KRUGLIKOV, V.M.; SHAL'NEVA, A.M.; GUZACHEVA, V.Ya.; ZAYTSEV, A.A.; POKROVSKAYA, Ye.V.

Sources of leptospirosis in nature; data on Stavropol' Territory. Zhur.mikrobiol.epid. i immun. 27 no.11:60-64 N '56. (MLRA 10:1)

1. Iz Stavropol'skogo instituta vaktsin i syvorotok i Krayevoy protivotulyaremiynoy stantsii.

(LEPTOSPIROSIS, epidemiology.
animal as source of infect. (Rus))

KRUGLIKOV, V.M.; SHAL'NEVA, A.M.; GUZACHEVA, V.Ya.; ZAYTSEV, A.A.; LYASHENKO, V.D.; POPOVA, Ye.V.

Studies of natural foci of leptospirosis in certain region of the Stavropol Territory. Zhur. mikrobiol. epid. i imun. 29 no.8:51-54 Ag '58. (MIRA 11:10)

1. Iz Stavropol'skogo instituta vaktsin i syvorotok i Krayevoy sanitarno-epidemiologicheskoy stantsii.

(LEPTOSPIROSIS, epidemiology, natural foci in Russia (Rus))

[redacted], A. M., KEUBLIKOV, A. M., KUZAKHEVA, V. M., PITNOVA, A. I., [redacted], V. A., POMKOVSKAYA, E. V., POPOVA, E. V., LYASHENKO, V. D.

"The sources of leptospirosis infection in nature (according to the Stavropol' region materials)." p. 154

Desyatoye Soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Inst. of vaccines and Sera and regional Sanitary-Epidemiological Station/Stavropol'

SHAL'NEVA, A.M.; GUSEV, V.M. [deceased]; TITROVA, A.I.; SOLOSHENKO, I.Z.

Role of birds in the epizootiology of leptospirosis. Zool. zhur. 42 no.5:775-777 '63. (MIRA 16:7)

1. Institute of Vaccines and Sera of Stavropol, Research Anti-Plague Institute of the Caucasus and Transcaucasia and Institute of Epidemiology and Microbiology of the Academy of Medical Sciences of the U.S.S.R., Moscow.
(Caucasus--Leptospirosis) (Birds as carriers of disease)

SHAL'NEVA, A.P.; KRUGLIKOV, V.M.; [illegible], A.I.; [illegible], R.A.

Exploration of a method for obtaining dry leptospira cultures. Zhur. mikrobiol., epid. i immun. 42 no.8:144-145 Ag '65. (MIRA 18:9)

1. Stavropol'skiy institut vaktsin i syvorotok.

Shal'neva, G.A.

USSR/Biology - Biochemistry

Card 1/1 Pub. 22 - 48/63

Authors : Dzhemukhadze, K. M., and Shal'neva, G. A.

Title : Conversion of catechins during the growth of the tea leaf

Periodical : Dok. AN SSSR 99/6, 1069-1071, Dec 21, 1954

Abstract : Experiments were conducted in 1954 at the plantations of the Chakvinsk Branch of the All Union Scientific Research Tea and Tropical Cultures Institute to determine the quantitative and qualitative conversions of catechin which take place during the growth and development of the tea leaf. The results obtained are described. Fourteen references : 13-USSR and 1-English (1941-1952). Tables; illustration

Institution : Academy of Sciences USSR, The A.N.Bakh Institute of Biochemistry

Presented by : Academician A. I. Oparin, October 20, 1954

Shul'neva, G.A.

Tannin substances of raw tea from Krasnodar region. K. M. Dzhemukhadze and G. A. Shul'neva (A. N. Bakh Biochem. Inst., Moscow). *Izvest. Akad. Nauk S.S.S.R., Ser. Biol.* 1955, No. 6, 59–66.—Considerable variations exist in the tannin content of ten plants grown in various areas in Krasnodar region. Generally progression to the north causes reduced total tannin content. Among the catechols of the tannins the predominant substances are gallic acid derivs. of catechols, specifically *l*-epigallocatechol gallate (I). Catechols reach max. concn. in the mid-summer and decline in the autumn; I shows especially great seasonal variations. G. M. Kosolapoff

(1)

Shalneva, Ya. A.

The quantitative paper chromatographic determination of catechin in tea leaves. K. M. Dzhemukhadze and G. A. Shal'neva (A. N. Bakh Inst. Biochem., Acad. Sci. U.S.S.R., Moscow). *Biokhimiya* 20, 336–8(1955); cf. *C.A.* 49, 7056f. B. S. Levine

(1)

SHAL'NEVA, G. A.

Geographic variability of catechins in leaves of tea. K. M. Dzhemukhadze and G. A. Shal'neva (A. N. Bakh Biochem. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 104, 880–1(1955).—Analysis of catechol components of tea leaves from specimens of plants of northern and southern areas of Armenian SSR showed that a northward progression results in relative increase of *l*-epigallocatechin, *l*-epicatechin, *dl*-catechin, no change in *dl*-gallocatechin, and *l*-epicatechin gallate, and decrease in *l*-epigallocatechin gallate, which generally makes up some 60% of total catechin.
G. M. Kosolapoff

SHAL'NEVA, G. A

Seasonal variations of catechins of the tea plant. K. M. Dzhemukhadze and G. A. Shal'neva (A. N. Bakh Biochem. Inst., Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 105, 1034–6(1955); cf. *C.A.* 49, 7650f.—MD Chromatographic examn. of the catechins in leaves of a tea plant showed that the most intensive synthesis of these substances takes place in midsummer; *l*-epigallocatechin gallate shows the most energetic accumulation and synthesis. Gallocatechins predominate throughout the season. The content of *l*-epigallocatechin, *dl*-gallocatechin, *l*-epicatechin and *dl*-catechin, and *l*-epicatechin gallate is shown graphically over the summer and fall months. G. M. K.

DZHEMUKHADZE, K.M.; SHAL'NEVA, G.A.; MILESHKO, L.F.

Transformation of catechins during the fermentation of tea [with summary in English]. Biokhimiia 22 no.5:888-893.S-O '57.
(MIRA 11:1)

1. Institut biokhimii im. A.N.Bakha Akademii nauk SSSR.
(TEA) (FERMENTATION) (CATECHIN)

Catechines From Tea Seedlings

stances were found which react qualitatively to fluoroglucine. However, attempts to isolate or to identify these substances were not successful. At the same time the authors of the paper under review were able, after a short moistening of the seeds, to prove quantitatively the existence of catechines. Judging from the spots in the chromatograph, these catechines probably are ℓ-epicatechine, ℓ-epigallocatechine and ℓ-epicatechinegallate. Altogether these substances amounted to 0,2 mg per 1 g of the dry substance. Thus it is possible to prove, already in the germinating stage in the embryons of tea seeds, the existence not only of simple catechines but also of gallate. The development of the seed is accompanied by an increased catechine synthesis. In this context, there exists already in the early stages a difference in concentration between the different organs. All this points to an important biological part of the catechines in the interior of the plants. There are 1 figure, 1 table, and 12 references, 11 of which are Slavic.

ASSOCIATION: Institute of Biochemistry of Plants imeni A. N. Bakh, AN USSR (Institut biokhimii rasteniy im. A. N. Bakha Akademii nauk SSSR)

DEMIN, V.N.; LITVINOVA, Ye.V.; SHAL'NEVA, T.S.

Recurrence and malignification of epitheliomas of the parotid gland. Vop.onk.1 no.1:80-85 '55. (MLRA 8:10)

1. Iz kafedry onkologii (zaveduyushchiy prof. A.I. Rakov) GIDUV im. S.M. Kirova i Instituta onkologii AMN SSSR (direktor chl.-korr. AMN SSSR prof. A.I.Serebrov)
(PAROTID GLAND, neoplasms, recur. & malignization)

LITVINOVA, Ye.V.; BLINOVA, G.A.; DEMIN, V.N.; SHAL'NEVA, T.S.

Evaluation of cytodiagnosis of cancer of distal segments of the large intestine. Vop.onk. 1 no.5:57-63 '55. (MLRA 10:1)

1. Iz kafedry onkologii (zav. - prof. A.I.Rakov) Gosudarstvennyy institut dlya usovershenstvovaniya vrachey im. S.M.Kirova na base Instituta onkologii AMN SSSR (dir. - chlen-korr. AMN SSSR prof. A.I.Serebrov) Adres avtorov: Leningrad, Kamennyy ostrov, 2-ya Berezovaya alleya, d.3, Institut onkologii AMN SSSR.

(INTESTINE LARGE, neoplasms,
diag., cytol.)

SHAL'NEVA, T.S. (Leningrad, per. Pirogova, 13, kv.25)

Triple resection of the large intestine in primary multiple cancer. Vop.onk. 1 no.5:102-103 '55. (MLRA 10:1)

1. Iz 1-go khirurgicheskogo otdeleniya (zav. - prof. S.A.Khaldin) Instituta onkologii AMN SSSR (dir. - chlen korr. AMN SSSR prof. A.I.Serebrov)

(INTESTINE, LARGE, neoplasms, multiple primary, tripple resection)

SHAL'NEVA, T.S. (Leningrad, per. Pirogova, d.13, kv. 25)

Clinical aspects of lipomas of the large intestine [with summary in English]. Vop.onk. 4 no.3:324-328 '58 (MIRA 11:8)

1. Iz 1-go khirurgicheskogo otdeleniya (zav. - chlen-korrespondent AMN SSSR prof. S.A. Kholdin) Instituta onkologii AMN SSSR (dir. deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov).

(COLON, neoplasms,
lipoma, submucous (Rus))
(LIPOMA, case reports,
colon, submucous (Rus))

SHAL'NEVA, T.S., kand.med.nauk

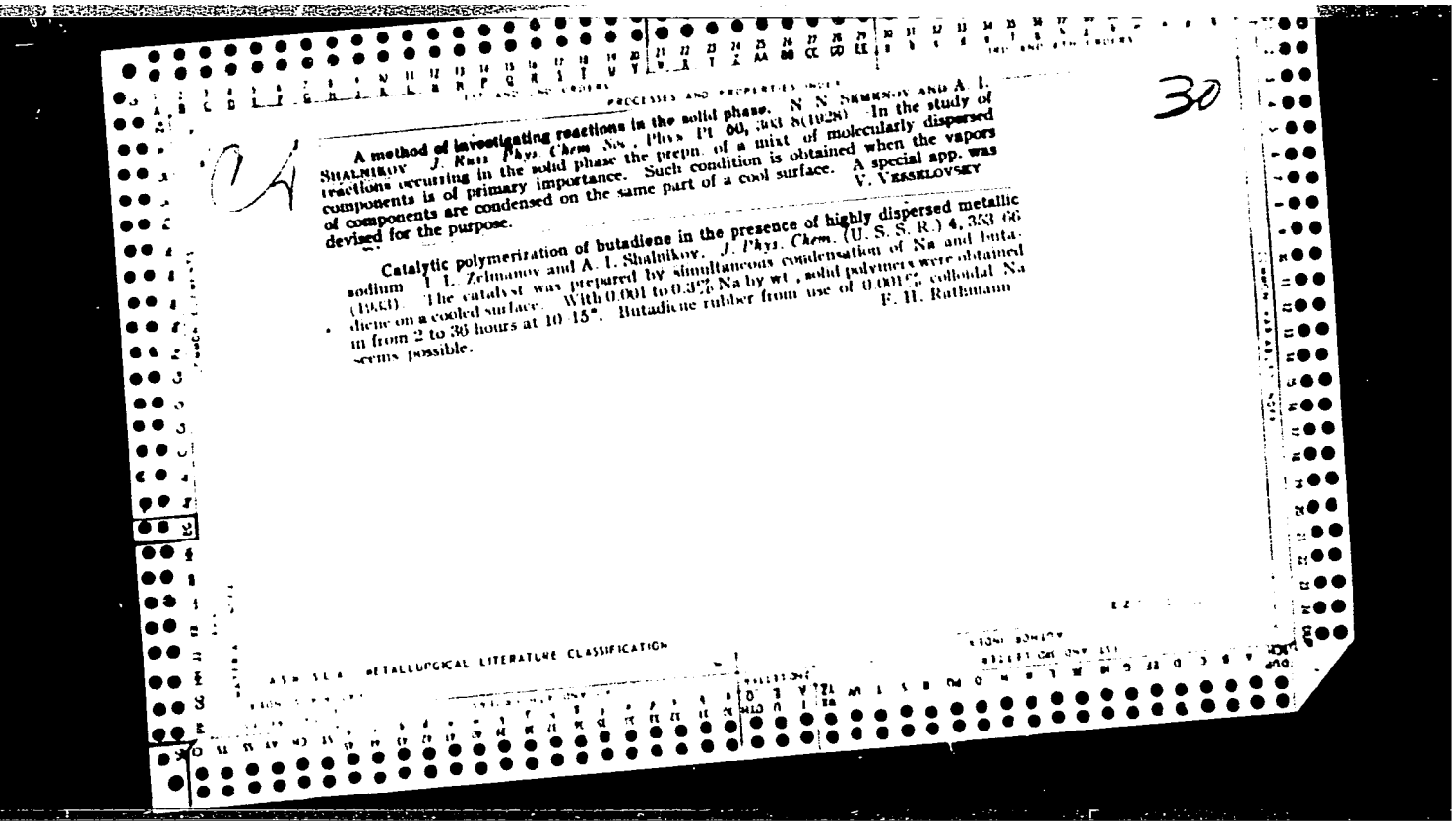
Blood supply of the distal section of the esophagus. Sbor. nauch. trud. GIDUV no. 14:227-232 '58. (MIRA 13:10)

1. Iz kafedry operativnoy khirurgii (zav. kafedroy prof. A.P. Nadein) i iz kafedry onkologii (zav. kafedroy prof. A.I. Rakov) Gosudarstvennogo instituta dlya usovershenstvovaniya vrachey.
(ESOPHAGUS--BLOOD SUPPLY)

MEL'NIKOV, R.A.; SHAL'IMOVA, T.S.

Clinical aspect and treatment of epithelioma of the lacrimal gland. Vop onk. 8 no. 10:64-72 '62. (MIRA 17:7)

1. Iz 1 khirurgicheskogo otdeleniya (zav. - chlen-korrespondent AMN SSSR, prof. S.A.Kholdin) Instituta onkologii AMN SSSR (direktor - deystvitel'nyy chlen AMN SSSR, prof. A.I.Serebrov). Adres avtorov: Leningrad, P-129, 2-ya Berezovaya alleya, 3, Institut onkologii AMN SSSR.



A method of investigating reactions in the solid phase. N. N. Semenov and A. I. Shalnikov. *J. Russ. Phys. Chem. Soc., Phys. Pt.* **60**, 383-8(1928). In the study of reactions occurring in the solid phase the prepn. of a mixt. of molecularly dispersed components is of primary importance. Such condition is obtained when the vapors of components are condensed on the same part of a cool surface. A special app. was devised for the purpose.

Catalytic polymerization of butadiene in the presence of highly dispersed metallic sodium. I. L. Zelmanov and A. I. Shalnikov. *J. Phys. Chem.* (U. S. S. R.) **4**, 353-66 (1933). The catalyst was prepared by simultaneous condensation of Na and butadiene on a cooled surface. With 0.001 to 0.3% Na by wt., solid polymers were obtained in from 2 to 36 hours at 10-15°. Butadiene rubber from use of 0.001% colloidal Na seems possible.

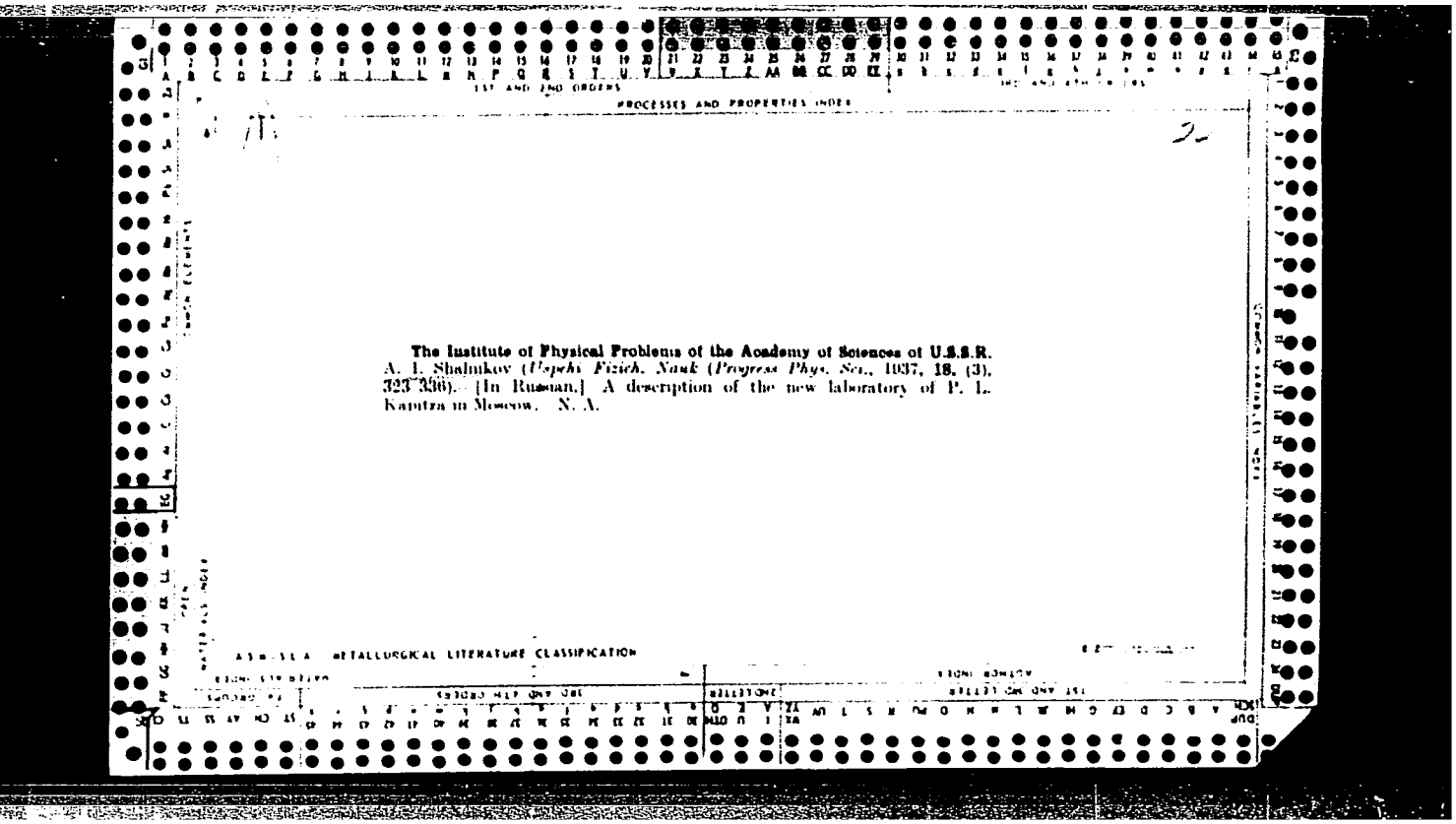
F. H. Ruthmann

30

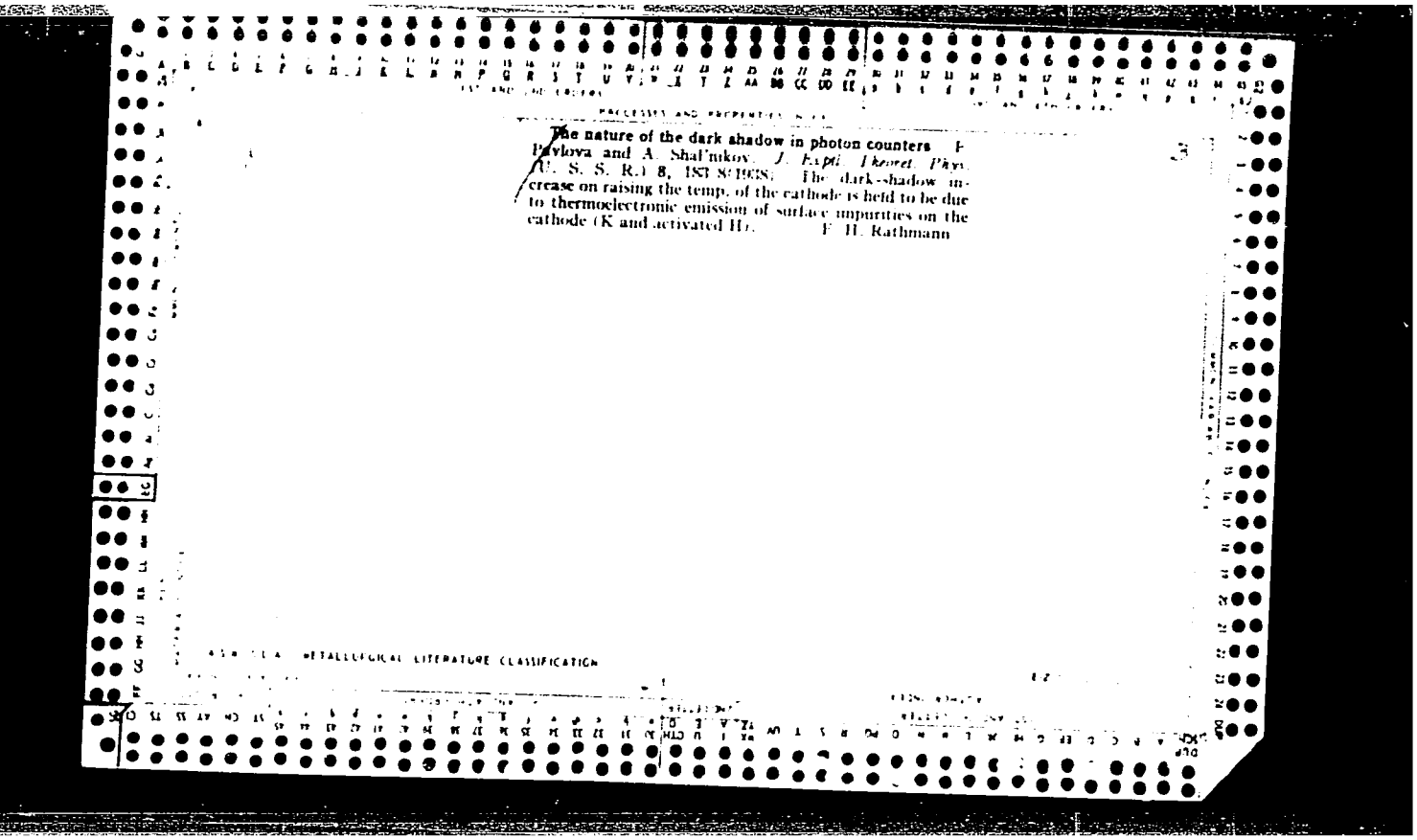
METALLURGICAL LITERATURE CLASSIFICATION

[redacted], Aleksandr Iosifovich

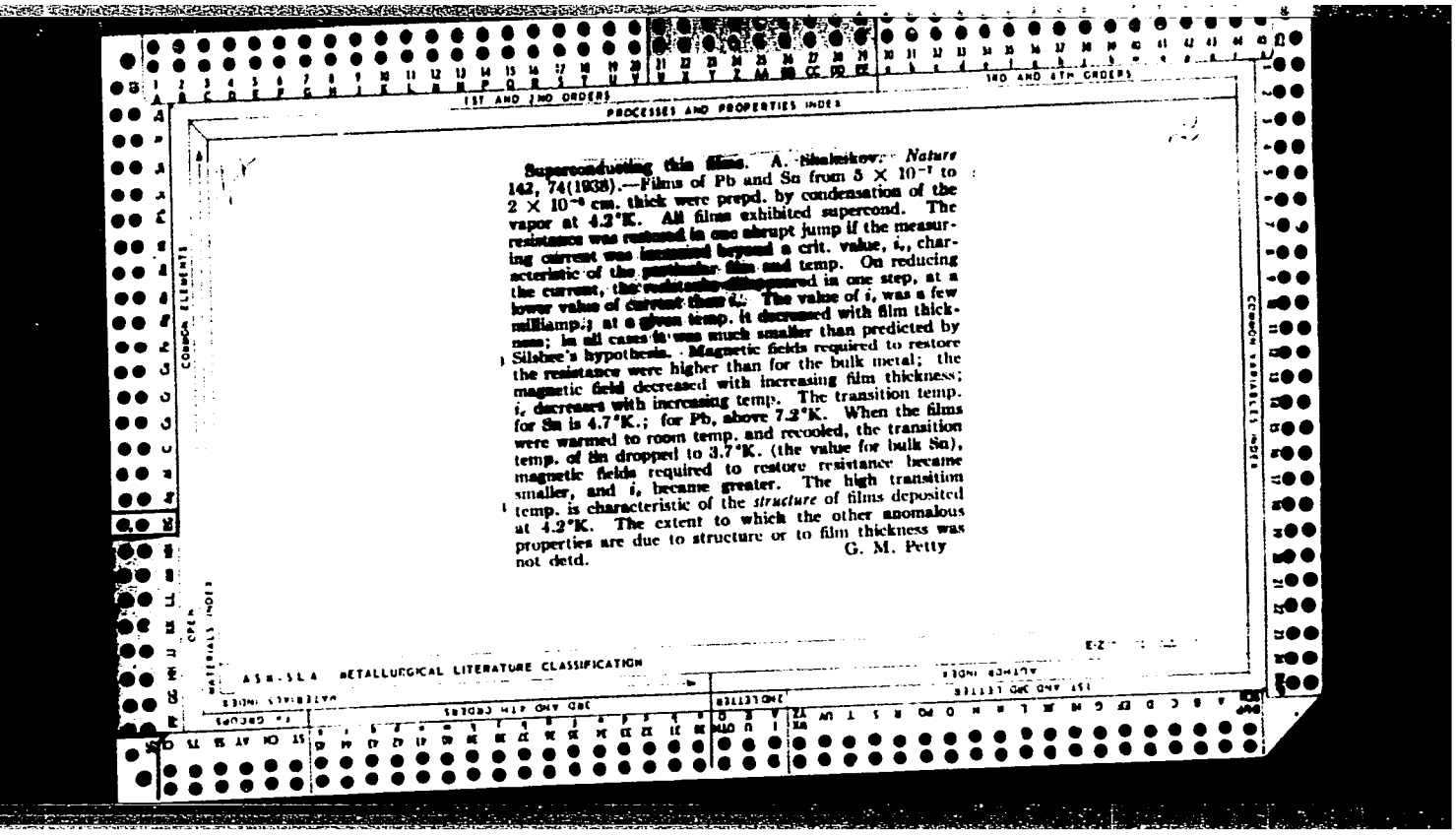
"Methods for Obtaining Organosolic Alkali Metals," Zhurnal fizicheskoy khimii, 1933, Vol. 4, No. 3, (written jointly with others)



The Institute of Physical Problems of the Academy of Sciences of U.S.S.R. A. I. Shalnikov (*Uspekh. Fizich. Nauk* (*Progress Phys. Sci.*, 1937, **18**, (3), 323–336). [In Russian.] A description of the new laboratory of P. L. Kapitza in Moscow. N. A.



The nature of the dark shadow in photon counters P Pavlova and A. Shal'nikov. *J. Exptl. Theoret. Phys. U. S. S. R.* 8, 1387–8(1938). The dark-shadow increase on raising the temp. of the cathode is held to be due to thermoelectronic emission of surface impurities on the cathode (K and activated H). F. H. Rathmann



1ST AND 2ND ORDERS

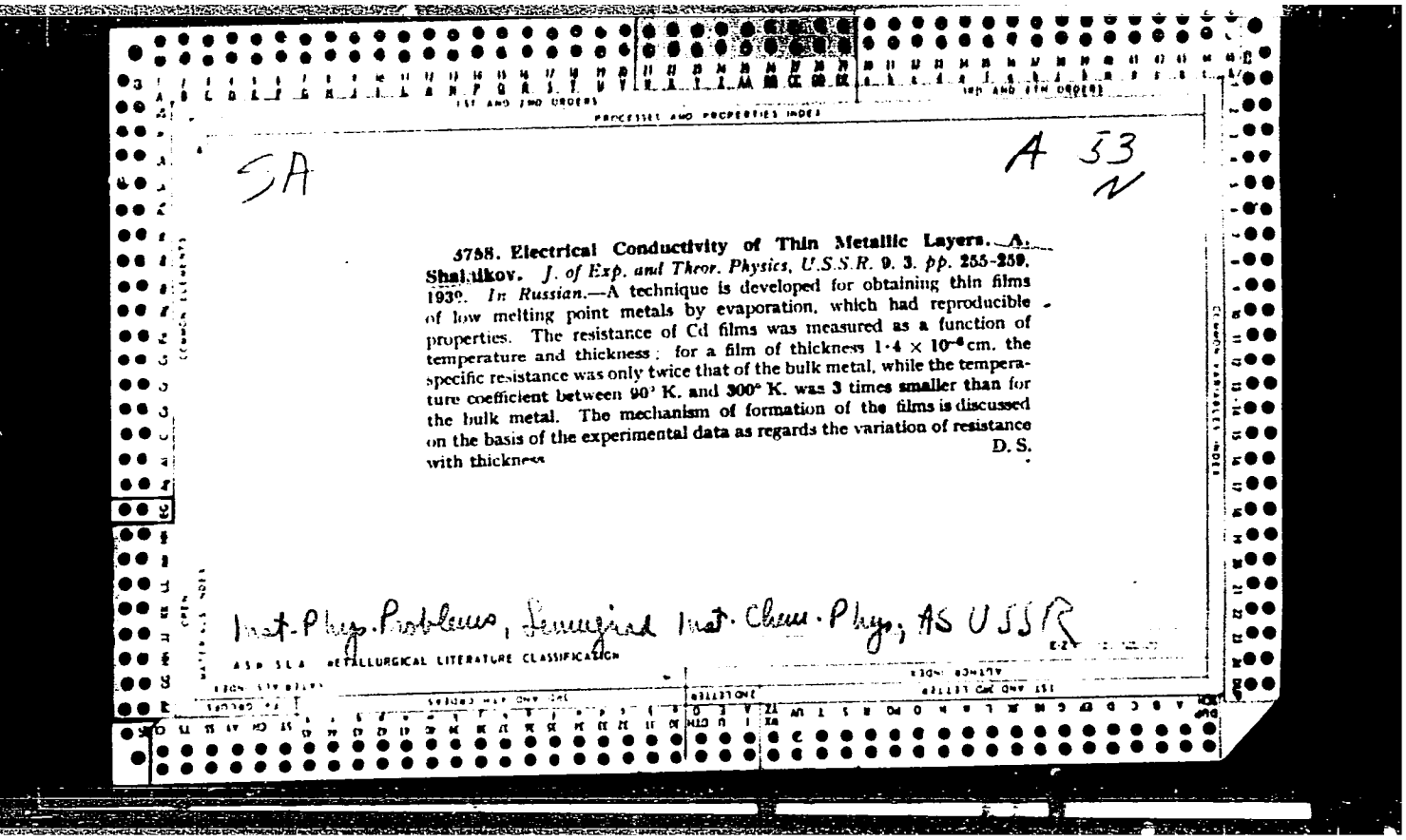
PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Superconducting thin films. A. Shalnikov. *Nature* 142, 74(1938).—Films of Pb and Sn from 5×10^{-7} to 2×10^{-6} cm. thick were prepd. by condensation of the vapor at 4.2°K. All films exhibited supercond. The resistance was restored in one abrupt jump if the measuring current was increased beyond a crit. value, i_c, characteristic of the particular film and temp. On reducing the current, the resistance disappeared in one step, at a lower value of current than i_c. The value of i_c was a few milliamp.; at a given temp. it decreased with film thickness; in all cases it was much smaller than predicted by Silsbee's hypothesis. Magnetic fields required to restore the resistance were higher than for the bulk metal; the magnetic field decreased with increasing film thickness; i_c decreases with increasing temp. The transition temp. for Sn is 4.7°K.; for Pb, above 7.2°K. When the films were warmed to room temp. and recooled, the transition temp. of Sn dropped to 3.7°K. (the value for bulk Sn), magnetic fields required to restore resistance became smaller, and i_c became greater. The high transition temp. is characteristic of the *structure* of films deposited at 4.2°K. The extent to which the other anomalous properties are due to structure or to film thickness was not detd.

G. M. Petty

A5A-5L4 METALLURGICAL LITERATURE CLASSIFICATION



SA

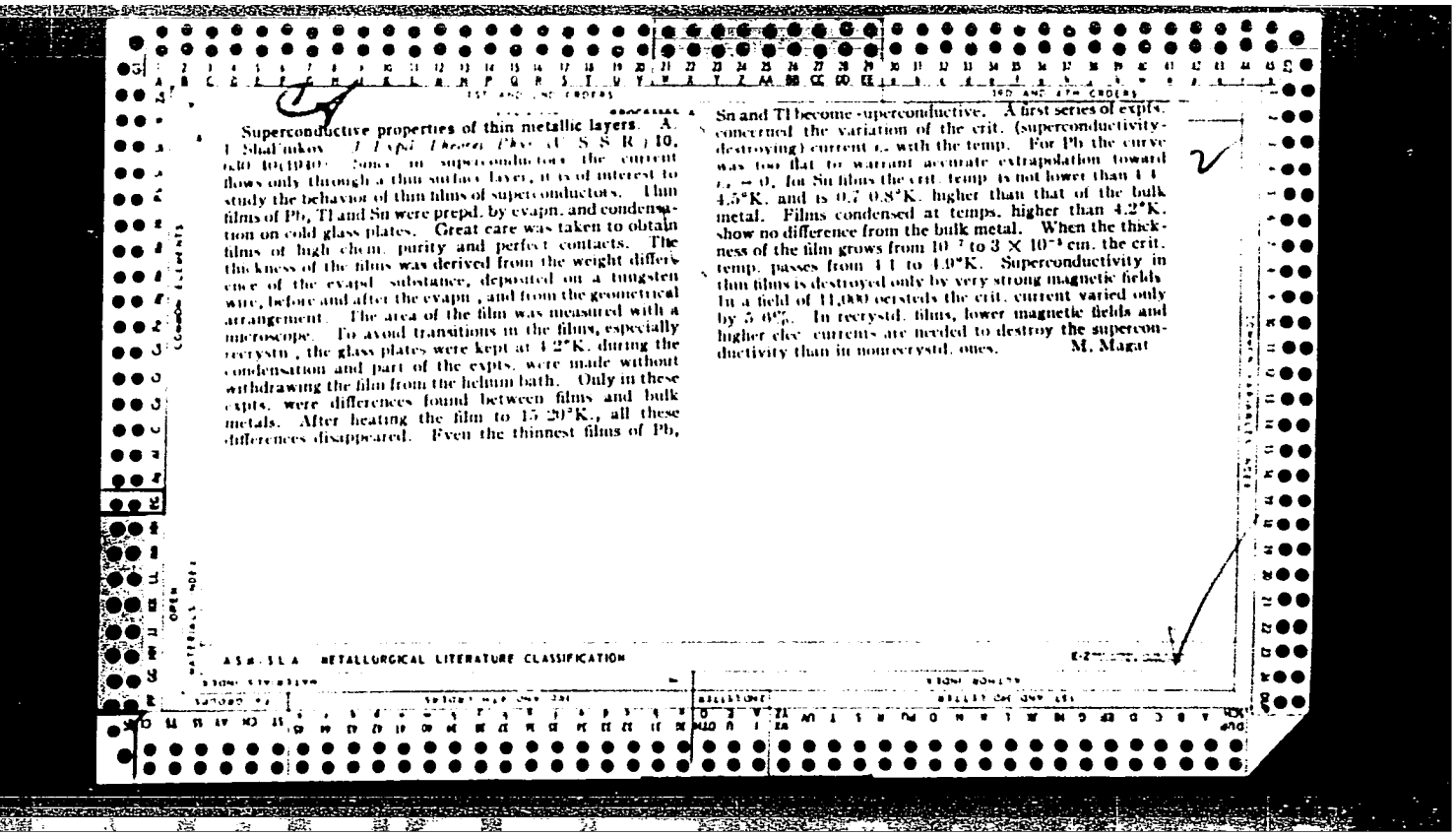
A 53
N

5788. **Electrical Conductivity of Thin Metallic Layers.** A. **Shalnikov.** *J. of Exp. and Theor. Physics, U.S.S.R.* 9. 3. *pp.* 255-259. 1939. *In Russian.*—A technique is developed for obtaining thin films of low melting point metals by evaporation, which had reproducible properties. The resistance of Cd films was measured as a function of temperature and thickness; for a film of thickness $1{\cdot}4 \times 10^{-6}$ cm. the specific resistance was only twice that of the bulk metal, while the temperature coefficient between 90° K. and 300° K. was 3 times smaller than for the bulk metal. The mechanism of formation of the films is discussed on the basis of the experimental data as regards the variation of resistance with thickness

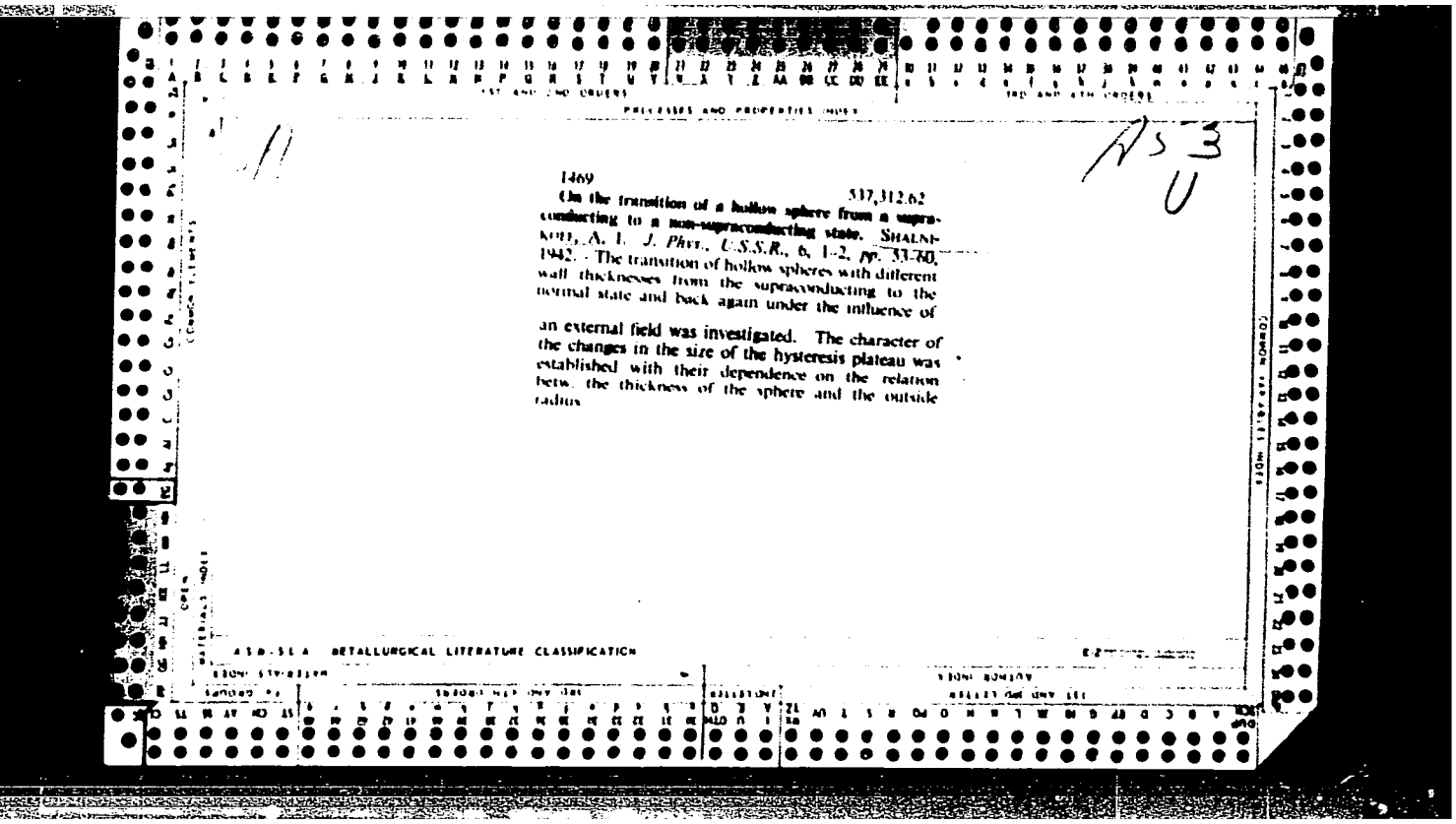
D. S.

Inst. Phys. Problems, Leningrad Inst. Chem. Phys, AS USSR

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



Superconductive properties of thin metallic layers. A. I. Shal'nikov. *J. Exptl. Theoret. Phys. (U. S. S. R.)* 10, 630-40(1940). Since in superconductors the current flows only through a thin surface layer, it is of interest to study the behavior of thin films of superconductors. Thin films of Pb, Tl and Sn were prepd. by evapn. and condensation on cold glass plates. Great care was taken to obtain films of high chem. purity and perfect contacts. The thickness of the films was derived from the weight difference of the evapd. substance, deposited on a tungsten wire, before and after the evapn., and from the geometrical arrangement. The area of the film was measured with a microscope. To avoid transitions in the films, especially recrystn., the glass plates were kept at 4.2°K. during the condensation and part of the expts. were made without withdrawing the film from the helium bath. Only in these expts. were differences found between films and bulk metals. After heating the film to 15-20°K., all these differences disappeared. Even the thinnest films of Pb, Sn and Tl become superconductive. A first series of expts. concerned the variation of the crit. (superconductivity-destroying) current i_c with the temp. For Pb the curve was too flat to warrant accurate extrapolation toward $i_c = 0$, for Sn films the crit. temp. is not lower than 4.4-4.5°K. and is 0.7-0.8°K. higher than that of the bulk metal. Films condensed at temps. higher than 4.2°K. show no difference from the bulk metal. When the thickness of the film grows from 10^{-7} to 3×10^{-3} cm. the crit. temp. passes from 4.1 to 4.9°K. Superconductivity in thin films is destroyed only by very strong magnetic fields. In a field of 11,000 oersteds the crit. current varied only by 5-6%. In recrystd. films, lower magnetic fields and higher elec. currents are needed to destroy the superconductivity than in nonrecrystd. ones. M. Magat



1469 537,312.62

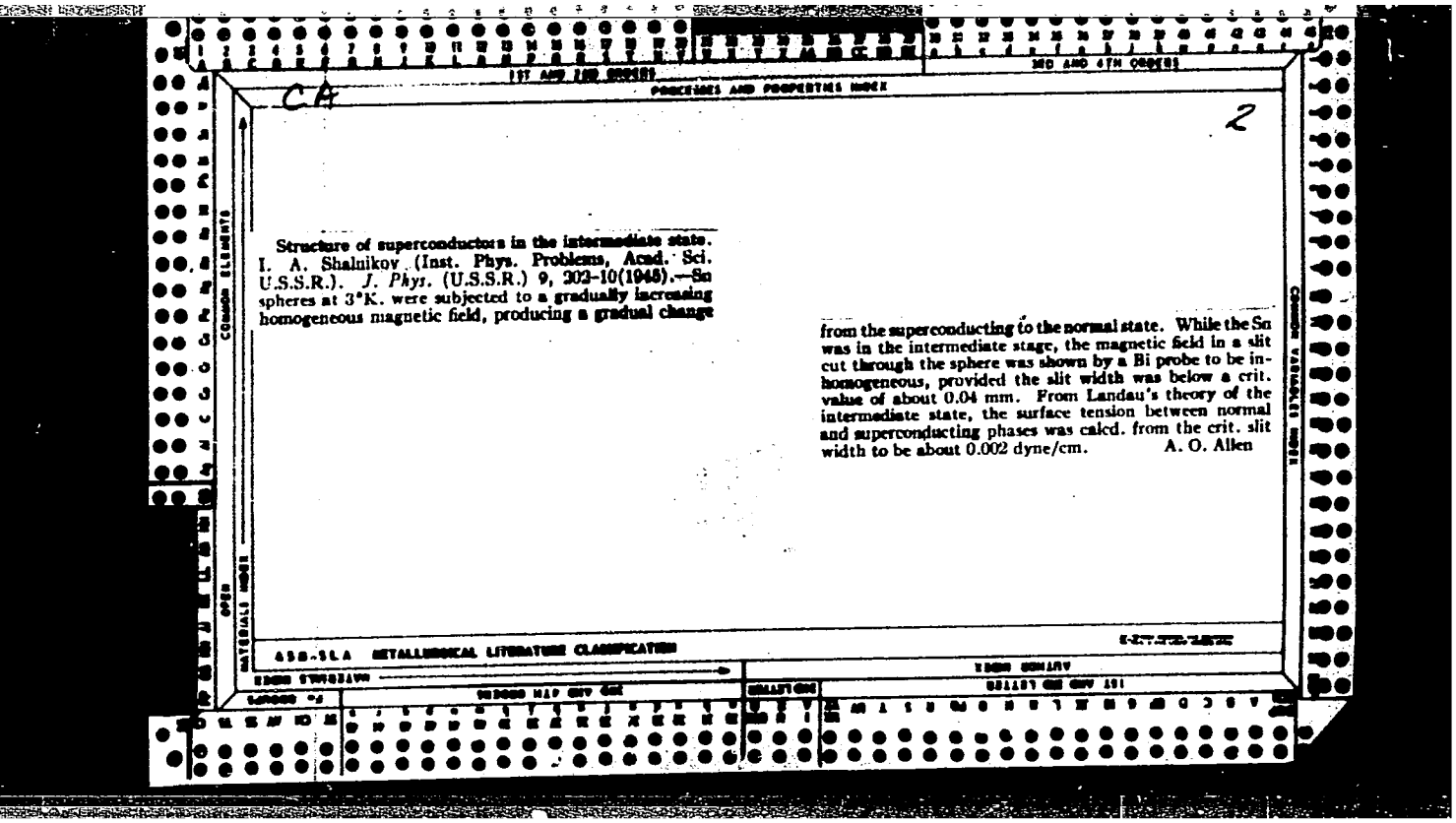
On the transition of a hollow sphere from a superconducting to a non-superconducting state. SHALNIKOV, A. I. *J. Phys., U.S.S.R.*, 6, 1-2, *pp.* 53-60, 1942. - The transition of hollow spheres with different wall thicknesses from the superconducting to the normal state and back again under the influence of an external field was investigated. The character of the changes in the size of the hysteresis plateau was established with their dependence on the relation betw. the thickness of the sphere and the outside radius

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

*An investigation of the Intermediate State of a Supraconducting Sphere. A. I. Shal'nikov (Izvest. Akad. Nauk S.S.S.R., 1942, [Fiz.], 6, (1/2), 80-81). [In Russian.] A brief résumé of a paper describing experiments which show that an intermediate state exists in a supraconducting sphere of tin. This was achieved by measuring the longitudinal inhomogeneity of the magnetic field in a 12 [illegible]-thick cut made in the sphere.—N. A.

METALLURGICAL LITERATURE CLASSIFICATION



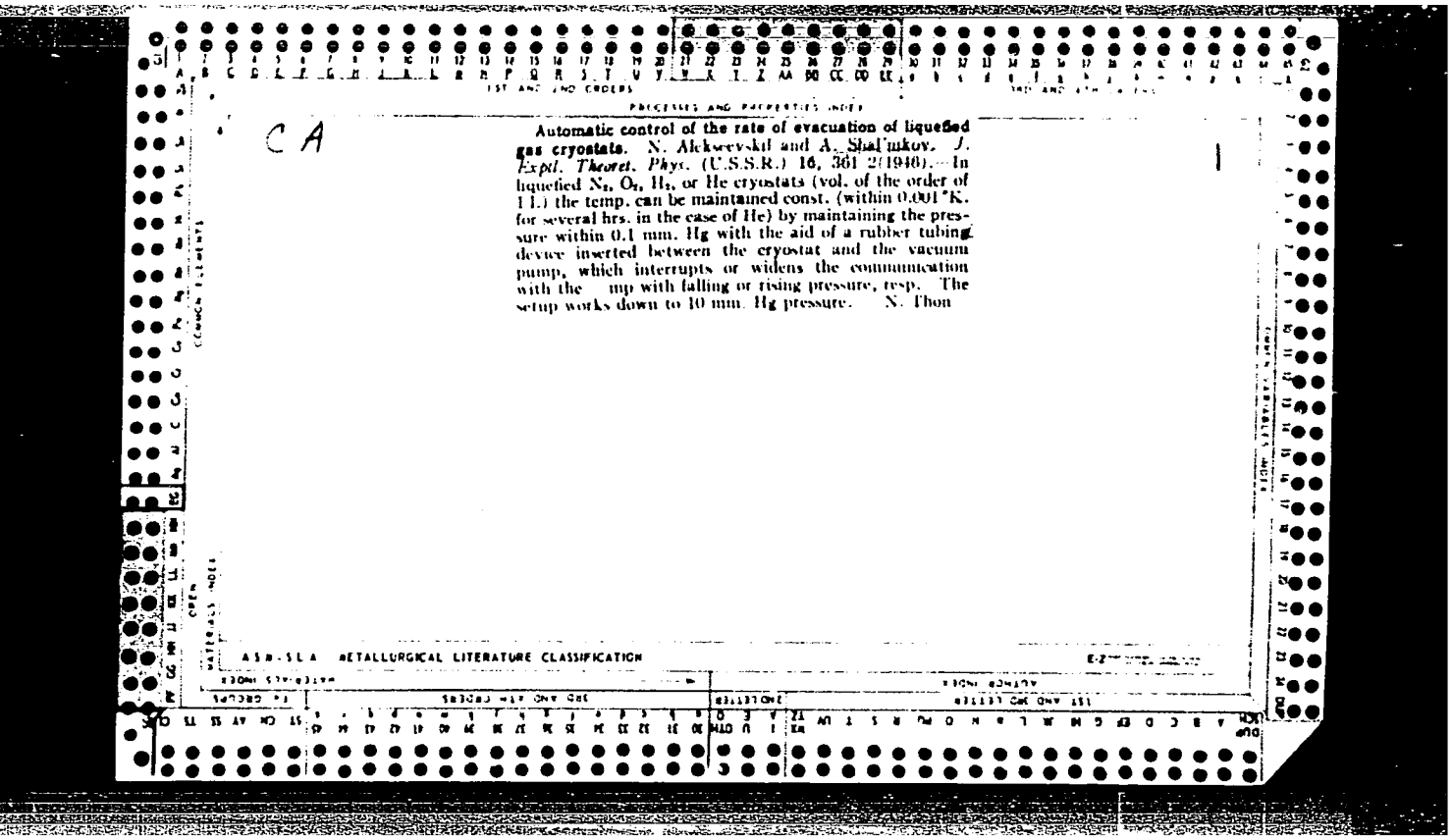
CA

2

Structure of superconductors in the intermediate state. I. A. Shalnikov (Inst. Phys. Problems, Acad. Sci. U.S.S.R.). *J. Phys.* (U.S.S.R.) 9, 303-10(1945).—Sn spheres at 3°K. were subjected to a gradually increasing homogeneous magnetic field, producing a gradual change from the superconducting to the normal state. While the Sn was in the intermediate stage, the magnetic field in a slit cut through the sphere was shown by a Bi probe to be inhomogeneous, provided the slit width was below a crit. value of about 0.04 mm. From Landau's theory of the intermediate state, the surface tension between normal and superconducting phases was calcd. from the crit. slit width to be about 0.002 dyne/cm. A. O. Allen

CA

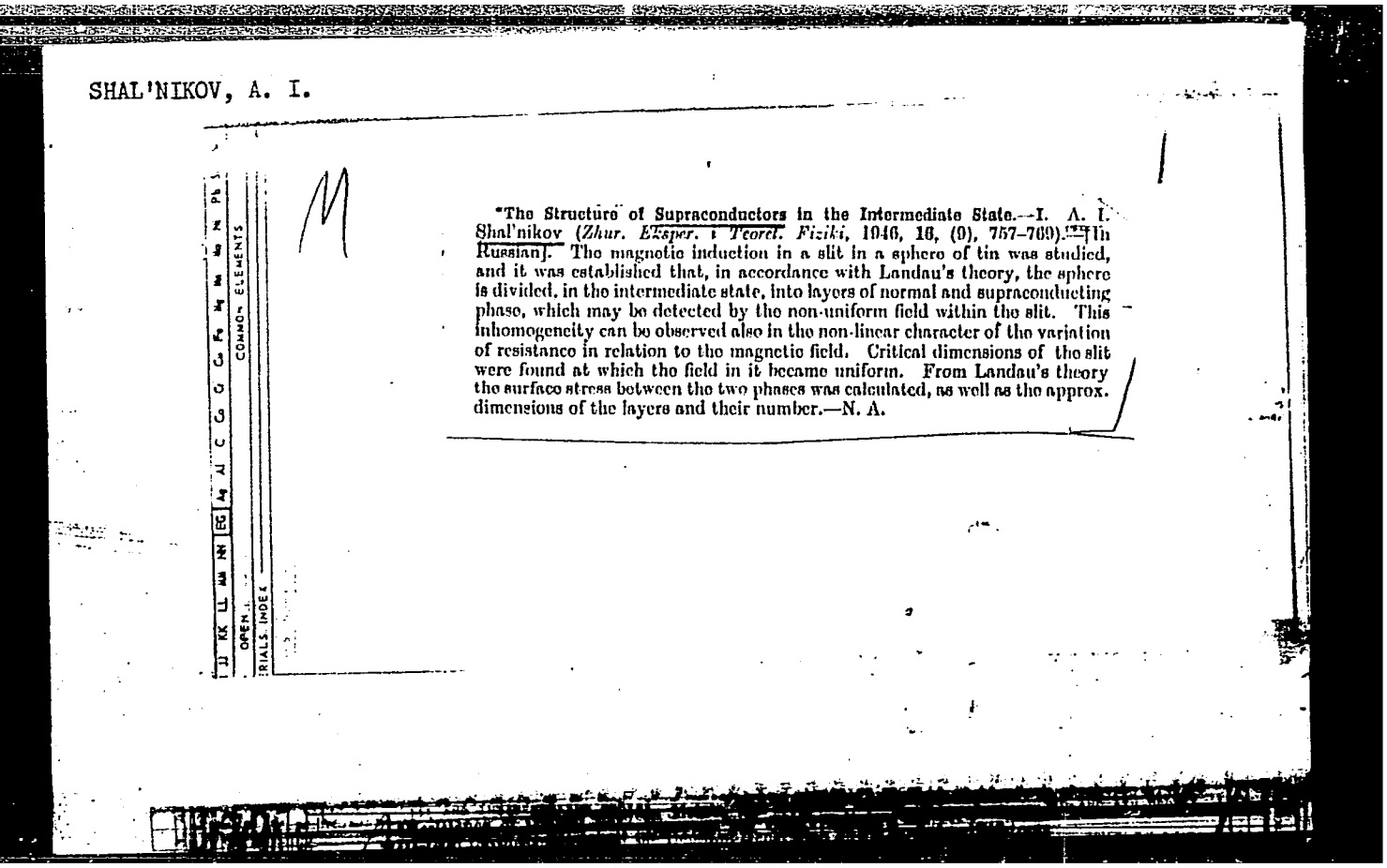
Coagulation of fog in liquid helium. H. P. Savich and A. Shal'nikov. *J. Phys. (U.S.S.R.)* 10, 288(1946). —Fog due to the accidental presence of air or H_2 in liquid He coagulates rapidly when the λ point is reached, and becomes dispersed again when the temp. rises. B. A.



CA

Automatic control of the rate of evacuation of liquefied gas cryostats. N. Alekseevskiĭ and A. Shal'nikov. *J. Expl. Theoret. Phys.* (U.S.S.R.) 16, 361 (1946).—In liquefied N_2, O_2, H_2, or He cryostats (vol. of the order of 1 l.) the temp. can be maintained const. (within 0.001° K. for several hrs. in the case of He) by maintaining the pressure within 0.1 mm. Hg with the aid of a rubber tubing device inserted between the cryostat and the vacuum pump, which interrupts or widens the communication with the pump with falling or rising pressure, resp. The setup works down to 10 mm. Hg pressure. N. Thon

SHAL'NIKOV, A. I.



"The Structure of Supraconductors in the Intermediate State.—I. A. I. Shal'nikov (*Zhur. Eksper. i Teoret. Fiziki*, 1940, 10, (9), 757–769).—[In Russian.] The magnetic induction in a slit in a sphere of tin was studied, and it was established that, in accordance with Landau's theory, the sphere is divided, in the intermediate state, into layers of normal and supraconducting phase, which may be detected by the non-uniform field within the slit. This inhomogeneity can be observed also in the non-linear character of the variation of resistance in relation to the magnetic field. Critical dimensions of the slit were found at which the field in it became uniform. From Landau's theory the surface stress between the two phases was calculated, as well as the approx. dimensions of the layers and their number.—N. A.

SHAL'NIKOV, A. I.

MIRONOV, A. V., I. A. KHVOSTIKOV, and A. I. SHAL'NIKOV.

Method for optical investigation of the atmosphere under daylight conditions by means of a searchlight beam. (Akademiia Nauk SSSR. Comtes rendus de l'Academie des Sciences de l'URSS. Nouvelle serie, 1946, v. 54, no. 6, p. 483-486, diagrs.)

260.A52 v.54

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1953.

SHALNIKOV, A.

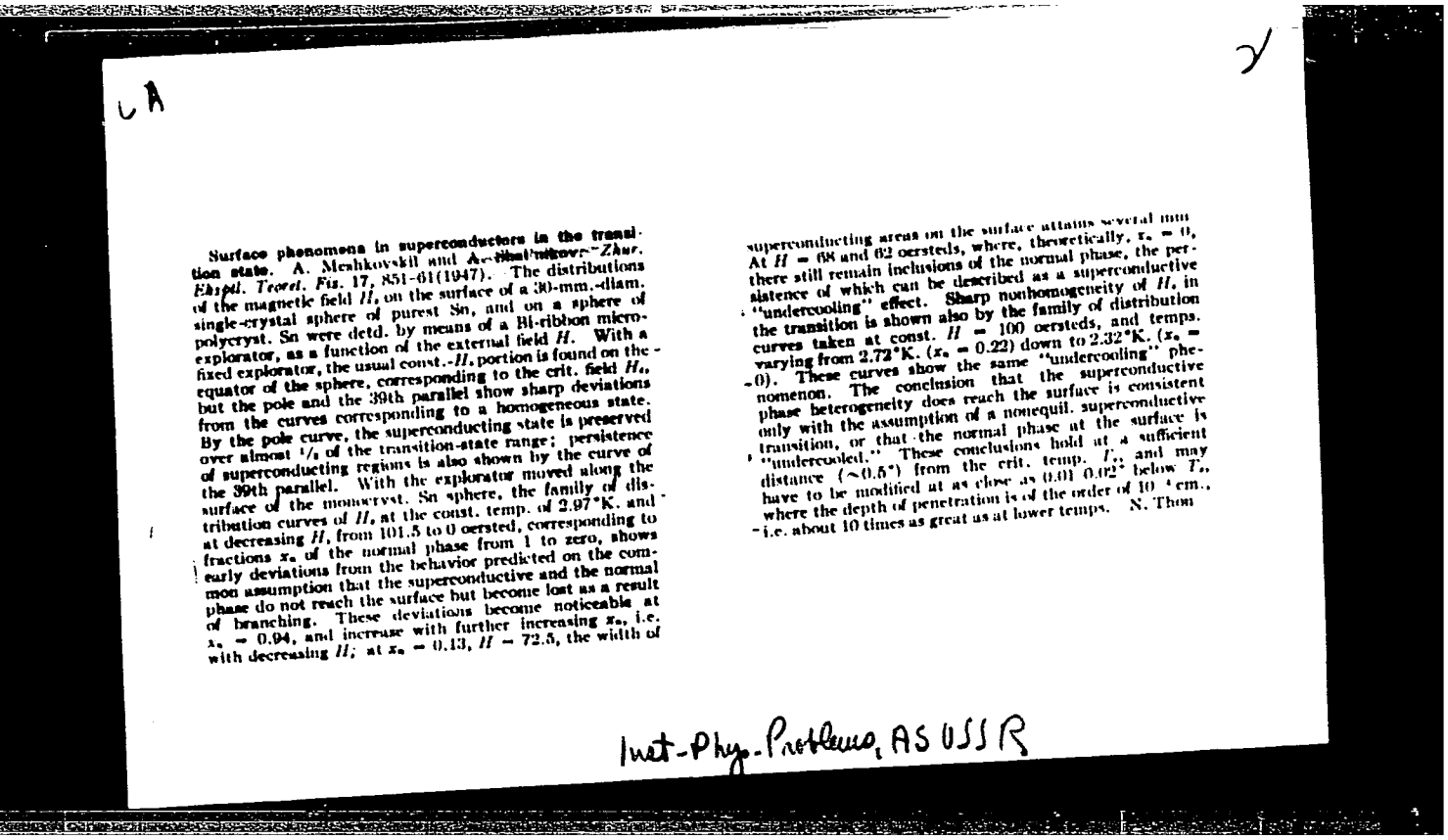
537.312.62 2563

The structure of superconductors in the intermediate state. II. [illegible]KOVSKI, A. AND SHALNIKOV, A. J. Phys., USSR, 11 (No. 1) 1-15 (1947).- The structure of the intermediate state was studied by measuring the variations of magnetic field in a gap between two Sn hemispheres with very small Bi probes. The distribution was found to correspond to a somewhat irregular mixture of superconducting and normal phases, which differed according to whether the temp. had been lowered in const. magnetic field, or the field varied at const. temp. Contrary to the suggestion of earlier experiments using a larger Bi probe, the variations of field persisted even when the gap was large. This is not in agreement with Landaus' prediction (J. Phys. USSR,7,99(1943) that there should be a small critical width of gap beyond which the field variations disappear, corresponding to a much more intimate mixture of the phases at the gap surfaces. D.S.

Inst. Phys. Problems, AS USSR

Chem Abs 1951

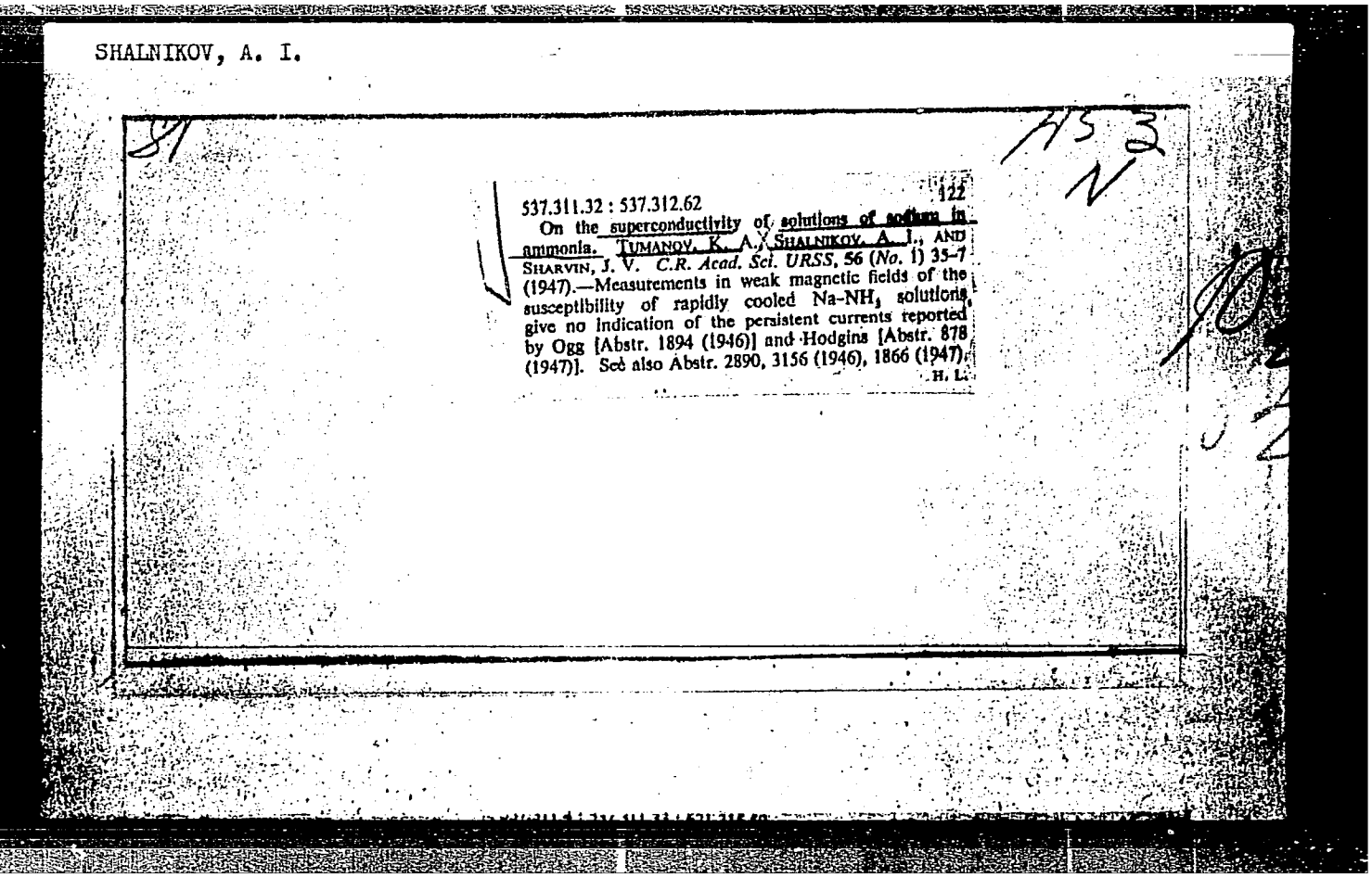
The structure of superconductors in the transition state. II. A. G. Meshkovskii and A. I. Shal'nikov. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 11, 30-7(1947); *Chem. Zentr.* (Russian Zone Ed.) 1948, II, 1152; cf. C.A. 40, 1071[9], 44, 2809g, 6223f.—The distribution of superconducting layers in the transition state is investigated by measuring in a magnetic field with improved devices the field distribution in superconducting 20- and 30-mm. diam. single crystal spheres of Sn and 28-mm. diam. polycryst. spheres of Sn. The Bi ribbons (5 × 10 × 300 μ) are movable along the diam. of the sphere and the fluctuations of the resistance are recorded with a sensitive galvanometer on photographic paper placed on a synchronized drum. The device allows the registration of complete field distributions within 5 min. In the superconducting state the field = 0, in the transition state (approaching the normal state) increasingly irregular curves are obtained for the field distribution corresponding to the formation of superconducting and normal layers. In the normal state the field is again homogeneous. Reaching a certain transition state by a change of T at H = const. results in a more regular field distribution than reaching it by a change of H at T = const. The previously reported crit. slit width (cf. C.A. 40, 1071[9]) with larger Bi ribbons is not observed here. A nonhomogeneous field distribution occurs in the immediate vicinity of the hemisphere with a slit of 2.3 mm. The lines of force are almost completely homogeneous in the center of the slit. Quant. comparisons with the theory of Landau (*J. Exptl. Theoret. Phys.* 13, 377(1943)) are not possible because of the irregularity of the layers. F. W. Hofmann



Surface phenomena in superconductors in the transition state. A. Meshkovskii and A. Shal'nikov. *Zhur. Eksptl. Teoret. Fiz.* 17, 851-61(1947). The distributions of the magnetic field H_z on the surface of a 30-mm.-diam. single-crystal sphere of purest Sn, and on a sphere of polycryst. Sn were detd. by means of a Bi-ribbon microexplorator, as a function of the external field H. With a fixed explorator, the usual const.-H_z portion is found on the equator of the sphere, corresponding to the crit. field H_c, but the pole and the 39th parallel show sharp deviations from the curves corresponding to a homogeneous state. By the pole curve, the superconducting state is preserved over almost 1/3 of the transition-state range; persistence of superconducting regions is also shown by the curve of the 39th parallel. With the explorator moved along the surface of the monocryst. Sn sphere, the family of distribution curves of H_z at the const. temp. of 2.97°K. and at decreasing H, from 101.5 to 0 oersted, corresponding to fractions x_n of the normal phase from 1 to zero, shows early deviations from the behavior predicted on the common assumption that the superconductive and the normal phase do not reach the surface but become lost as a result of branching. These deviations become noticeable at $x_n = 0.94$, and increase with further increasing x_n, i.e. with decreasing H; at $x_n = 0.13$, $H = 72.5$, the width of superconducting areas on the surface attains several mm. At $H = 68$ and 62 oersteds, where, theoretically, $x_n = 0$, there still remain inclusions of the normal phase, the persistence of which can be described as a superconductive "undercooling" effect. Sharp nonhomogeneity of H_z in the transition is shown also by the family of distribution curves taken at const. $H = 100$ oersteds, and temps. varying from 2.72°K. ($x_n = 0.22$) down to 2.32°K. ($x_n = 0$). These curves show the same "undercooling" phenomenon. The conclusion that the superconductive phase heterogeneity does reach the surface is consistent only with the assumption of a nonequil. superconductive transition, or that the normal phase at the surface is "undercooled." These conclusions hold at a sufficient distance (~0.5°) from the crit. temp. T_c, and may have to be modified at as close as 0.01 0.02° below T_c, where the depth of penetration is of the order of 10^{-4} cm., i.e. about 10 times as great as at lower temps. N. Thon

Inst-Phys-Problems, AS USSR

SHALNIKOV, A. I.



122

537.311.32 : 537.312.62

On the superconductivity of solutions of sodium in ammonia. TUMANOV, K. A., SHALNIKOV, A. I., AND SHARVIN, J. V. *C.R. Acad. Sci. URSS*, 56 (*No.* 1) 35–7 (1947).—Measurements in weak magnetic fields of the susceptibility of rapidly cooled Na-NH_3 solutions give no indication of the persistent currents reported by Ogg [Abstr. 1894 (1946)] and Hodgins [Abstr. 878 (1947)]. See also Abstr. 2890, 3156 (1946), 1866 (1947).

H. L.

PA 10/49T103

SHAL'NIKOV, A. I.

May/Jun 48

USSR/Physics
Magnetic Fields
Conductors

"Studies on the Depth of Penetration of Magnetic Fields Into a Massive Superconductor," A. I. Shal'nikov, Yu. V. Sharvii, Inst of Phys Problems, Acad Sci USSR, 20½ pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 3, pp 195-215

Describes experiments and results. Specimen was prepared from 99.998% pure tin. Apparatus was devised by authors. Compares results with those obtained by Pippard and others.

10/49T103

[redacted]

SHAL'NIKOV, A. I.

USSR/Physics Jan 1948
Superconductivity
Magnetic Fields - Analysis

"Research on the Depth of Penetration of a Magnetic Field into a Solid Superconductor," A. I. Shal'nikov, Yu. V. Sharvin, 1½ pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 1 pp 102-103

Describes experiment carried out to determine the variable EMF in a coil inside which is placed a superconducting tin model in the form of an ellipsoid 4 cm long with a diameter of 1 cm. Tabulates experimental results. Thanks P. L. Kapitsa, L. D. Landau and N. V. Zavaritskiy for assistance.

41T101

USSR/Physics - Super-conductive films

Card 1/1 Pub. 22 - 18/56

Authors : Khukhareva, I., and Shalnikov, A., member correspondent of the Acad. of Scs of the USSR.

Title : On the super-conductivity of fine films of tantalum (Ta) and niobium (Nb)

Periodical : Dok. AN SSR 99/5, 735-736, Dec. 11, 1954

Abstract : Experiments with fine films of tantalum and niobium are described. The films were obtained either by cathode dispersion method, or evaporation in a high vacuum. A dependence of the super-conductive property of these films on the temperature was investigated. Results are presented in the form of graphs. One reference (1951). Graphs.

Institution: The Institute of Physical Problems of the Acad. of Scs of the USSR.

SHOENBERG, D.;DIATROPTOV, D.B. [translator]; SHAL'NIKOV, A.I., redaktor; NAKHIMSON, I.G., redaktor; NIKIFOROVA, A.N., tekhnicheskiy redaktor.

[Superconductivity. Translated from the English] Sverkhprovodimost'. Perevod s angliiskogo D.B.Diatroptova. Pod red. A.I.Shal'nikova. Moskva, izd-vo inostrannoi lit-ry, 1955. 288 p. (MLRA 9:4)
(Electric conductivity) (Low temperature research)

Shal'nikov, A. I.

FD-1826

USSR/Physics - Light counter

Card 1/1 Pub 146-11/25

Author : Rodionov, S. F.; Khaykin, M. S.; Shal'nikov, A. I.

Title : Self-quenching light counters

Periodical : Zhur. eksp. i teor. fiz. 28, 223-227, February 1955

Abstract : The authors describe self-quenching light counters. They present the special characteristics of counters with photocathodes made of platinum, aluminum, and magnesium. The described self-quenching photon counter possesses very stable counting properties and sufficient sensitivity convenient for mass production. The design and construction were carried out in the Institute of Physical Problems, Academy of Sciences USSR, by A. I. Shal'nikov and M. S. Khaykin; and the measurements of the spectral sensitivity of the counters were done in the Physical Institute, Leningrad State University, by S. F. Rodionov. Five references; e.g. S. F. Rodionov and A. I. Shal'-nikov, ibid. 5, 160, 1935.

Institution: Institute of Physical Problems, Academy of Sciences USSR

Submitted : March 31, 1954

USSR/General Section - Metrology. Laboratory Technique. A-6

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8350

Author : A.I. Shal'nikov
Inst :
Title : Instruments and Measurement Techniques. Chief Editor A.I. Shal'nikov, Moscow, Academy of Sciences, USSR, No 1 -- July-August 1956, six issues per year, 72 rubles per year.

Orig Pub : AN SSSR, No 1, Yul'-arg. 1956, Six Issues a Year.

Abstract : A new journal of physics published by the Academy of Sciences USSR.

Card 1/1

SHALNIKOV, A.I.

91

Magnitude of the critical current in thin layers of superconductors. L. A. Falin and A. I. Shal'nikov (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 108, 823–4(1956).—The crit. current was detd. for a thin, cylindrical layer of Sn. In the temp. region near the crit. temp. the crit. current increases almost linearly with decreasing temp. The method makes it possible to det. small values of crit. currents in thin layers of supercond. metals and to show that the crit. magnetic field was about 0.1 that for the massive metal. J. Rovtar Leach

AUTHOR: Vasil'yev, O. I., and Shal'nikov, A. I. 120-2-35/37

TITLE: Small Stream Flow-meter. (Raskhodomer dlya Malykh Potokov)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No. 2, pp. 118 - 119 (USSR)

ABSTRACT: A short description of a simple and reliable flow meter for small gas streams is described. The instrument (Fig. 1) consists of a differential thermo-couple and a galvanometer, which measure the temperature difference at points equally spaced from the heat source and positioned in the region of the water cooling system. The galvanometer used is of type ГМ-2 with a sensitivity of 140mm/amp and resistance 30 ohms, the thermo-couple consists of a constantan wire, 0.3mm diameter, soldered directly to the working part of the instrument with the differential secondary using the Wood alloy and clamped on to a heat sink. The instrument is not sensitive to the variations of the cooling water temperature, the increase of it by 1°C producing an error of about 1%. The schematic drawing of the arrangement (Fig. 1), the detailed mechanical drawing of it (excluding the galvanometer) and two calibrating charts for the stainless steel and copper flow tubes are given. There are no references.

Card 1/2

Small Stream Flow-[illegible] [illegible]-3/37

SUBMITTED: December 1, 1957

ASSOCIATION: Institute of Physical Problems, Acad. S. I. Vavilov of the Academy of Sciences, USSR (Institut Fizicheskikh Problem im. S. I. Vavilova Akademii Nauk SSSR.)

AVAILABLE: Library of Congress

Card 2/2

120-6-30/36

AUTHORS: Otroshchenko, V.A., Sviridov, V.A., Tolstov, K.D., and Shal'nikov, A.I.

TITLE: Solid Hydrogen Targets on the Surface of Photographic Emulsions (Tverdyye vodorodnyye misheni na poverkhnosti fotoemul'sii)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 110 - 111 (USSR).

ABSTRACT: It is difficult to study interactions between elementary particles and protons and deuterons which are included in nuclear emulsions because their number is small compared with the total number of nucleons bound in the nuclei of the emulsion. This is still true even when the emulsion is specially loaded with deuterium and hydrogen. To remove this difficulty, it is convenient to have a target of solid hydrogen or deuterium deposited directly on the surface of the emulsion. In this method of preparation of targets the temperature of the emulsion cannot be greater than 12 to 15 ^{o}K. Because of this, the temperature dependence of the sensitivity of NIKFI-R emulsions was investigated (Ref.1). Already at 20 ^{o}K, the sensitivity of emulsion is down by a factor of 2 and therefore it is difficult to use this emulsion with minimum ionisation particles. However, different types of

Card1/2

Solid Hydrogen Targets on the Surface of Photographic Emulsions.

emulsion have been described (Refs. 2 and 3) which have the property that their sensitivity falls much lower with temperature. To obtain sufficiently thick solid hydrogen targets on top of emulsions, a special device shown in Fig.1 was used. The photoemulsion, 2, kept at the bottom of the plate-holder, 1, was surrounded by liquid hydrogen. Through the tube, 3, deuterium gas was introduced into the plate-holder and slowly solidified on top of the emulsion due to the cooling effect of the surrounding liquid hydrogen. After this, the Dewar containing the hydrogen was evacuated and the plate-holder was lifted into position for irradiation by a beam from an accelerator. In the case of the solid hydrogen target, liquid helium was used as the cooling agent. V.I. Veksler and I.B. Danilov collaborated. There are 2 figures, 2 diagrams and 3 references, 2 of which are Slavic.

ASSOCIATION: United Institute for Nuclear Studies
(Ob"yedinennyy Institut yadernykh issledovaniy)
Department of Low Temperature Physics of MGU
(Kafedra Fiziki nizkikh temperatur MGU)

SUBMITTED: May 20, 1957.
AVAILABLE: Library of Congress.

SHAL'NIKOV, A.I.

56-4-50/

AUTHOR: Shal'nikov, A.I.

TITLE: On the Problem Concerning the Reality of a Nonstationary Model of "Intermediate"States (K voprosu o real'nosti nestatsionarnoy modeli promezhutochnogo sostoyaniya) (Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 4, pp. 1071 - 1072 (USSR)

ABSTRACT: Two series of experiments were performed in connection with the model established by Gorter: 1.) The variable component of the magnetic field current on the surface of a monocrystalline zinc sample was measured. No enlargement of the magnetic field was observed in the frequency range from 40 to 30 000 Hz. 2.) The structure of intermediate states was marked by means of the method of magnetic powder. The following experiments were made: a) The sample was cooled to 3,5 °K in a field that was larger than H_k. b) The sample was cooled to 3,5° K and then a field was switched in which exceeded the value $H_k/2$. c) The sample was cooled to 3,5 °K in a magnetic field larger than $H_k/2$. Then a current of about 15 % of the critical value was sent through the sample. From all these tests the conclusion can be drawn that the

Card 1/2

On the Problem Concerning the Reality of a Nonstationary Model of "Intermediate" States

kind of structural formation proposed by Gorter was not observed. There is 1 figure.

ASSOCIATION: Institute for Physical Problems AN USSR
Institut fizicheskikh problem Akademii nauk SSSR)

SUBMITTED: July 19, 1957

AVAILABLE: Library of Congress

SOV-120-58-1-43/43

AUTHOR: Shal'nikov, A. I.

TITLE: A Device for Winding Thin Spirals (Prisposobleniye dlya navivki tonkikh spiraley)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, p 147 (USSR)

ABSTRACT: It is often necessary to prepare spirals of thin wire. In industry a special machine is used to do this. In laboratory practice it is convenient to use a simple device consisting of 2 connected "selsyns". A thin core on which the wire is wound is stretched between the axes of the "selsyns". By turning the rotor of one of the "selsyns" it is easy to wind any wire on the core having a length of up to 50 cm and a diameter up to 0.1 mm. Instead of the "selsyns" one can also use Warren's motors.

ASSOCIATION: Institut fizicheskikh problem AN SSSR (Institute of Physical Problems, Academy of Sciences, USSR)

SUBMITTED: July 9, 1957.

1. Wire winding machines--Design 2. Synchros--Applications

Card 1/1
USCOMM-DC-55965

SOV/120-58-4-27/30

AUTHORS: Vasil'yev, D.I. and Shal'nikov, A.I.

TITLE: An Instrument for Continuous Analysis of Ortho-Para-Mixtures of Hydrogen and of Deuterium (Pribor dlya nepreryvnogo analiza smesey orto-para-vodoroda i deuteriya)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 4, p 106 (USSR)

ABSTRACT: A specially designed, highly sensitive, thermal gas analyzer has been produced for continuous analysis of ortho-para-mixtures. Platinum wires are used as the sensitive element and the analyzer must be thermostated to ±0.1°C. The sensitivity of the analyzer is 1 mV per 1% para-hydrogen at -77.8°C and full bridge current of 180 ma; 1.44 mV per 1% of ortho-deuterium at -195°C and the same bridge current. When the bridge current is 200 mA, the sensitivity is 1.93 mV per 1% of ortho-deuterium at -185°C. There is 1 figure, no references.

ASSOCIATION: Institut fizicheskikh problem AN SSSR (Institute for Physical Problems of the Academy of Sciences, USSR)

SUBMITTED: October 16, 1957.

Card 1/1

SOV/56-35-2-60/60

7(7)
AUTHOR: Shal'nikov, A. I.

TITLE: On a Method for the Observation of Helium-II Films (Ob odnom metode nablyudeniya plenok geliya II)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki 1958, Vol 35 Nr 2(8), pp 558-558 (USSR)

ABSTRACT: A simple method was used for the observation of helium-II films and for the investigation of their properties. This method uses the absorption (in the film) of those electrons which were removed by means of light from the surface on which the film is formed. With this method it is possible to investigate the forming of the film in various temperature and pressure intervals. The photoelectric current which characterized the state of the film was measured by means of an electrometric amplifier with feedback. This amplifier has a recording device at its output and this makes it possible in some cases, to investigate also the kinetics of the processes. The author thanks D. I. Vasil'yev for his help in carrying out the experiments.

Card 1/2

Inst. of Physical Problems, AS USSR

SOV/120-59-1-45/50

AUTHORS: Smolyankin, V. T., Shal'nikov, A. I.

TITLE: An Apparatus for Obtaining Mixtures of Ortho- and Para-Modifications of Deuterium (Polucheniye smesey orto- i para-modifikatsiy deuteriya)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 1, p 150 (USSR)

ABSTRACT: The apparatus now described may be used to obtain mixtures of the above gases under pressures close to atmospheric. Deuterium is admitted from the container A (Fig 1) through a reducing valve with an attached rubber reservoir or from the container B containing UD_3 (which decomposes on heating). It is then passed through the trap G containing activated charcoal cooled by liquid nitrogen. This trap condenses all impurities other than helium and the purity of gas leaving the trap can reach 10^{-9}%. Purified gas is then passed through a column containing a catalyser and placed in a liquid hydrogen bath. In this part of the apparatus the gas was condensed and collected in the Dewar reservoir E which was provided with a heater by means of which the deuterium converted into the equilibrium concentration could be evaporated. To obtain mixtures with intermediate concentrations the deuterium was passed through the column with the temperature suitably ad-

Card 1/2

SOV/120-59-1-45/50

An Apparatus for Obtaining Mixtures of Ortho- and Para- Modifications of Deuterium

justed. Thus, if the temperature of the catalyser was 77°K then the concentration of the ortho-deuterium rose to 68.9% while at room temperature this concentration was 66.7%. To obtain concentrations between 97.8 and 69.8 it was necessary to mix gases containing known concentrations of ortho-deuterium. The analysis of the mixtures was carried out by means of the thermal gas analyzer 3 placed in a liquid nitrogen bath. At liquid nitrogen temperatures the difference in the thermal properties of the two kinds of deuterium is a maximum. There is 1 figure and there are 3 Soviet references.

SUBMITTED: January 22, 1958.

Card 2/2

SOV/56-37-2-11/56

24(8), 24(3)

AUTHORS: Ginzburg, N. I., Shal'nikov, A. I.

TITLE: On the Problem of the Destruction of the Superconductivity of Thin Films by a Field and by a Current

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 2(8), pp 399-405 (USSR)

ABSTRACT: The authors investigated the rules governing the destruction of superconductivity in thin tin films (purity 99.998 %) with respect to an experimental verification of the Ginzburg-Landau theory. For this purpose they used cylindrical films of various thicknesses; the length of the cylinders was large compared to their diameter. (Such investigations were carried out without any special success on disk-shaped samples by Alekseyevskiy and Mikheyeva (Ref 1); cylindrical samples were investigated by Shal'nikov together with Feygin, and as results were satisfactory, the method was improved.) Carrying out the experiments is described in great detail (cf. Figs 1,2). Figures 3a and b show the results of a simultaneous measurement of the critical currents and fields of a series of films, figures 4 and 5 show the dependence of the critical field strengths on actual film

Card 1/3

On the Problem of the Destruction of the Superconductivity of Thin Films by a Field and by a Current

thickness at various distances to the critical temperature ΔT (for $\Delta T \leq 0.3^{\circ}$). Figure 6 shows the dependence of the critical field of the current H_{kI} on ΔT, and figure 6 the dependence of the critical field strength H_k on T. The ratio $H_k K_{kI} / \frac{\delta}{5} H_{km}^2$, which, according to Ginzburg, ought to be constant and equal to unity, was determined as amounting to $\leq 0.22 \pm 0.03$, the penetration depths as $\delta_{oo}^{H} = 1.9 \pm 0.3 \cdot 10^{-5}$ cm and $\delta_{oo}^{I} = 9.3 \pm 1.5 \cdot 10^{-5}$ cm, which considerably exceeds the value for massive tin of $\delta_{oo} = 5 \cdot 10^{-6}$ cm. The endeavor is made to explain the deviation of the value found for $H_k H_{kI} / \frac{\delta}{5} H_{km}^2$, as well as the deviation of the value of δ_{oo}^{H} (which differs by three times its amount from that found by Zavaritskiy (Ref 6)). Finally, experimental problems concerning film structure are discussed. The authors thank V. L. Ginzburg for his interest and valuable advice, D. I. Vasil'yev for his assistance in carrying out the experi-

On the Problem of the Destruction of the Superconductivity of Thin Films by a Field and by a Current

ments, and also I. S. Shapiro and I. A. Antonova. There are 8 figures and 6 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 18, 1959

82005 S/120/60/000/03/048/055
E073/E535

24.2140

AUTHORS: Fradkov, A.B. and Shal'nikov, A.I.

TITLE: Level Indicator for Metallic Liquid Helium Containers

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 3, p 148

ABSTRACT: The level indicator operates by utilising the property of tantalum to become superconductive at a temperature only fractions of a degree higher than the boiling temperature of liquid helium at atmospheric pressure. The device consists of a tantalum sensing coil and (in the case of a metallic vessel) a constantan heater which can be pushed into the vessel with a long stainless steel tube. The main feature of the tantalum sensing coil is that at the instant of contact with the liquid helium the tantalum becomes superconductive and the voltage at the coil terminals drops to zero. This instrument operates satisfactorily in transparent or partly transparent vessels in which the temperature gradient is sufficiently pronounced at the surface of the liquid helium. However, in metallic vessels this

Card 1/2 gradient is too small. In order to determine reliably

ZAVARITSKIY, N.V.; SHAL'NIKOV, A.I.

Making miniature carbon resistance thermometers for low temperatures. Prib. i tekh. eksp. 6 no.1:189-191 Ja-F '61. (MIRA 14:9)

1. Institut fizicheskikh problem AN SSSR.
(Thermometers)

SHAL'NIKOV, A.I.

Some observations on the solidification of helium. Zhur.eksp.i teor.fiz. 41 no.4:1056-1058 O '61. (MIRA 14:10)

1. Institut fizicheskikh problem AN SSSR.
(Helium)

28923

S/056/61/041/004/007/019
B108/B102

24,7700

AUTHOR: Shal'nikov, A. I.

TITLE. Motion of charges in liquid and in solid helium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 4(10), 1961, 1059-1063

TEXT: The author studied weak electric currents in liquid and solid helium, using the apparatus shown in Fig. 1. The central part of the apparatus consists of glass, which makes it possible to observe the solidification of helium. A capillary tube at the upper end of the apparatus leads to a gasifier from which pressures up to 100 atm can be supplied. The current of the 5.7-kev electrons emitted from a 4 mm wide molybdenum disk with a titanium tritide layer was measured with an electrometer. The temperature range 4.2 - 1.3°K was investigated. Conclusions: The current in solid helium is chiefly determined by the type of crystal. Its amperage is nearly the same as in liquid helium. In solid He^3, the current drops considerably when pressure is raised. The

Card 1/3

current in solid helium is conducted by positive and negative carriers. Since this is the case in liquid helium, too, it was not possible to detect any difference in the structures of carriers in liquid and solid helium. In addition to structural carriers, which are common for solid and liquid helium, the latter has also impurity carriers. Rise in density of liquid helium reduces the carrier mobility. Other carriers, e. g., electrons and holes, which are obviously responsible for conduction in helium crystals, may also participate in the conduction mechanism in liquid helium. D. I. Vasil'yev is thanked for assistance in the measurements. There are 6 figures and 9 references: 2 Soviet and 6 non-Soviet. The two most recent references to English-language publications read as follows: K. R. Atkins. Phys. Rev., 116, 1339, 1959; L. Meyer, R. Reif, Phys. Rev. Lett., 5, 1, 1960 and Phys. Rev., 119, 1164, 1960.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physical Problems of the Academy of Sciences USSR)

SUBMITTED: May 18, 1961

Card 2/3

KANDEL', E.I., kand.med.nauk; KUKIN, A.V.; SHAL'NIKOV, A.I.; SHIK, M.L., kand.med.nauk (Moskva)

Improvement in the method of local freezing of the subcortical structures in stereotactic operations on the brain. Vop.neiro-khir. no.4:51-54 '62. (MIRA 15:9)

1. Chlen-korrespondent AN SSSR (for Shal'nikov).
(BRAIN--SURGERY) (REFRIGERATION ANESTHESIA)

SHAL'NIKOV, A.I.; SHCHEGOLEV, I.F.

Temperature (to be continued). Priroda 52 no.4:11-18 '63.
(MIRA 16:4)

1. Institut fizicheskikh problem im. S.I.Vavilova AN SSSR, Moskva.

(Temperature)

SHAL'NIKOV, Aleksandr Iosifovich; SHCHEGOLEV, Igor' Fomich, kand. fiziko-matem. nauk; FAYNBOYM, I.B., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[Temperature and matter] Temperatura i veshchestvo. Moskva, Izd-vo "Znanie," 1963. 28 p. (Novoe v zhizni, nauke, tekhnike. IX Seriia: Fizika i khimiia, no.9) (MIRA 16:5)

1. Chlen-korrespondent Akademii nauk SSSR (for Shal'nikov). (Temperature) (Matter--Properties)

SHAL'NIKOV, A.I.; SHCHEGOLEV, I.F.

Temperature (conclusion). Priroda 51[i.e.52] no.5:13-21 '63.
(MIRA 16:6)

1. Institut fizicheskikh problem AN SSSR, Moskva.
(Temperature)

SHAL'NIKOV, A.I.

Appliance for localized refrigeration. Prib. i tekh. eksp. 8 no.3:205-206 My-Je '63. (MIRA 16:9)

1. Institut fizicheskikh problem AN SSSR.
(Surgical instruments and apparatus)

[illegible], A.M.; [illegible], N.I.

Preparation of thin titanium-deuterium and titanium-tritium targets. Prib. i tekh. eksp. 8 no.6:169-170 N-D '63.
(MIRA 17:6)

L 14049-65 EWT(l)/EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWG(v)/EPR/EPA(w)-2/
EWF(j)/T/EWP(t)/EPA(bb)-2/EWP(b) Pc-4/Pa-10/Pe-5/Pq-4/Pr-4/Ps-4/Pt-10/Pu-4
ACCESSION NR: AP4044687 SSD/AEDC(b)/AEDC(a)/AFWL/ S/0120/64/000/004/0155/0156
AFTC(p) JD/WW/GG/RM/WH

AUTHOR: Gerasimov, L. L.; Danilova, N. P.; Shal'nikov, A. I.

TITLE: Ultrahigh vacuum in unheated equipment

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 155-156

TOPIC TAGS: ultrahigh vacuum, ionization gage, magnetic ionization gage

ABSTRACT: In connection with the study of the sorptive properties of aluminum oxide shields, a series of experiments was carried out to obtain an ultrahigh vacuum (of the order of 10^{-12} tor) by means of low temperatures in unheated equipment having nitrogen and helium copper traps equipped with shields. A VIM magnetic ionization gage was placed in the helium shield, and its permanent magnet was fixed on the nitrogen shield. The aluminum oxide screen (0.05 x 100 x 300mm) under study was clamped to the interior of the helium shield. A 6000-v wire and an electrometric wire were connected to the gage through plastic and quartz insulating tubes placed through slots in the helium and nitrogen shields. The total time of pumping out and cooling of both traps to nitrogen temperature was usually about 3 hr, following which the vacuum obtained was $(4-6)10^{-7}$ tor according to the LM-2 ionization gage and 4×10^{-8} tor according to the VIM. Considerable in-

Card 1/2

L 14049-65
ACCESSION NR: AP4044687

crease in the ionization gage ion current was observed during the gradual cooling of the helium trap. A gradual but sharp decrease in ion current (down to 10^{-13} amp) was observed only when the helium trap was cooled to the point that it started to accumulate liquid helium.

ASSOCIATION: Fizicheskiy fakul'tet MGU (Physics Department, MGU)

SUBMITTED: 30Jul63 ENCL: 00 SUB CODE: EC

NO REF SOV: 002 OTHER: 000

Card 2/2

L 14511-65 EWT(d)/EWT(l)/EWT(m)/EPF(c)/EEC(k)-2/EPF(n)-2/EPR/T/EWP(t)/EWG(c)/
EWP(b) Pr-4/Pu-4 IJP(c)/AFWL/SSD/ASD(a)-5/AS(mp)-2/ESD(gs) JD/WW

ACCESSION NR: AP5000321 S/0056/64/047/005/1727/1732

AUTHOR: Shal'nikov, A. I.

TITLE: Motion of charges in solid helium

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 5, 1964, 1727-1732

TOPIC TAGS: helium, low temperature research, carrier mobility, crystal lattice structure

ABSTRACT: The temperature dependence of the current produced by β radiation in helium crystals grown at pressures 25.3--154 atm was measured. This investigation repeats an earlier one by the author (ZhETF v. 41, 1059, 1961), but employs a greatly improved procedure for obtaining solid helium, in which single crystals can be obtained with minimum defects and minimum internal stresses. The experimental setup is illustrated in Fig. 1 of the enclosure. The solid helium

Card 1/4

crystals were grown in an ampoule which was cooled by pumping on He^4 or He^3 vapor. The β source was a titanium-tritium target fastened on one of the electrodes of the ampoule, and produced $\sim 6 \times 10^7$ electrons per second. The electrometer used was sensitive to $\sim 10^{-14}$ A. More appreciable change in current occurred when the helium solidified, indicating that the transport of the bulk of the electric charges has the same mechanism in liquid and solid states. This confirms the results of the earlier investigation, that the charges moving in liquid and solid helium are almost exclusively electrons and holes, to which are added in the liquid case the charges connected with the unavoidable presence of solid contamination. In helium crystals (which are apparently close to ideal), the hole mobility is much larger than the electron mobility, and the exponential character of the temperature variation of the current indicates that the charge transport is governed by activation processes. "I thank P. L. Kapitsa for interest, D. I. Vasil'yev for preparing the instrument and helping with the measurements, and L. P.

L 14511-65

ACCESSION NR: AP5000321

4

Mezhov-Deglin, B. M. Gokhberg, and L. V. Keldy*sh for interest in the work and a valuable discussion." Orig. art. has: 6 figures.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physics Problems, Academy of Sciences SSSR)

SUBMITTED: 17Jun64 ENCL: 01

SUB CODE: EM, SS NR REF SOV: 002 OTHER: 001

Card 3/4

L 14511-65
ACCESSION NR: AP5000321

ENCLOSURE: 01

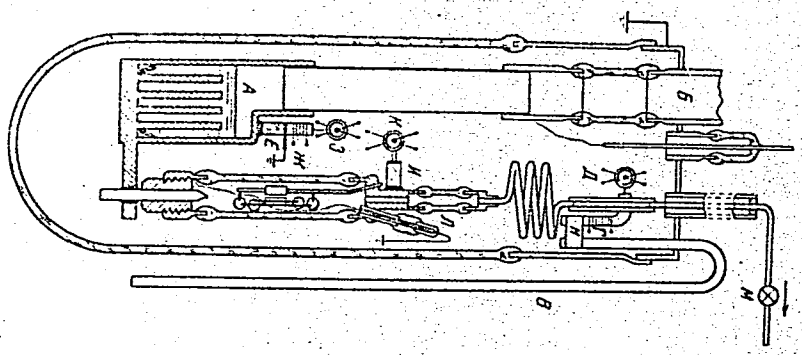


Fig. 1. Experimental setup: А - Reservoir, Б - pipe, В - cold finger, Г - heater, Д - thermometer, Е - quartz cylinder, Ж - heater З - thermometer

Card 4/4

ACC NR: AP7001964 (N) SOURCE CODE: UR/0120/66/000/006/0204/0206

AUTHOR: Bayeva, N. N.; Danilova, N. P.; Shal'nikov, A. I.

ORG: Physics Department MGU (Fizicheskiy fakultet MGU)

TITLE: Cryogenic ultrahigh-vacuum pump

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1966, 204-206

TOPIC TAGS: vacuum pump, ultrahigh vacuum pump, cryogenic vacuum pump

ABSTRACT: A simplified version of a cryogenic ultrahigh-vacuum pump has been designed, built, and tested. The pump can evacuate the working chamber to a pressure below 10^{-6} torr. Backstreaming at a rate of about 0.01 mm^3/sec was found to have no effect on the pump performance. With a total capacity of about 25ℓ, introduction of 0.03 cm^3 of gaseous helium did not increase the chamber pressure above 10^{-6} torr. Apparently most of the helium was absorbed by the walls cooled by liquid helium. Orig. art. has: 1 figure.

SUB CODE: 14 20/ SUBM DATE: 01Dec65/ ORIG REF: 002/ ATD PRESS: 5112

Card 1/1 UDC: 621.528.4

[illegible], L. [illegible].

"Compensating Cathode-Ray Voltmeter for High Voltage." Cand Tech Sci, All-Union Sci Res Inst of Metrology, Leningrad, 1954. (RZhFiz, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

[illegible]NIKOV, G.I., kandidat tekhnicheskikh nauk.

Using piezoelectric strain gauges having barium titanate cells in measuring variable pressures. Sbor.trud.VNIIStroidormash Gosstroi. no.1:79-87 '57. (MIRA 11:3)
(Strain gauges) (Piezoelectricity)

57-6-31/36

AUTHOR: SHAL'NIKOV,G.I.

TITLE: Compensation Electron Beam High Voltage Voltmeter. (Kompensatsionnyy elektronnoluchevoy voltmetr vysokogo napryazheniya, Russian)

PERIODICAL: Zhurnal Tekhn.Fiz. 1957, Vol 27, Nr 6, pp 1371-1378 (U.S.S.R.)

ABSTRACT: A new measuring method of high constant voltage by means of an electron beam compensation voltmeter of high voltage is described, and a theoretical explanation is given. As a result of the experimental investigation it is shown that the utmost measuring error of constant voltages within the range of up to 30 000 V does not amount to more than 0,75% if this method is used. Examination of the device with alternating current of high voltage with a frequency of from 50 to 8000 c showed that with the help of this device it is possible to measure voltages of the aforementioned frequency range for frequencies that are either symmetric or asymmetric with respect to the earth. Foreign electric and magnetic fields with a voltage of less than 0,75 Oersted exercise no influence on its recordings. It is shown that with this voltmeter direct reading (for laboratory and technical purposes) is possible with a maximum

Card 1/2

SHALIMIKOV, G. I.

9(6) PHASE I BOOK EXPLOITATION SOV/2557

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti.
Leningradskoye oblastnoye pravleniye

Provolochnaya tenzometriya (Theory and Application of Wire Strain Gages) Moscow, Mashgiz, 1959. 138 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy, Vyp. 51) 3,500 copies printed.

Sponsoring Agency: Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti.

Ed.: A.M. Turichin; Ed. of Publishing House: M.A. Chfas; Tech. Ed.: L.V. Shchetinina; Managing Ed. for Literature on the Technology of Machine Building (Leningrad Division, Mashgiz): Ye.P. Naumov.

PURPOSE: This collection of papers is intended for engineers, scientific workers, and technicians making calculations for strength in machinery.

COVERAGE: This is a third issue of the collection of scientific papers presented at the Leningrad Scientific and Technical Conference on the Theory and Use of Wire Strain Gages, held in May 1958. The papers describe the use of instruments with wire strain gages to investigate different parameters of machine parts and mechanisms during operation. No personalities are mentioned. References follow several of the papers.

AVAILABLE: Library of Congress

SHAL'NIKOV, G.I.

Using vibration-test rods with wire transducers in measuring the amplitude and frequency of vibrations of small surfaces. [Izd.] LONITOMASH 51:50-54 '59. (MIRA 12:12)
(Vibration--Measurement)

DMITRIYEVSKIY, N.V., inzh.; LESOKHINA, G.M., inzh.; SHAL'NIKOV, G.I., kand.tekhn.nauk

Introducing automatic processes in stone-crushing plants. Stroi. i dor. mashinostr. 5 no.8:8-13 Ag '60. (MIRA 13:8)
(Sand and gravel plants) (Automation)

OKUN', Yevsey L'vovich; KALANTAROV, M.N., retsenzent; STREL'NIKOV, N.T., retsenzent; SHAL'NIKOV, G.I., nauchn. red.; NIKITINA, M.I., red.; KLIMINA, Ye.V., red.; SACHUK, N.A., red.; KVOCHKINA, G.P., red.

[Radio transmitting devices] Radioperedaiushchie ustroistva. Izd.2., perer. i dop. Leningrad, Sudostroenie, 1964. 539 p. (MIRA 17:5)

Shal'nikova N.A.

X-ray determination of the crystal lattice constants and the coefficients of thermal expansion of leucosapphire and ruby. N. A. Shal'nikova and I. A. Yakovlev (M. V. Lomonosov State Univ., Moscow). *Kristallografiya* 1, 531–3 (1956).—The unit-cell dimensions of pure α-Al_2O_3 were (in kX units) $a(t) = 4.7474 + 2.8 \times 10^{-5}t + 9.7 \times 10^{-9}t^2$ and $c(t) = 12.9554 + 8.0 \times 10^{-5}t + 2.3 \times 10^{-8}t^2$, at $t°$. The cell dimensions increased almost linearly with the percentage of Cr_2O_3 added. With 48.7% Cr_2O_3 $a = 4.8305$ and $c = 13.198$ kX. At 500° the expansion coeffs. were, for α-Al_2O_3, 7.1×10^{-6} and 7.2×10^{-6} and for α-Al_2O_3 + 9.6% Cr_2O_3, 7.0×10^{-6} and 8.2×10^{-6}, perpendicular and parallel, resp., to the c-axis. A. L. Mackay

2

RUDASHEVSKIY, Ye.G.; SHAL'NIKOVA, T.A.

Antiferromagnetic resonance in hematite. Zhur. eksp. i teor. fiz. 47 no.3:886-891 S '64. (MIRA 17:11)

1. Institut fizicheskikh problem AN SSSR.

L 1195-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(b)/EWP(t) Pr-4/Ps-4 ASD(a)-5/AFWL/
AS(mp)-2/SSD/RAEM(a)/ESD(gs)/ESD(t) JD
ACCESSION NR: AP4046403 S/0056/64/047/003/0886/0891

AUTHORS: Rudashevskiy, Ye. G.; Shal'nikova, T. A.

TITLE: Antiferromagnetic resonance in hematite B

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 3, 1964, 886-891

TOPIC TAGS: hematite, single crystal, polycrystal, antiferromagnetism, resonance spectrum 18

ABSTRACT: The hematite investigated was a synthetic single crystal obtained at the Institute of the Physics of Solids of the Czechoslovak Academy of Sciences by Vihr using the method of Remeika. The measurements were made at 12--37 Gc with a magnetic spectrometer with low frequency modulation of the field, similar to that used by Borovik-Romanov et al (ZhETF v. 45, 64, 1963). Parallel measurements were made on natural crystals of hematite from the Elba and

Card 1/3

L 11955-65
ACCESSION NR: AP4046403

Shabry* deposits (SSSR) in the temperature interval 230--290K. The natural crystals displayed a single asymmetric line of approximate width 1500 Oe. The synthetic single crystals revealed a single symmetric line of width 80 Oe at 12.1 Gc and 200 Oe at 34.5 Gc. Some isolated single crystals showed an even narrower absorption line of approximately 60 Oe width at 21.6 Gc. The dependence of the resonance frequency on the external magnetic field, applied in the basal plane, is described at 290K by the formula $(\nu/\gamma)^2 = H(H + H_D) + H_\Delta^2$ (ν -- frequency, γ -- gyromagnetic ratio, H_D -- Dzyaloshinskiy field, H_Δ -- energy gap, which is independent of the direction of the applied field). It is suggested that the term H_Δ^2 is due to the spontaneous strain of the antiferromagnet. Hexagonal anisotropy of the position of the antiferromagnetic resonance line is observed below 270K and increases with decreasing temperature. The appearance of this anisotropy is attributed to the turning of the spins

Card 2/3

L 11965-65
ACCESSION NR: AP4046403

out of the basal plane. "The authors thank P. L. Kapitsa for continuous interest and A. S. Borovik-Romanov, J. Kaczer, Zdenek Frait, and I. Ye. Dzyaloshinskiy for valuable advice and discussion." Orig. art. has: 6 figures and 1 formula.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physics Problems, Academy of Sciences SSSR)

SUBMITTED: 17Apr64 ENCL: 00

SUB CODE: SS, EM NR REF SOV: 006 OTHER: 010

Oxide

Card 3/3

L 59569-65 EWT(1)/EPA(s)-2/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) Pt-7 IJP(c)
ACCESSION NR: AT5009441 JD/GG CZ/0000/64/000/000/0084/0086

45
38
B+1

AUTHOR: Rudashevski, E. G.; Shalnikova, T. A.

TITLE: Antiferromagnetic resonance in hematite

SOURCE: Conference on Low Temperature Physics and Techniques. 3d, Prague, 1963. Physics and techniques of low temperatures; proceedings of the conference. Prague, Publ. House of the Czechosl. Academy of Sciences, 1964, 84-86

TOPIC TAGS: antiferromagnetic resonance, hematite, single crystal, hexagonal anisotropy, field dependence, spin rotation

ABSTRACT: The authors studied antiferromagnetic resonance in natural hematite crystals from deposits on Elba Island and in Shabry (SSSR), and in synthetic single crystals produced by M. Vychr by the Remeika method in the Institute of Solid State Physics of the Czechoslovak Academy of Sciences. The antiferromagnetic resonance was studied in detail in the frequency range 12--37 Gc and in the temperature interval 230--290K. The dependence of the resonance frequency on the external magnetic field, applied in the basal plane, is described at 290K by a formula $(\nu/\gamma)^2 = H(H + H_D) + H_2$ where H_D is the Dzyaloshinskiy field and H_2 is the term expressing the anisotropy in the basal plane. The measurements were made with a magnetic spectrometer analogous to that used by A. S. Borovik-Romanov et al. (ZhETF v. 45

Card 1/2

L 59569-65

ACCESSION NR: AT5009441 7

(1963) 64). When the temperature was reduced from 300 to 243K with the static magnetic field parallel to the basal plane and the high-frequency field perpendicular to it, a great decrease in the absorption was observed, without a change in the width or shape of the line. The antiferromagnetic resonance signal disappeared at 240K. A hexagonal anisotropy of the position of the antiferromagnetic resonance line was discovered at low temperatures and found to increase with decreasing temperature. The appearance of anisotropy is attributed to the rotation of the spins out of the basal plane. "The authors thank P. L. Kapitsa for continuous interest in the work and A. S. Borovik-Romanov, J. Kaczer, and Z. Frait for valuable advice and discussions." Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: Institute for Physical Problems, Acad. Sci. SSSR, Moscow /Rudashevski/; Institute of Physics, Czechosl. Acad. Sci., Prague /Shalnikova/

SUBMITTED: 0000064 ENCL: 00 SUB CODE: SS, EM

NR REF SOV: 005 OTHER: 004

Iron Oxide 27

Card 2/2

SHARBABCHEV, S.; SHAL'NOV, A., kand.tekhn.nauk; PANASYUK, T., inzh.

Equipment for taking up pavement. Stroi. truboprov. 7 no.10:22-23 O '62. (MIRA 15:11)

1. Zamestitel' upravlyayushchego trestom Inzhstroy, Tbilisi (for Sharbabchev).
(Road machinery) (Gas distribution)

RUSETSKIY, Boris Leont'yevich; SHAL'NOV, Aleksey Ivanovich; EPSHTEYN, B.S., inzh., red.; SHILLING, V.A., red.izd-va; GVIRTS, V.L., tekhn. red.

[Mechanized continuous line for manufacturing C-type band cores] Mekhanizirovannaia potochnaia liniia izgotovleniia lentochnykh S-obraznykh serdechnikov. Leningrad, 1961. 14 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Pribory i elementy avtomatiki, no.2) (MIRA 14:7)
(Cores (Electricity))

KARPOV, V.V., kandidat tekhnicheskikh nauk; SHAL'NOV, A.P., redaktor; IOSELEVICH, L.Ye., redaktor; KONYASHINA, A.D., tekhnicheskiy redaktor.

[Laying gas pipes] Stroitel'nye raboty pri prokladke gazoprovodov. Izd. 2-e, Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR, 1954. 142 p. (MLRA 8:1)
(Gas pipes)

SHAL'NOV, A.P., inzhener.

Arched bridge for gas pipelines. Gor.khoz.Mosk.29 no.1:39 J '55.
(Gas pipes) (MLRA 8:3)

Shal'nov, A. P. "Investigation of methods of laying underground gas lines under urban conditions." Executive Committee, Moscow City Soviet of Workers' Deputies. Moscow Inst of Municipal Construction Engineers of the Moscow City Executive Committee. Moscow, 1950. (Dissertation for the Degree of Candidate in Technical Science)

So: Knizhnaya Letopis', No. 27, 1950. Moscow. Pages 94-119; 111.

AUTHOR: Shal'nov, A. P., Candidate of Technical Sciences 95-11-10/14
(Moscow)

TITLE: For Wider Application of Aerial Gas Pipelines (Shire primenyat' vozdushnyye perekhody gazoprovodov)

PERIODICAL: Stroitel'stvo Predpriyatiy Neftyanoy Promyshlennosti, 1957, Vol. -, Nr 11, pp. 23-25 (USSR)

ABSTRACT: The construction of gas pipelines in towns still presents many difficulties and does not meet the demands made by industrialized building.
Pipelines passing through cities are constructed mainly according to three different systems: a) the pipelines lead along already existing bridges, b) special bridges are constructed for this purpose, and c), and this is frequently the case, by means of sluice pipes, which are being widely used and are characterized by a serious disadvantage: they are absolutely out of reach for the butt-joints of the gas pipeline during balancing.
At present the latest method of loying gas pipelines on the ground is that by means of special connecting sockets. These sockets are fitted with rubber seals and are mounted at the butt joints of the pipeline sections where they have the function of a compensator when the pipeline is extended while the ground is being lowered - Gas pipeline girder systems are most useful for

Card 1/3

For Wider Application of Aerial Gas Pipelines 95-11-10/14

These bridges are very easily balanced, and their value is lower by about 2/3 than that of sluice pipes.
Arch bridges may be used not only forthe transportation of gas but also for mineral oil, water, and hot water pipelines.
There are 5 figures and 1 Slavic reference.

AVAILABLE: Library of Congress

Card 3/3

LYAMIN, A.A., inzh.; ZAKHARENKO, S.Ye., inzh.; SHAL'NOV, A.P., kand. tekhn.nauk; YUSHKIN, A.R., inzh.; FILIMONOV, V.A., inzh. OSTAL'TSEV, P.P.

The technical and economic expediency of the simultaneous installation of underground equipment by engineering teams. Gor.khoz.Mosk. 31 no.11:30-35 N '57. (MIRA 10:12)

1.Mosenergoproyekt (for Lyamin). 2.Mosteploset'stroy (for Zakharchenko). 3.Mospodzemproyekt (for Shal'nov, Yushkin, Filimonov, Ostal'tsev)

(Municipal engineering)

SHAL'NOV, A.P., kand.tekhn.nauk; KISELEV, M.F., inzh.

Trenchless laying of reinforced concrete pipes by the forcing-in method. Stroi.truboprov. 3 no.11:21-23 N '58.
(MIRA 11:12)

(Pipelines) (Earthwork)

SHAL'NOV, A.P., kand.tekhn.nauk; KOBISHCHANOV, V.N., inzh., red.

[Combined laying of pipes; practices of the Administration for Building Underground Structures in Moscow] Sovmeshchennaia prokladka truboprovodov; opyt Upravleniia po stroitel'stvu podzemnykh sooruzhenii v Moskve. Moskva, 1959. 20 p.
(MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. Byuro tekhnicheskoy informatsii.
(Moscow--Pipelines)

SHAL'NOV, A., kand.tekhn.nauk

Efficient method for laying underground pipelines. Na stroi. Mosk. 2 no.6:8-11 Je '59. (MIRA 12:8)
(Pipelines)