of some problems of the theory of fluctuation played an important part. G.M.Bartenev, M.V.Fuks, I.R.Krichevskiy, B.B. Kudryavtsev, V.F.Nozdrev, G.P.Roshchina, V.P.Skripov and others participated in the reports and the discussion concerning the problems of the theory of fluctuations and critical phenomena. Great attention was paid to investigations of solvatation, association and dissociation of molecules in the solution by optical and thermodynamic methods. N.A.Izmaylov, V.L.Levshin, Sh. Lend'yel, Hungary (Vengriya), A.Ye.Lutskiy, S.Mints, Poland (Pol'sha), V.P.Nikol'skiy, G.L.Starobinets, A.M.Sukhotin, Yu.I. Solov'yev, M.I.Usanovich, B.M.Chulanovskiy, K.B.Yatsimirskiy and

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others delivered reports and informations on those problems. Some problems concerning phenomenological thermodynamics of liquid solutions and alloys were also discussed. The limits of application of the first law by Konovalov and the second law by Vrevskiy were determined and the thermodynamic analysis of the correlation between the solubility of gases in liquids and the pressure were carried out. The influence of a third component on the solubility of salts in water was investigated. The thermodynamic properties of a series of metallic alloys were investigated and the results of research work of oversaturated solutions were mentioned. The hearing of the reports and discussions were joined by: K.P.Zemborak,(Poland), O.A.Yesin, A.G. Morachevskiy, V.V.Sventoslavskiy, (Poland), A.V.Storonkin, M.M. Shul'ts, S.I.Shchukarev, and others. On behalf of the Committee of Chemical Thermodynamics of the AS USSR (Komissiya po khimicheskoy termodinamike Akademii nauk SSSR) Ya.A.Gerasimov reported on a series of measures indispensable for the development of scientific work in this field. The conference recorded the achievements and errors in the development of research work in this field and suggested measures for a successful development.

AUTHORS: Gerasimov, Ya. I., Yeremin, Ye. N., Kiselev, A. F., Lebedev, V. P., Shuregov, S. M., Topchiyeva, E. V., Shakhparonov, M. I.

TITLE: Training and Education of Teachers of Higher Schools, and of Scientists and Researchers (O putyakh podgotovki prepodavateley vysshey shkoly i nauchnykh rabotnikov)

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958, Nr 6, pp 235 - 238 (USSR)

ABSTRACT: According to the opinion of the authors the actual training and education of qualified specialists in the field of natural sciences suffers from certain drawbacks: They first go through a three-years' stage as candidates. This kind of activity is in no way a guarantee for thoroughly penetrating into all necessary fields of theoretical and experimental work in the domain of physics and physical chemistry, and of the other sciences related therewith. Besides the time is too short for defending and proving again the truth of the scientific investigations carried out. It is obvious that the brevity of time prevents the candidates from exceeding in their investigations from a perfunctory to a more scientific level. There is no possibility of selecting certain more interesting themes,

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and the like. Finally the time is too short for giving the candidate a sufficient pedagogical training. Consequently, it is suggested to replace the term of three years for candidates by a five years' term for assistants-on-trial during which time the practical work and the seminaries will be conducted according to pedagogical principles and the scientific investigations will be carried out in accordance with the plans of the Chair. The examination on the special scientific training can only be passed, if the assistant-on-trial adduces the proof of having made a number of particular scientific reports, and of having passed the examination on the fundamentals of marxism and leninism, as well as that of foreign languages. After having completed his trial term and having successfully passed the final examination, he may become candidate lecturer at his own or at any other school. By a well-controlled guidance of the assistant-on-trial, an excellent selection is warranted of first-class men of science. Besides, this system will succeed fully further and advance the scientific work of the assistants-on-trial. The authors believe that the chief result of this

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reorganization will be a good training both in the scientific sector and, in the pedagogical field, and will therefore be the best way of forming first-class higher school instructors.

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SOV/76-32-6-56/46

AUTHOR: Shakhparonov, M. I.

TITLE: On the Influence of the Fluctuation on the Dielectric Constants of Homogeneous Systems (O vliyanii fluktuatsiy na dielektricheskuyu pronitsayemost' odnorodnykh system)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 6, pp. 1414-1415 (USSR)

ABSTRACT: Proceeding from the statement that the fluctuation dependent on heat motion can be represented as superposition of harmonic oscillations with corresponding parameters, the author carried out a mathematical deduction. If in the homogeneous medium in three directions perpendicular to each other, harmonic heat motions are propagated a periodic change of the local dielectric constant will take place, with the local deviations from the mean value changing the macroscopic value. From the final equations obtained may be seen that the dielectric constants of liquids must come to lie near the critical point, or that a still stronger decrease is to be expected near the area of the critical lamination in solutions containing polar and unpolar components. This

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On the Influence of the Fluctuation on the Dielectric Constants of Homogeneous Systems

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way the concentration fluctuation will effect a negative deviation of the macroscopic dielectric constant from the additive one, which is in agreement with the observations concerning the relay light dispersion in such solutions. The assumption that in the critical area a maximum of the dielectric constant exists, is therefore not correct. To a certain extent analogous conclusions may be drawn also for the magnetic permeability and conductivity of homogeneous systems. There are 6 references, 2 of which are Soviet.

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

SUBMITTED: April 22, 1957

1. Liquids--Dielectric properties 2. Heat transfer
3. Mathematics

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SOV/76-32-6-46/46

AUTHOR: Shakhparonov, M. I.

TITLE: Chronicle (Khronika)
[Transactions of the] Conference on the Thermodynamics and the Structure of Solutions. The Decision Made by the Conference on Thermodynamics and the Structure of Solutions (Soveshchaniye po termodinamike i stroyeniyu rastvorov. Resheniye soveshchaniya po termodinamike i stroyeniyu rastvorov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 6, pp. 1437-1445 (USSR)

ABSTRACT: This conference had been organized by the Department of Chemical Sciences of the AS USSR as well as by Dept. of Chemistry of MGU, and took place from January 27-30, 1958 at the Chemical Faculty of MGU. 70 lectures were held. More than 600 scientists from Moscow, Leningrad, Kiyev, Minsk, Khar'kov, Sverdlovsk and other towns of the USSR attended this conference; also Professor Sh. Lend'yel and Doctor E. Beres from the Hungarian People's Republic, Professor G. Fal'kenkhagen and Doctor G. Kel'bg from the German Democratic Republic, and Professor S.Mints and Doctor K. Zemborak from the Polish People's Republic attended it. The plenary session was opened by the Chairman of the

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Chronicle. [T]ransactions of the] Conference on the Thermodynamics and the Structure of Solutions. The Decision Made by the Conference on the Thermodynamics and the Structure of Solutions SOV/76-32-6-46/46

organizational committee Ya.I. Gerasimov; then the following scientists delivered lectures (title and contents of the lectures are given): N.A. Izmaylov (Khar'kov), M.I. Shakhparonov (Moscow), A.Ye. Glauberman (L'vov), O.Ya. Samoylov (Moscow), Ya.I. Gerasimov (Moscow), A.F. Kapustinskiy (Moscow), K.P. Mishchenko (Leningrad), A.Z. Golik (Kiyev), K.B. Yatsimirskiy (Ivanovo), V.M. Chulanovskiy (Leningrad), V.L. Levshin, Ye.G. Baranova, L.D. Derkacheva (Moscow), B.S. Neporent (Leningrad), M.F. Vuks (Leningrad), B.P. Nikol'skiy (Leningrad), M.A. Styrikovich (Moscow). The following lectures of the contributions made in the general section of the conference are mentioned: I.P. Krichevskiy and N.Ye. Khazanova (Moscow), V.F. Nozdrev (Moscow), G.M. Bartenev and A.A. Remizova (Moscow), A.V. Storonkin and A.G. Morachevskiy (Leningrad), A.V. Storonkin and M.M. Shul'ts (Leningrad), I.T. Sryvalin and O.A. Yesin (Sverdlovsk), B.B. Kudryavtsev (Moscow), D.D. Tsiklis (Moscow), and G.D. Yefremova (Moscow). In the section for the thermodynamics of electrolytic solutions the following lectures are mentioned: G. Fal'kenkhagen and G. Kel'bg (German Democratic

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Chronicle. [Transactions of the] Conference on the Thermodynamics and the Structure of Solutions. The Decision Made by the Conference on the Thermodynamics and the Structure of Solutions

Republic), I.R. Yukhnovskiy (L'vov), S.V. Tyablikov and V.V. Tolmachev (Moscow), G.I. Mikulin (Verkhneye), V.A. Kozheurov (Chelyabinsk), A.M. Sukhotin (Leningrad), N.A. Izmaylov, V.A. Kremer, L.M. Kutsina and Ye.V. Titov (Khar'kov), V.P. Vasil'yev (Ivanovo), Sh. Lend'yel (Hungary), K.P. Mishchenko and A.M. Ponomarev (Leningrad), Ye. N. Vasenko, A.P. Chernyavskiy and N.V. Cherna (Kiyev), V.V. Aleksandrov and Ye.F. Ivanova (Khar'kov), S.A. Shchukarev, L.S. Lilich, V.N. Timofeyev (Leningrad), Ye.I. Akhumov and Ye.V. Pylkova (Leningrad), G.I. Mikulin (Verkhneye), S.I. Drakin and V.A. Mikhaylov (Moscow). In the section for the thermodynamics of non-electrolytic solutions the following lectures are mentioned: I.Z. Fisher and V.S. Kuzmich (Minsk), N.A. Batolin and O.A. Yesin (Sverdlovsk), G.L. Starobinets and V.F. Tikavog (Minsk), G.L. Starobinets and N.G. Ariko (Minsk), M.F. Lantratov and A.F. Alabyshev (Leningrad), V.V. Sventoslavski and K.P. Zemborak (Poland), A.Ye. Lutskiy and Ye.M. Obukhova (Khar'kov), M.I. Usanovich (Alma-Ata), A.S. Barkan (Minsk), L.V. Lanshina (Moscow). In the section for the structure of solutions the following lectures are mentioned:

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Chronicle. [Transactions of the] Conference on the Thermodynamics and the Structure of Solutions. The Decision Made by the Conference on the Thermodynamics and the Structure of Solutions SOV/76-32-6-46/46

S. Mints (Poland), L.V. Levshin (Moscow), E.Ye. Vaynshteyn and I.I. Antipova-Karatayeva (Moscow), V.V. Zelinskiy, P.P. Kolobkov and I.I. Reznikova (Leningrad), M.U. Beliy (Kiyev), G.M. Bartenev (Moscow), A.Z. Golik (Kiyev), G.P. Roshchina (Kiyev), N.G. Shlenkina (Tula), M.I. Shakhparonov (Moscow), A.M. Sarzhevskiy and A.N. Sevchenko (Minsk). The conference passed a resolution which is put forward in this paper. This resolution is divided into 7 parts with subdivisions being made for different problems. The success of Soviet science in this field to this day is mentioned and then it is pointed out that development is still insufficient, and that the necessary steps have to be taken for a planned and intensive extension of this program. Symposia on subjects are mentioned with the corresponding scientists being mentioned. Other decisions are made, e.g. on publications, a better collaboration among the scientists etc.

1. Chemistry 2. Thermodynamics 3. Scientific reports

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USCOMM-DC-60260

SHAKHPARONOV, M. I.

PHASE I BOOK EXPLOITATION SOV/4342

Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov.

Primeneniye ul'traakustiki k issledovaniyu veshchestva; trudy konferentsiy, vyp. 9 (Application of Ultrasonics in the Study of Substances, No. 9) Moscow, Izd. MOPI, 1959. 245 p. Errata slip inserted. 1,000 copies printed.

Eds.: V. F. Nozdrev, Professor, and B. B. Kudryavtsev, Professor.

PURPOSE: This collection of articles is intended for scientists specializing in ultrasonics, and for those interested in the application of ultrasonics to the study of the properties of materials, and to the quality control of machined parts and structural elements.

COVERAGE: The collection constitutes the transactions of the All-Russian Conference of Professors and Teachers of Pedagogical Institutes. The articles report on recent theoretical and experimental investigations in the field of ultrasonics and discuss the application of ultrasonics to the study of

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materials and to the quality control of machined parts and structural elements (defectoscopy). No personalities are mentioned. References accompany most of the articles.

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SHAKHPARONOV, M. I.

24(3) PHASE I BOOK EXPLOITATION SOV/ 809

Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk

Termodinamika i stroyeniye rastvorov; trudy soveshchaniya... (Thermodynamics and Structure of Solutions; Transactions of the Conference Held January 27-30, 1958) Moscow, Izd-vo AN SSSR, 1959. 295 p. 3,000 copies printed.

Ed.: M. I. Shakhparonov, Doctor of Chemical Sciences; Ed. of Publishing House: M. G. Yegorova; Tech. Ed.: T. V. Polyakova.

PURPOSE: This book is intended for physicists, chemists, and chemical engineers.

COVERAGE: This collection of papers was originally presented at the Conference on Thermodynamics and Structure of Solutions sponsored by the Section of Chemical Sciences of the Academy of Sciences, USSR, and the Department of Chemistry of Moscow State University, held in Moscow on January 27-30, 1958. Officers of the conference are listed in the Foreword. A list of other reports also read at the conference, but not included in this book, are given. Among the problems treated in this work are: electrolytic solutions, ultrasonic measurement, dielectric and thermodynamic properties of various mixtures, spectroscopic analysis, etc. References accompany individual articles.

5(0)
AUTHOR: Shakhparonov, M. I., Doctor of Chemical Sciences SOV/30-59-4-48/51

TITLE: New Investigation of the Theory of Solutions (Novoye issledovaniye po teorii rastvorov)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 4, pp 146 - 148 (USSR)

ABSTRACT: This is a review by the abstracter concerning the book written by O. Ya. Samoylov. In 1957 this book was published under the title "Struktura vodnykh rastvorov elektrolitov i gidratatsii ionov" by the Publishing House of the Academy of Sciences USSR. (182 pp, 4,500 copies, 6 roubles, 30 kopeks).

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S/058/61/000/010/060/100
A001/A101

AUTHOR: Shakhparonov, M.I.

TITLE: Fluctuations in solutions

PERIODICAL: Referativnyy zhurnal. Fizika, no.10, 1961, 219, abstract 10D17 (V sb. "Kritich. yavleniya i fluktuatsii v rastvorakh", Moscow, AN SSSR, 1960, 151 - 160)

TEXT: The author emphasizes importance of fine-structural fluctuations of density and concentration for understanding the properties of liquids and solutions. Fine-structural fluctuations are defined as such proceeding in small volumes for which the thermo-dynamical fluctuation theory is inapplicable. A typical example is fluctuations of coordination numbers in a liquid. The results from the theory of effect of fine-structural fluctuations of the binary solution concentration on its dielectric properties, developed by the author, are presented and discussed. The theory explains well the experimentally observable concentration dependence of dielectric constant of acetone and nitrobenzene solutions in nonpolar solvents.

I. Fisher

[Abstracter's note: Complete translation]

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PHASE I BOOK EXPLOITATION SOV/5469

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

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

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

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

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

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Critical Phenomena and Fluctuations SOV/5469

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

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