On the Problem of the Effect of Stress and Deformation on Self-Diffusion

radioactive Ag and Fe isotopes. The method employed entailed measuring not only the intensity of the β-radiation before and after diffusion annealing but also the intensity of the γ-radiation, which being independent of the depth of diffusion indicated the concentration of the radioactive atoms present in the specimen and participating in the diffusion process. The results obtained showed conclusively that applied stress and deformation have no effect on self-diffusion in metals. Regarding silver, this conclusion was in agreement with the findings of other workers (Ref. 15). In the case, however, of steel it has been reported previously (Refs. 4 and 5) that deformation considerably accelerates the rate of self-diffusion in this material. To find the explanation for this discrepancy, the author, using his experimental data, calculated the values of D for unstressed and stressed steel specimens with the aid of both the method employed in the present investigation and that used by the writers referred to above, who had based their calculations on the intensities of the β-radiation alone. Whereas D, calculated by the former

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E193/E483

On the Problem of the Effect of Stress and Deformation on Self-Diffusion

method, was the same for stressed and unstressed material, a large increase in D was obtained for the stressed specimens when the latter method was used. It was inferred hence that a certain proportion of radioactive atoms may be lost during the diffusion annealing and that if erroneous results are to be avoided, the difference between both β- and γ-radiation before and after diffusion treatment should be taken into account in the calculation of D. There are 4 figures, 3 tables and 19 references: 8 Soviet and 11 English.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR
(Physico-Technical Institute AS USSR)

SUBMITTED: February 17, 1960

Card 3/3

84865

53700 only 2209, 1273

S/079/60/030/010/001/030
B001/B075

AUTHOR: Savitskiy, A. V.

TITLE: Solvation of the Ferricinium Ion

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 10, pp. 3167-3171

TEXT: In a previous paper (Ref. 1) on the oxidation of ferrocene by means of iodine, the author came to the conclusion that the solvation energy of the ferricinium ion reaches a considerably high value. To check this assumption, he studied the equilibrium $Fn + (3/2)I_2 = Fn^+ + I_3^-$ in ethanol between 15° and 45°C. ($Fn = (C_5H_5)_2Fe$). The solvation energy of the ferricinium ion was calculated according to the corresponding cyclic process and from the heat effect of this reaction. The experiments were carried out at ferrocene concentrations between $2.5 \cdot 10^{-4}$ and 10^{-3} moles/l and at iodine concentrations between 10^{-3} and $1.2 \cdot 10^{-2}$ moles/l. The spectrum of the solution within the absorption range of the ferricinium ion (580 - 660 mμ) was recorded by an СФ2М(SF2M) spectrophotometer. As

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the ionic strength of the solution did not exceed 10^{-3} moles/l, the activity coefficients of Fn and I could be equated to unity, and the activity coefficients of the ions were calculated according to Debye. Assuming that there are no side reactions, and that the solution follows the Lambert-Beer law, the following equation is written down for the optical density D_∞ and the initial concentrations $[Fn]_o$ and $[I]_o$:
$[Fn]_o(D_\infty - D_o)^{-1} = \Delta\varepsilon^{-1} + K^{-1}\Delta\varepsilon^{-2}\gamma^2(D_\infty - D_o)[I_2]^{-3/2}$, where $D_o = \varepsilon_{Fn}[Fn]_o + \varepsilon_{I_2}[I_2]_o$; $\Delta\varepsilon = \varepsilon_{Fn} + \varepsilon_{I_3^-} - \varepsilon_{Fn} - (3/2)\varepsilon_{I_2}$; K denotes the equilibrium constant, γ - the activity coefficient of the monovalent ion, ε - the absorption coefficient of the molecule and the ion, respectively, $[I_2]$ - the iodine concentration in equilibrium, which is little different from $[I_2]_o$ if iodine is in excess. A linear relationship between $[Fn]_o(D_\infty - D_o)^{-1}$ and $\gamma^2(D_\infty - D_o)[I_2]^{-1/2}$ (Fig.) follows from this equation. The values for γ and $[I_2]$ were found by successive approximations. The values of K and $\Delta\varepsilon$ determined by the method of least squares are given in

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Solvation of the Ferricinium Ion

S/079/60/030/010/001/030
B001/B075

Table 1. Herefrom it was found that ΔH° equals -5.5 kcal/moles and ΔS° equals -16 e.u. (Table 2). The absorption coefficient of the ferricinium ion for various wavelengths was calculated from $\Delta\varepsilon$ (Table 3). The sum $L_{Fn} + L_{I^-}$ of solvation energy was found to be equal to 129 kcal/moles. In Table 4, this value is compared to the sums $L_{M^+} + L_{I^-}$ for other M^+ cations: Li^+ = 199, Na^+ = 170, K^+ = 162, Rb^+ = 147, Cs^+ = 137, $(CH_3)_4N^+$ = 100, $(C_2H_5)_2N^+$ = 90 kcal/moles. The author mentions an information by O. M. Gayssinskaya and V. A. Sokolov, and thanks Ye. K. Syrkin for supervising the present work. There are 1 figure, 4 tables, and 10 references: 2 Soviet, 5 US, 2 British, and 1 German.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii
(Moscow Institute of Fine Chemical Technology)

SUBMITTED: December 7, 1959

Card 3/3

SAVITSKIY, A. V.

Cand Chem Sci - (diss) "Mechanism and thermodynamics of the oxidation of ferrocene and ruthenocene by iodine." Moscow, 1961. 14 pp; (Academy of Sciences USSR, Inst of General and Inorganic Chemistry imeni N. S. Kurnakov); 200 copies; price not given; (KL, 6-61 sup, 199)

S/081/62/000/001/005/067
B156/B101

AUTHORS: Savitskiy, A. V., Syrkin, Ya. K.

TITLE: Mechanism and thermodynamics of the oxidation of ferrocene and ruthenocene by iodine

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1962, 62, abstract 1B450 (Tr. po khimii i khim. tekhnol. (Gor'kiy, no. 1, 1961, 165-170)

TEXT: The kinetics and thermodynamics of the oxidation of ferrocene (F) and ruthenocene (R) in C_6H_6 and C_2H_5OH by iodine have been studied by spectrophotometry at various temperatures. It is shown that during the reaction, tri- and pentaiodides of ions of F and R are formed in C_6H_6. The ionization potentials of F and R are assessed (~6 ev). The authors consider that the cation of ruthenocene is thermodynamically more stable than the cation of ferrocene (Fm). The reaction is 1st order with respect to F and 2nd order with respect to iodine. The following were determined for the limiting

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Mechanism and thermodynamics ...

stage: F° = 16 kcal/mole, ΔH° = 6.5 kcal/mole, ΔS° = -32 entropy units. Evidently the iodine atom formed in the reaction $F + 2I_2 \rightarrow FI_3 + I$ oxidizes the second molecule of F by a reaction with a low activation energy. For the reaction in C_2H_5OH, the heat of solvation of Fm is assessed as 40 - 50 kcal/mole; the rate of the reaction is proportional to the concentration of F to the first power, and to the concentration of I_2 to the power of 3/2. Ion pairs are formed in the C_6H_6 and solvated ions in C_2H_5OH.

[Abstracter's note: Complete translation.]

Card 2/2

SAVITSKIY, A.V.

Solvation of the ferricinium ion. Zhur.ob.khim. 30 no.10:3167-3171 O '61. (MIRA 14:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Ferricinium compounds)

SAVITSKIY, A.V.; SYRKIN, Ya.K.

Quantum yields of iodine photodissociation in solutions.
Dokl. AN SSSR 146 no.3:649-651 S '62. (MIRA 15:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.
M.V.Lomonosova. 2. Chlen-korrespondent AN SSSR (for Syria).
(Iodine) (Photochemistry) (Quantum chemistry)

SAVITSKIY, A.V., otv. red.; ISHUNINA, L.S., red.; LAVRENT'YEVA, L.G., tekhn. red.

[Analysis of the practice of driving horizontal development workings] Analiz opyta provedeniia gorizontal'nykh podgotovitel'nykh vyrabotok; sbornik statei. Moskva, 1962. 39 p. (MIRA 16:9)

1. TSentral'nyy institut tekhnicheskoy informatsii ugol'noy promyshlennosti.

(Mining engineering)

Magnetic properties of semiconductors. K. D. Tovstyuk.

This presentation consisted of the following papers:

Anisotropy of susceptibility of semiconductors. K. D. Tovstyuk, E. I. Slynko, I. M. Stakira, O. M. Boretz.

Magnetic and thermomagnetic properties of HgTe, PbTe, HgSe, PbSe. K. D. Tovstyuk, M. P. Gavaleshko, Ya. S. Budzhak, P. M. Starik, P. I. Voronyuk.

Magnetic susceptibility of CdTe and ZnTe. I. V. Potykevich, A. V. Savitskiy.

Magnetic properties of the system HgTe-CdTe. K. D. Tovstyuk, I. M. Rarenko, I. V. Potykevich.

Anisotropy of the thermal conductivity of CdSb. I. M. Pilat, L. I. Anatychyuk.

Electrical, magnetic, and optical properties of the system In_2Te_3-CdTe. I. V. Potykevich, A. I. Belyayev, S. V. Chepura.

Properties of crystals of CdSb doped with elements of groups IV and VI. S. M. Cubov.

[illegible] based on [illegible] semiconductor [illegible]

ACCESSION NR: AP4009301 S/0126/63/016/006/0886/0890

AUTHOR: Savitskiy, A. V.

TITLE: Evaluating small values of self-diffusion coefficient with the aid of radioactive isotopes

SOURCE: Fizika metallov i metallovedeniye, v. 16, no. 6, 1963, 886-890

TOPIC TAGS: self diffusion coefficient, radioactive isotope, silver, metal diffusion, diffusion temperature relation, diffusion activation energy

ABSTRACT: The article presents a method for calculating the coefficient of self-diffusion for silver. This method was based on the use of radioactive isotopes; it represents an improvement on a previous method which could not be used for calculating very small values of the coefficient. The formula for the mass M of an isotope passing through the metal surface in time t is

$$M = \frac{2}{\sqrt{\pi}} c_0 \sqrt{Dt},$$

The coefficient of diffusion given by this formula was

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ACCESSION NR: AP4009381

$$D = \frac{\pi M^2}{4c_0^2 t}$$

and the quantity of the M isotope was

$$M = \alpha \frac{I}{S}.$$

where I is the sample activity registered by a counter, S is sample surface, alpha is the coefficient of proportionality. The last formula cannot account for the absorption of radioactive radiation within the sample, because at very low values of the diffusion coefficients the depth of isotope penetration is so small that the absorption of the radiation registered is practically impossible. For this reason the author derived the formula

$$\bar{D} = \frac{\pi}{4}\left(\frac{I_1 - I_0}{I_0}\right)^2 \cdot \frac{d^2}{t}.$$

for calculating very small values of the diffusion coefficient. Here d is the thickness of the metal layer in which the atomic "exchange" between the solid and the molten metal occurs. "The author expresses his appreciation to S. N. Zhurkov

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ACCESSION NR: AP4009381

and A. A. Zhukhovitskiy for their interest in this work, for the discussion of the results, and for their valuable remarks." Orig. art. has: 2 tables, 1 figure, and 9 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR (Institute of Physics and Technology AN SSSR)

SUBMITTED: 09May63 DATE ACQ: 03Feb64 ENCL: 00

SUB CODE: ML NO REF SOV: 006 OTHER: 002

Card 3/3

ACCESSION NR: AP4041375 S/0048/64/028/006/1051/1052

AUTHOR: Tovstyuk, K.D.; Savitskiy, A.V.

TITLE: Magnetic susceptibility of ZnTe [Report, Third Conference on Semiconductor Compounds held in Kishinev 16 to 21 Sep 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no6.1964, 1051-1052

TOPIC TAGS: magnetic susceptibility, zinc compound

ABSTRACT: The magnetic susceptibility of ZnTe was measured at temperatures from 293 to 600°K. The material was synthesized by heating the spectroscopically pure elements in evacuated quartz ampoules. The single crystals were grown by the Bridgman technique. X-ray studies showed the crystals to have the sphalerite structure; the hexagonal modification was not found. The samples for measurement were cylinders 20 cm long and 5 or 6 mm in diameter; after being cut and polished, they were etched with aqua regia and the resulting thin film of tellurium was removed with HCl. The susceptibility measurements were performed with a modified Gouy method described by W.G.Henry and J.L.Rogers (Phil.Mag.1,223,1957). The magnetic susceptibility of the single crystals was found to be independent of temperature and equal to -1.98×10^{-6}.

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ACCESSION NR: AP4041375

To investigate the effect of adsorbed gas, the susceptibilities of compressed powder samples were also measured. The susceptibility of these was -0.538×10^{-6} at room temperature and increased linearly with increasing temperature. This behavior is ascribed to adsorbed oxygen. The susceptibility of the single crystal is ascribed to the lattice because of its temperature independence. The lattice susceptibility calculated for ZnTe by Kirkwood's formula is -2.64×10^{-6}. There is accordingly a paramagnetic component of the order of 0.66×10^{-6}; from this it is concluded that the bonding in ZnTe is predominantly covalent. Orig.art.has: 2 figures.

ASSOCIATION: Chernovitskiy gosudarstvenny*y universitet (Chernovits State University)

SUBMITTED: 00 ENCL: 00

SUB CODE: SS, IC NR REF SOV: 004 OTHER: 005

Card 2/2

SAVITSKIY, A.V. [Savyts'kyi, A.V.]; PANKEVICH, Z.V. [Pankevych, Z.V.]

Piezoresistance effect in p-zinc telluride. Ukr. fiz. zhur. 10 no.7:803-804 Jl '65. (MIRA 18:8)

1. Chernovitskiy gosudarstvennyy universitet.

L 24792-65 EWT(m)/EWP(b)/EWP(t) IJP(c) RDW/JD

ACCESSION NR: AP5003466 S/0181/65/007/001/0315/0316

AUTHORS: Savitskiy, A. V.; Pankevich, Z. V.

TITLE: Piezoresistance effect in p-type zinc telluride

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 315-316

TOPIC TAGS: zinc compound, piezoresistivity, valence band, band structure

ABSTRACT: The authors measured the longitudinal and transverse coefficients of piezoresistivity in the [110] direction, at room temperature, in single-crystal samples of p-type ZnTe of stoichiometric composition. The samples were in the form of 12 x 1.5 x 1 mm parallelepipeds. The sample orientation was checked accurate to ±3--4° by an x-ray method. The tension or compression produced in the sample was of the order of 2×10^7 dyne/cm^2. Thin platinum wires were used as probes. The results are listed in Table 1 of

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ACCESSION NR: AP5003466

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the enclosure, and show that the piezoresistivity effect in ZnTe is analogous with that in Ge. The authors attribute this analogy to the similarity in the structure of the valence bands of the two substances. "The authors thank docent K. V. Tovstyuk, under whose guidance the work was performed, for continuous interest." Orig. art. has: 1 table.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: 19Aug64 ENCL: 01 SUB CODE: SS

NR REF SOV: 000 OTHER: 002

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L 24792-65

ACCESSION NR: AP5003466

ENCLOSURE: 01

Table 1. Results of measurement of the piezoresistance coefficients.

Sample No.	Specif. elect. conduct. mho/cm	$\pi_{11a} = \frac{1}{2}(\pi_{11} + \pi_{12} + \pi_{44})$	$\pi_{12a} = \frac{1}{2}(\pi_{11} + \pi_{12} - \pi_{44})$	π_{44}
1	$2 \cdot 10^{-1}$	140 ± 42	6.5 ± 5	133
2	$6 \cdot 10^{-1}$	137 ± 41	—	—
3	$3 \cdot 10^{-1}$	136 ± 41	6.2 ± 5	130
4	$1 \cdot 10^{-2}$	82 ± 25	-3 ± 4	85
5	$1 \cdot 10^{-1}$	124 ± 37	7 ± 6	131
6	$1 \cdot 10^{-1}$	119 ± 36	6 ± 5	125

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L 61848-65 EWT(m)/EWG(v)/EWP(j)/T Pc-4/Pe-5 JAJ/RM

ACCESSION NR: AP5018430 UR/0190/65/007/007/1203/1207 25 24 B
678.01:53

AUTHOR: Zhurkov, S. N.; Novak, I. I.; Levin, B. Ya.; Savitskiy, A. V.; Vettergren', V. I.

TITLE: Relationship between the strength of a polymer and its molecular orientation

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 7, 1965, 1203-1207

TOPIC TAGS: capron fiber, polycaproamide fiber, polymer molecular orientation, polymer property

ABSTRACT: The tensile strength of capron (polycaproamide) fibers was studied as a function of the molecular orientation. The fibers were formed from the melt, then oriented by uniaxial stretching at temperatures from 20 to 200° C. The molecular orientation of the polymer chains was determined from polarized infrared spectra. The orientation factor $\overline{\cos^2\theta}$ of segments in the amorphous and crystalline phases was measured. The correlation observed between the strength of the fiber and the orientation of the molecular chains in the amorphous portions, determined by $\cos^2\theta$, leads to the conclusion that the disordered amorphous regions of the polymer constitute

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ACCESSION NR: AP5018430

weak spots which are responsible for the strength of the fiber. The tensile strength of the fibers is a linear function of the orientation of the segments in the amorphous regions, measured by the factor $\overline{\cos^2\theta}$; the tensile strength is given by the product of the concentration of these segments N by $\overline{\cos^2\theta}$. Values of the structurally sensitive coefficient γ were determined from the tensile strength data, and the relation $\gamma = f(N\,\overline{\cos^2\theta})$ was plotted; it was found that γ varies in accordance with a hyperbolic law and undergoes little change at high degrees of stretching. Orig. art. has: 5 figures and 6 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 03Aug64 ENCL: 00 SUB CODE: MT, OC

NO REF SOV: 008 OTHER: 000

Card 2/2

L 11436-66 EWT(l)/EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(b)/EWA(h) IJP(c) RDW/JD/AT

ACCESSION NR: AP5019862 UR/0181/65/007/008/2437/2443

AUTHOR: Bercha, D. M.; Pankevich, Z. V.; Savitskiy, A. V.; Tovstyuk, K. D.

TITLE: Piezoresistance of Sb_2Te_3

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2437-2443

TOPIC TAGS: antimony telluride, crystal lattice, semiconductor, piezoelectric, group theory, piezoelectric effect

ABSTRACT: In view of the fact that the compound Sb_2Te_3 has been little investigated in the past, and not at all from the point of view of the structure of the energy bands, the authors supplement the group-theoretical analysis with measurements of piezoresistance, for the purpose of establishing some of the distinctive features of the carrier spectrum. The p-type single crystals were obtained by zone refining technique and the measurements were made on plates measuring 15 x 2 x 2 mm cut both parallel and perpendicular to the c-axis (which in turn was perpendicular to the cleavage plane). The sample conductivity at room temperature ranged from 2.6×10^2 to 5×10^3 $ohm^{-1}cm^{-1}$. The measurements were made at temperatures 100--300K. The accuracy was 20—25%. The diagonal components of the piezoresistance tensor were found to be approximately one--two orders of magnitude larger (- 70 x $\times 10^{12}$ $cm^2/dyne$) than the off-diagonal ones (~3 x 10^{12}) and exhibited a slight

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L 1436-66
ACCESSION NR: AP5019862

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temperature dependence. The results are attributed to the complexity of the valence band, the extrema of which are located on the symmetry planes and at the center of the band. The experimental data also help clarify the hitherto confusing situation with respect to the type of space symmetry possessed by the Sb_2Te_3 lattice, since they indicate that the lattice cannot belong to the D^5_{3d} group, thus leaving only C^5_{3v} and D^7_3 as alternatives. Orig. art. has: 4 figures, 7 formulas, and 3 tables. [02]

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University) 44,55

SUBMITTED: 18Jan65 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 007 OTHER: 004 ATD PRESS: 4100

Card 2/2 DP

L 33323-65 EWT(m)/EWG(m)/EWP(t)/EWP(b) IJP(c) RDW/JD

ACCESSION NR: AP5007689 S/0185/65/010/003/0298/0302

AUTHOR: Tovstyuk, K. S.; Savyts'kyy, A. V. (Savitskiy, A. V.)

TITLE: Magnetic susceptibility of zinc telluride

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 3, 1965, 298-302

TOPIC TAGS: crystal magnetic susceptibility, single crystal magnetic susceptibility, crystal lattice susceptibility, Langevin susceptibility, Van Vleck susceptibility

ABSTRACT: An investigation was made of the temperature dependence of the volume magnetic susceptibility of ZnTe single crystals with a composition close to the stoichiometric. The study was made for the temperature range from 293 to 600K. The magnetic susceptibility of ZnTe was found to be independent of temperature in the investigated range and to be equal to 1.98×10^{-6}. It was concluded that the measured value of χ is a lattice susceptibility. The total susceptibility of the crystal lattice consists of the Langevin diamagnetic component and the Van Vleck paramagnetic component χ_n. The calculated Langevin component was 2.64×10^{-6}, indicating that considerable Van Vleck paramagnetism ($\chi_n = 0.66 \times 10^{-6}$) is present in ZnTe. From this it was concluded that covalent bonds are essential to this

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L 33323-65
ACCESSION NR: AP5007689

compound. Measurements by using pressed powder specimens of ZnTe showed that absorbed oxygen exerts a considerable influence on the total value of X. For these specimens X equaled 0.538 x 10^{-6} at 293K and depended linearly on T. Investigation of the temperature dependence of electric conductivity and thermal emf in the temperature range from 293 to 470K showed conductivity to be of the hole type. The activation energies calculated for the regions of intrinsic and impurity conductivities were ΔE_2 = 2.05 ev and ΔE_2 = 0.96 ev, respectively. Orig. art. has: 4 figures and 3 formulas. [JA]

ASSOCIATION: Chernivets'kyy derzhuniversytet (Chernovtsy State University)

SUBMITTED: 15Oct63 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 005 OTHER: 009 ATD PRESS: 3208

Card 2/2

L 42403-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Ps-4 IJP(c) JD

ACCESSION NR: AP5008858 S/0073/65/031/003/0252/0257

AUTHOR: Mazurkevich, Ya. S.; Noval'kovskiy, N.P.; Pamfilov, A.V.; Savitskiy, A.V.

TITLE: Magnetic susceptibility and photocatalytic acitivity of zinc oxide and titanium oxide

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 3, 1965, 252-257

TOPIC TAGS: zinc oxide, titanium oxide, magnetic susceptibility, photocatalytic activity

ABSTRACT: The study was made in order to determine the relationship between the magnetic susceptibility of zinc oxide and titanium oxide and their photocatalytic activity. The magnetic susceptibility measurements involved the use of automatic weighing and magnetic field stabilization (a diagram of the device used is given). The variation in the specific magnetic susceptibility of ZnO as a function of temperature and of preliminary thermal treatment in hydrogen was determined, and the influence of reduction on the temperature dependence of the specific magnetic susceptibility of TiO_2 was established. It was found that between the photocatalytic activity of the oxides of zinc and titanium and their paramagnetism there exists a relationship which confirms the hypothesis that the

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L 42403-65

ACCESSION NR: AP5008858

centers of the photocatalytic processes in these compounds are the Zn^{+} and Ti^{3+} ions.

"We express our appreciation to K.D. Tovstyuk for enabling us to carry out certain measurements." Orig. art. has: 5 figures, 1 formula and 1 table.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: 08Jul63 ENCL: 00 SUB CODE: IC, EM

NO REF SOV: 007 OTHER: 011

Card 2/2

L 4433-66 EWT(1)/EWT(m)/ETC/EWG(m)/EWP(t)/EWP(b) IJP(c) RDW/JD
ACCESSION NR: AP5017900 UR/0051/65/019/001/0115/0120
535.312:535.33 + 535.34

AUTHORS: Savitskiy, A. V.; Kurik, M. V.; Tovstyuk, K. D.

TITLE: Optical properties of zinc telluride. I. Fundamental absorption edge

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 115-120

TOPIC TAGS: zinc compound, optic material, telluride, absorption edge, optic property, optic transition, forbidden band

ABSTRACT: Reflection and absorption in ZnTe single crystals were investigated at temperatures 300, 77, 20.4, and 4.2K. The zinc telluride was synthesized by a standard procedure and the single crystal obtained by the Bridgman method. The optical measurements were made photographically and photoelectrically. A spectrometer based on a SPM-2 monochromator (Zeiss) was used for the transmission measurements. According to their optical properties, the crystals could be separated into two types. At low temperatures (20.4 and 4.2K) the

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L 4433-66
ACCESSION NR: AP5017900 3

crystals of the first type gave no fine structure in the absorption spectra, whereas the crystals of the second type had a weak line structure over the fundamental absorption background at the beginning of the long-wave length absorption. A narrow reflection, which is an exciton line in ZnTe, can be observed at low temperatures. Direct and indirect optical transitions were observed, and energy-band parameters and their temperature dependences were obtained. At room temperature, the separation between the maximum of the valence band and the minimum of the conduction band at the point k = 0 is equal to 2.255 ev, and the width of the forbidden band is equal to 2.176 ev. [The authors thank M. S. Brodin for a helpful discussion.] Orig. art. has: 5 figures, 4 formulas, and 1 table.

4455

ASSOCIATION: None

SUBMITTED: 30Jun64 ENCL: 00 SUB CODE: OP,SS

NR REF SOV: 002 OTHER: 007

Card 2/2

L 32965-66 EWP(j)/EWT(m)/T IJP(c) RM

ACC NR: AP6017603 (A) SOURCE CODE: UR/0183/66/000/001/0029/0031

37

AUTHOR: Levin, B. Ya.; Savitskiy, A. V.; Demicheva, V. P.

B

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR (Fiziko-tekhnicheskiy institut AN UkrSSR)

TITLE: Effect of the degree of stretching on the strength of capron fibers

SOURCE: Khimicheskiye volokna, no. 1, 1966, 29-31

TOPIC TAGS: synthetic fiber, polyamide, tensile strength, nylon

ABSTRACT: The authors study the effect of stretching conditions on the strength of polyamide fibers at liquid nitrogen temperatures. The specimens had minimum initial orientation evaluated from measurments of birefringence. The experimental data show a linear relationship between strength and degree of stretching. Elongation and molecular orientation increase when the stretching temperature is raised. The experimental data prove conclusively that the strength of capron fiber is a function of the degree of stretching alone and is independent of the temperature and the rate at which the orientation stretching is done. The increase in strength properties of the capron takes place in such a way that stretching does not change the breaking load at -196°C reduced to the cross section of the original fiber. This same relationship is observed in specimens of polyethylene and rubber when they are stretched to 400-700%. If the

UDC: 677.494.675

Card 1/2

L 32965-66

ACC NR: AP6017603

mechanism responsible for this phenomenon were determined, it could explain the process of strength increase in polymer fibers. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 17Nov64/ ORIG REF: 006/ OTH REF: 003

Card 2/2

L 27998-66 EWP(j)/EWT(m)/T RM

ACC NR: AP6009874 (A) SOURCE CODE: UR/0413/66/000/004/0069/0069

INVENTOR: Savitskiy, A. V.; Skachilova, S. Ya.; Neugodov, P. P.; Ratushenko, G. V.; Arkhipova, Z. V.; Falev, V. M.; Badayev, V. K.

ORG: none

TITLE: Preparation of polyolefins. Class 39, No. 178982. [announced by State Scientific-Research Institute of Polymerization Plastics, Experimental Plant (Gosudarstvennyy nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass, eksperimental'nyy zavod); Central Scientific-Research Laboratory of Reagents (Tsentral'naya nauchno-issledovatel'skaya laboratoriya reaktivov)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 69

TOPIC TAGS: olefin, polymerization, polymer

ABSTRACT: An Author Certificate has been issued describing a method of obtaining polyolefins by polymerization of Alpha-olefins in a medium of an inert hydrocarbon solvent with heating in the presence of a catalyst consisting of a mixture of dialkylaluminum chloride and a heavy metal compound. To speed up the process of polymerization and expand the variety of heavy metal compounds, chelate derivatives of orthovanadic acid are suggested under the general formula $VO(OR)(OX)_2$, where R is the hydrogen or alkyl and X is the remainder of the chelating agent. Methylether of vanadium orthohydroxyquindate is the chelate derivative of orthovanadic acid suggested for use. [LD]

SUB CODE: 07,11/ SUBM DATE: 13Aug64 UDC: 678.742

Card 1/1

L 24286-66 EWT(m)/EWG(m)/EWP(t) IJP(c) RDW/JD/JG

ACC NR: AP6007001 SOURCE CODE: UR/0051/66/020/002/0297/0302

51
48
B

AUTHOR: Kurik, M. V.; Savitskiy, A. V.

ORG: none

TITLE: Optical properties of zinc telluride. II. Effects of In, Ga, and Cu impurities on the absorption edge

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 297-302

TOPIC TAGS: zinc compound optic material, telluride, absorption edge, exciton absorption, impurity center, energy band structure

ABSTRACT: This is a continuation of earlier work (Opt. i spektr. v. 19, 115, 1965), with emphasis on the influence of different impurities on the exciton absorption. The ZnTe single crystals were prepared by a technology described in the earlier paper. The impurities were added in the melt. The influence of the impurities In, Ga, and Cu with large concentrations on the intrinsic absorption edge of p-type ZnTe was investigated at 300, 77, and 20.4K. The optical measurment procedure was described in the earlier paper. At the concentrations used (1.6×10^{19}--1.6×10^{20} cm^{-3}), the indium and gallium impurities cause vanishing of the exciton absorption and a shift of the edge to the long-wave side. The copper impurity (concentration 3.5×10^{19} cm^{-3}) had no effect on the absorption edge or on its fine structure. The disappearance of the excitons and the shift of the absorption edge is shown by analysis to be caused mainly by the effect of the impurities on the energy band structure of the

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Card 1/2 UDC: 535.34 : 548.0

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ACC NR: AP6007001

semiconductor. The authors thank M. S. Brodin for help with the work, and V. L. Broude and K. T. Tovstyuk for valuable discussions. Orig. art. has: 4 figures, 1 formula, and 1 table.

SUB CODE: 20/ SUBM DATE: 21Oct64/ ORIG REF: 006/ OTH REF: 005

Card 2/2

1ST AND 2ND ORDERS — PROCESSES AND PROPERTIES INDEX — 3RD AND 4TH ORDERS

BC

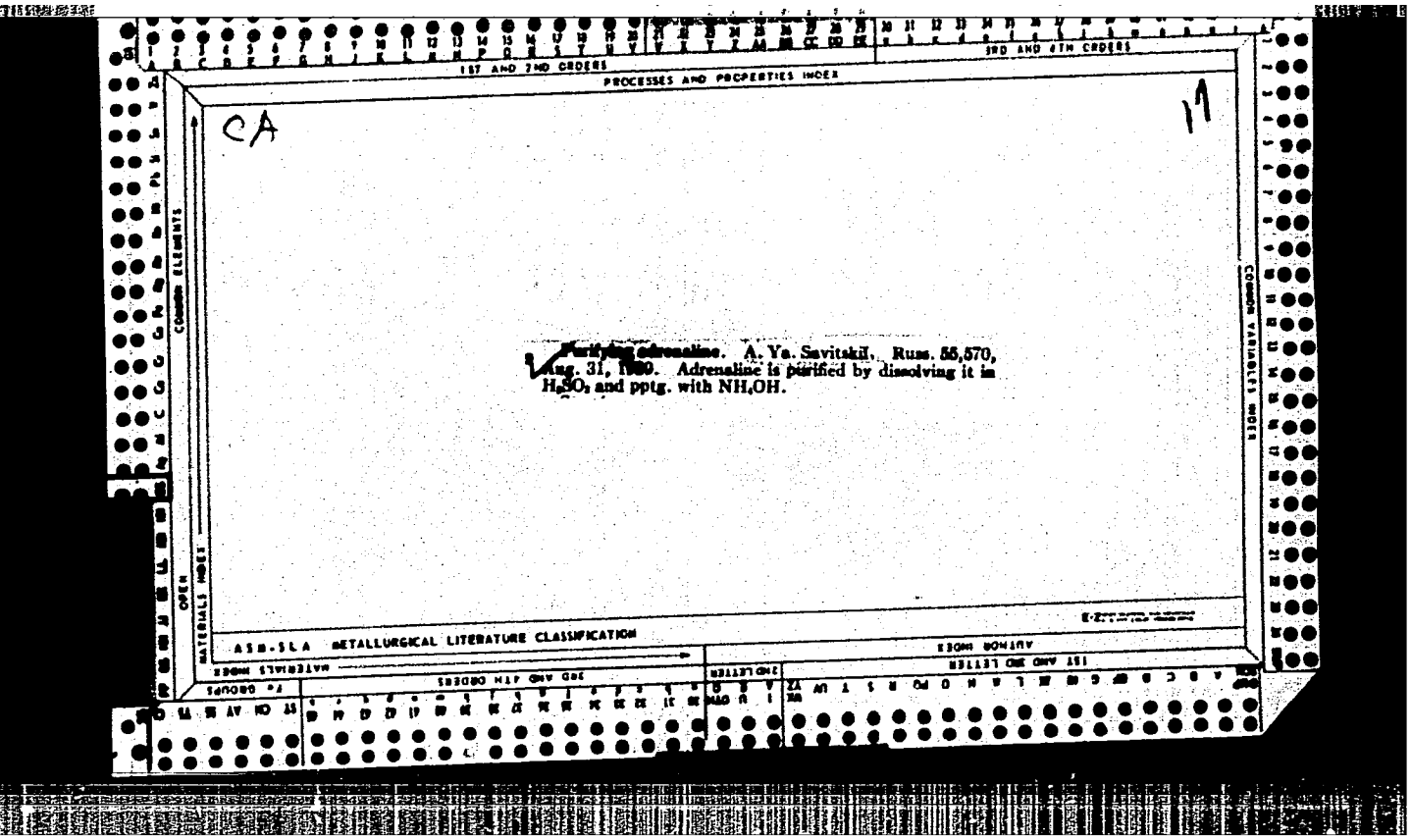
SAVITSKIY, A. YA.

A3

Thyroxine from quinol monomethyl ether and 3:4:5-tri-iodonitrobenzene. A. Ya. Savitskii (Med. exp., Ukraine, 1934, No. 1, [illegible]).—A modified synthesis is described. It is possible to avoid esterification and obtain α-amino-β-(3:5-di-iodo-4-4'-hydroxyphenoxyphenyl)propionic acid directly; this is then iodinated to thyroxine in good yield.

Ch. Abs. (r)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447410012-7"

SAVITSKIY, A. Ye.

"3,5-Diiodoil-Tyrosine, its Preparation (polucheniye) and Properties," Zhur. Obshch. Khim., 9, No. 14, 1939. Laboratory for the Synthesis of Hormones, Ukrainian Central Institute of Endocrynology and Organotherapy. Received 10 Feb 1939.

Report U-1614, 3 Jan 1952.

SAVITSKIY, A. YA., AND NAKHMANKO, N. I.

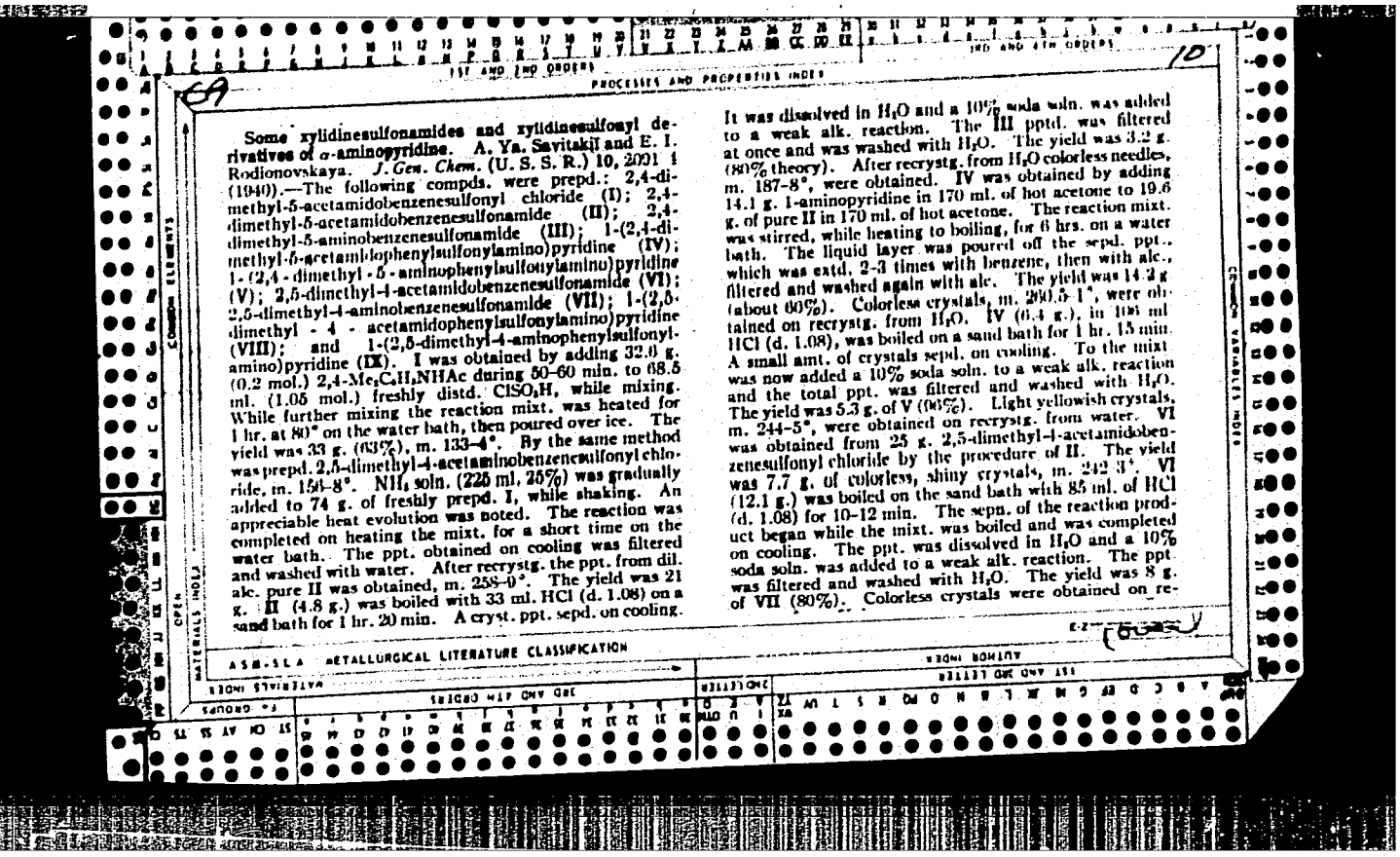
"The Synthesis of 1-(p-Oxyphenyl)2-(Methylamino)-Propane (Veritol)"
Zhur Obshch. Khim., 10, No. 21, 1940. Laboratory for the Synthesis of Hormones, Ukrainian Central Institute of Endocrinology and Organotherapy, Received 26 May 1940.

Report U-1612, 3 Jan 1952

SAVITSKIY, A. Ya., RODIONOVSKAYA, E. I.

"The Derivation of Certain Xylidine-Sulfamides and Xylidine-Sulfo Derivatives of Aminopyridine," Zhur. Obshch. Khim., 10, No. 23-24, 1940. Department of Organic Chemistry, Ukrainian Institute of Experimental Medicine. Received 13 June 1940.

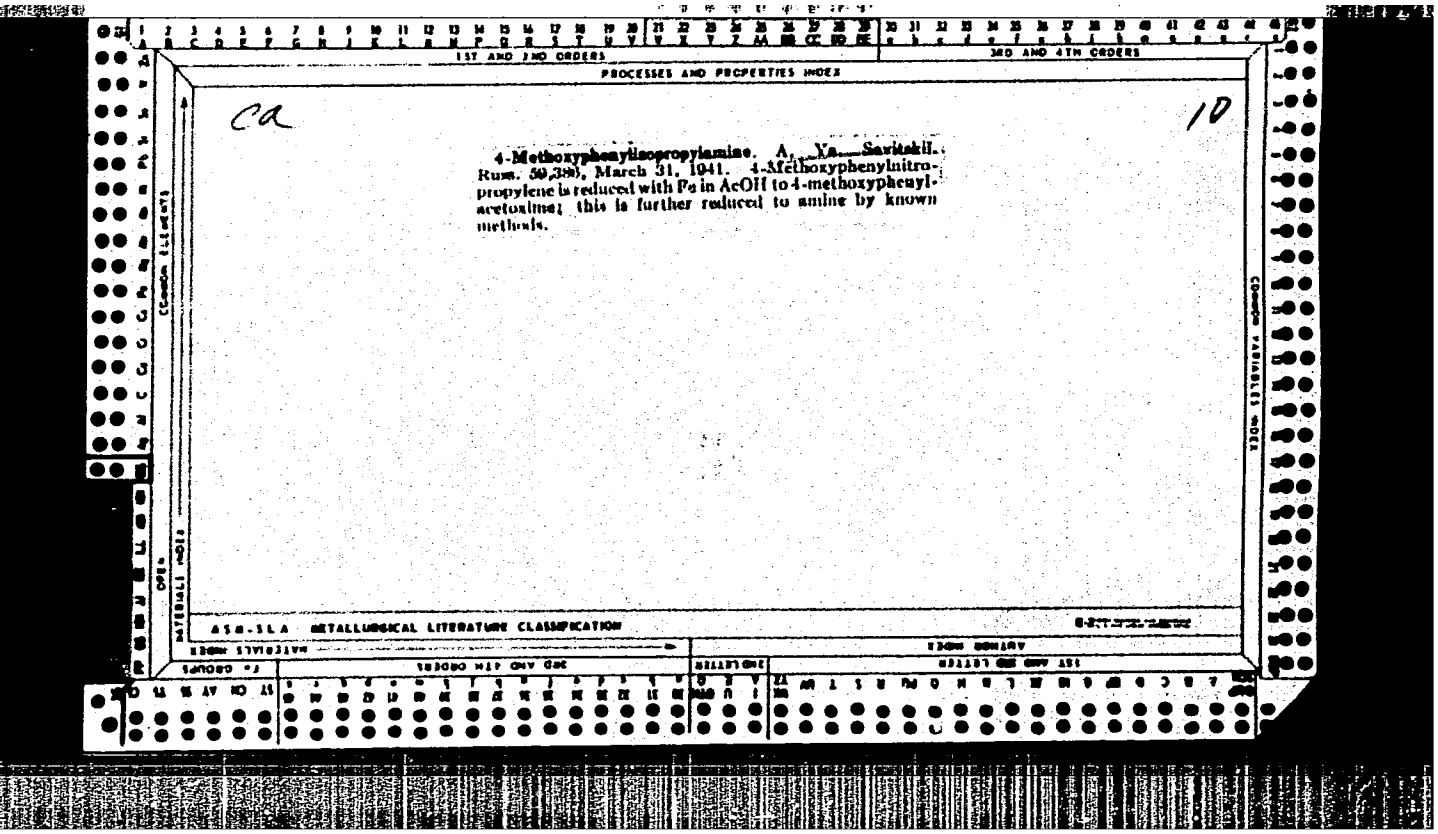
Report U-1612, 3 Jan 1952.

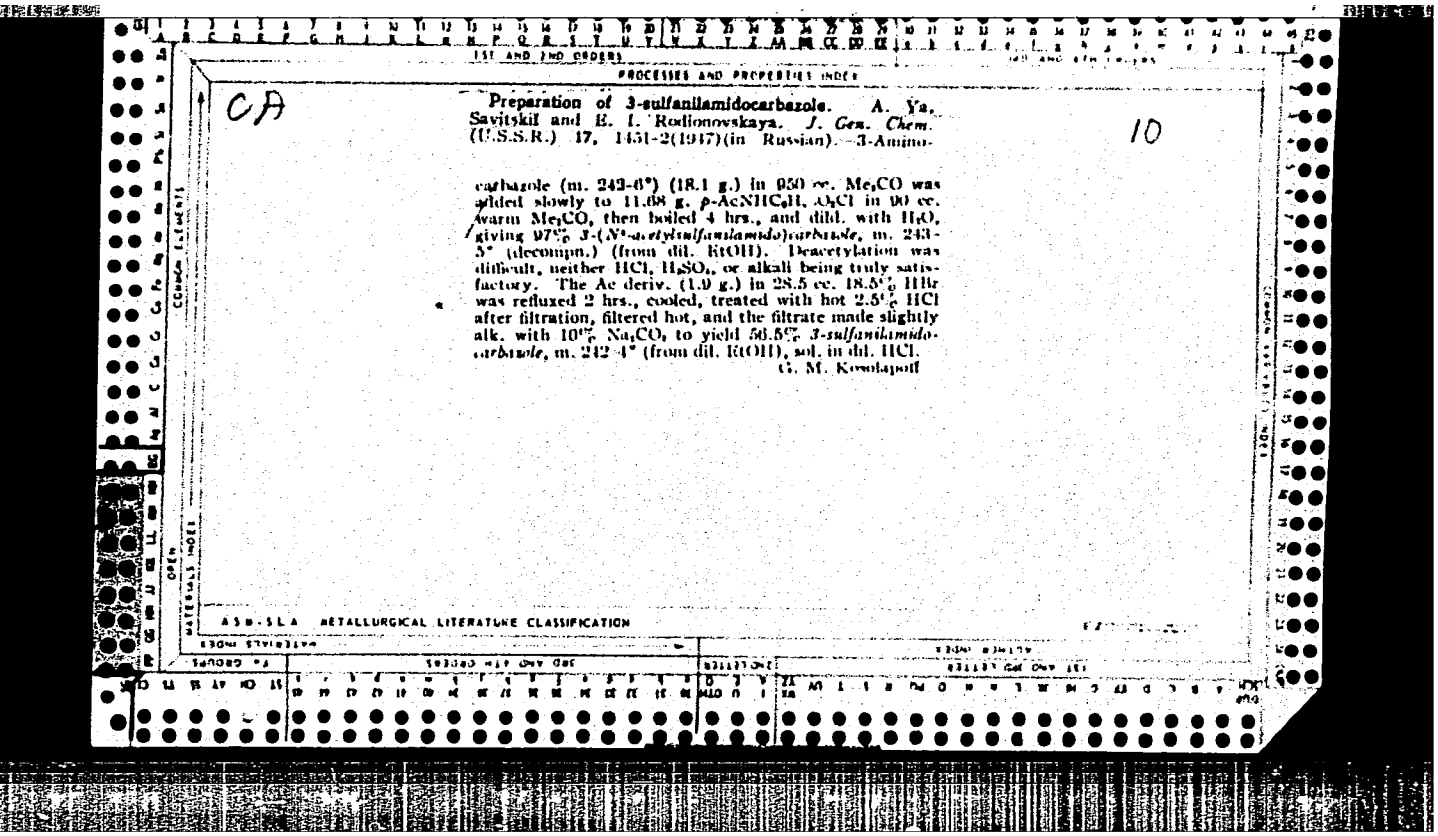


Some xylidinesulfonamides and xylidinesulfonyl derivatives of α-aminopyridine. A. Ya. Savitskiĭ and E. I. Rodionovskaya. *J. Gen. Chem.* (U. S. S. R.) 10, 2001 4 (1940).—The following compds. were prepd.: 2,4-dimethyl-5-acetamidobenzenesulfonyl chloride (I); 2,4-dimethyl-5-acetamidobenzenesulfonamide (II); 2,4-dimethyl-5-aminobenzenesulfonamide (III); 1-(2,4-dimethyl-5-acetamidophenylsulfonylamino)pyridine (IV); 1-(2,4-dimethyl-5-aminophenylsulfonylamino)pyridine (V); 2,5-dimethyl-4-acetamidobenzenesulfonamide (VI); 2,5-dimethyl-4-aminobenzenesulfonamide (VII); 1-(2,5-dimethyl-4-acetamidophenylsulfonylamino)pyridine (VIII); and 1-(2,5-dimethyl-4-aminophenylsulfonylamino)pyridine (IX). I was obtained by adding 32.0 g. (0.2 mol.) 2,4-$Me_2C_6H_3NHAc$ during 50–60 min. to 68.5 ml. (1.05 mol.) freshly distd. $ClSO_3H$, while mixing. While further mixing the reaction mixt. was heated for 1 hr. at 80° on the water bath, then poured over ice. The yield was 33 g. (63%), m. 133–4°. By the same method was prepd. 2,5-dimethyl-4-acetaminobenzenesulfonyl chloride, m. 156–8°. NH_4 soln. (225 ml. 25%) was gradually added to 74 g. of freshly prepd. I, while shaking. An appreciable heat evolution was noted. The reaction was completed on heating the mixt. for a short time on the water bath. The ppt. obtained on cooling was filtered and washed with water. After recrystg. the ppt. from dil. alc. pure II was obtained, m. 258–9°. The yield was 21 g. II (4.8 g.) was boiled with 33 ml. HCl (d. 1.08) on a sand bath for 1 hr. 20 min. A cryst. ppt. sepd. on cooling. It was dissolved in H_2O and a 10% soda soln. was added to a weak alk. reaction. The III pptd. was filtered at once and was washed with H_2O. The yield was 3.2 g. (80% theory). After recrystg. from H_2O colorless needles, m. 187–8°, were obtained. IV was obtained by adding 14.1 g. 1-aminopyridine in 170 ml. of hot acetone to 19.6 g. of pure II in 170 ml. of hot acetone. The reaction mixt. was stirred, while heating to boiling, for 6 hrs. on a water bath. The liquid layer was poured off the sepd. ppt., which was extd. 2–3 times with benzene, then with alc., filtered and washed again with alc. The yield was 14.2 g. (about 60%). Colorless crystals, m. 200.5–1°, were obtained on recrystg. from H_2O. IV (6.4 g.), in 100 ml. HCl (d. 1.08), was boiled on a sand bath for 1 hr. 15 min. A small amt. of crystals sepd. on cooling. To the mixt. was now added a 10% soda soln. to a weak alk. reaction and the total ppt. was filtered and washed with H_2O. The yield was 5.3 g. of V (90%). Light yellowish crystals, m. 244–5°, were obtained on recrystg. from water. VI was obtained from 25 g. 2,5-dimethyl-4-acetamidobenzenesulfonyl chloride by the procedure of II. The yield was 7.7 g. of colorless, shiny crystals, m. 242.3°. VI (12.1 g.) was boiled on the sand bath with 85 ml. of HCl (d. 1.08) for 10–12 min. The sepn. of the reaction product began while the mixt. was boiled and was completed on cooling. The ppt. was dissolved in H_2O and a 10% soda soln. was added to a weak alk. reaction. The ppt. was filtered and washed with H_2O. The yield was 8 g. of VII (80%). Colorless crystals were obtained on re-

crystg. from H_2O, m. 189–90°. 1-Aminopyridine (7.44 g.) in 15 ml. hot acetone was added to 10.4 g. of pure VII in 75 ml. of hot acetone. The reaction mixt. was heated to boiling for 6 hrs. on the water bath, while stirring. The liquid was poured off from the formed ppt. which was extd. 2–3 times with benzene, then with alc. It was filtered and washed with alc. The yield was 10 g. of VIII (88%). Shiny crystals, m. 243.5–4.5°, were obtained on recrystg. from H_2O. VIII (0.32 g.) was heated with 1.28 ml. HCl (d. 1.05) on the water bath at 85–90° for 15–20 min. A 10% soda soln. was added, on cooling, to the reaction mixt. to a weak alk. reaction. The sepd. cryst. ppt. was filtered and washed with H_2O. The yield was 0.1 g. of IX. On recrystg. IX from dil. alc. it m. 217–18° (some decompn.).

James J. Lichtin





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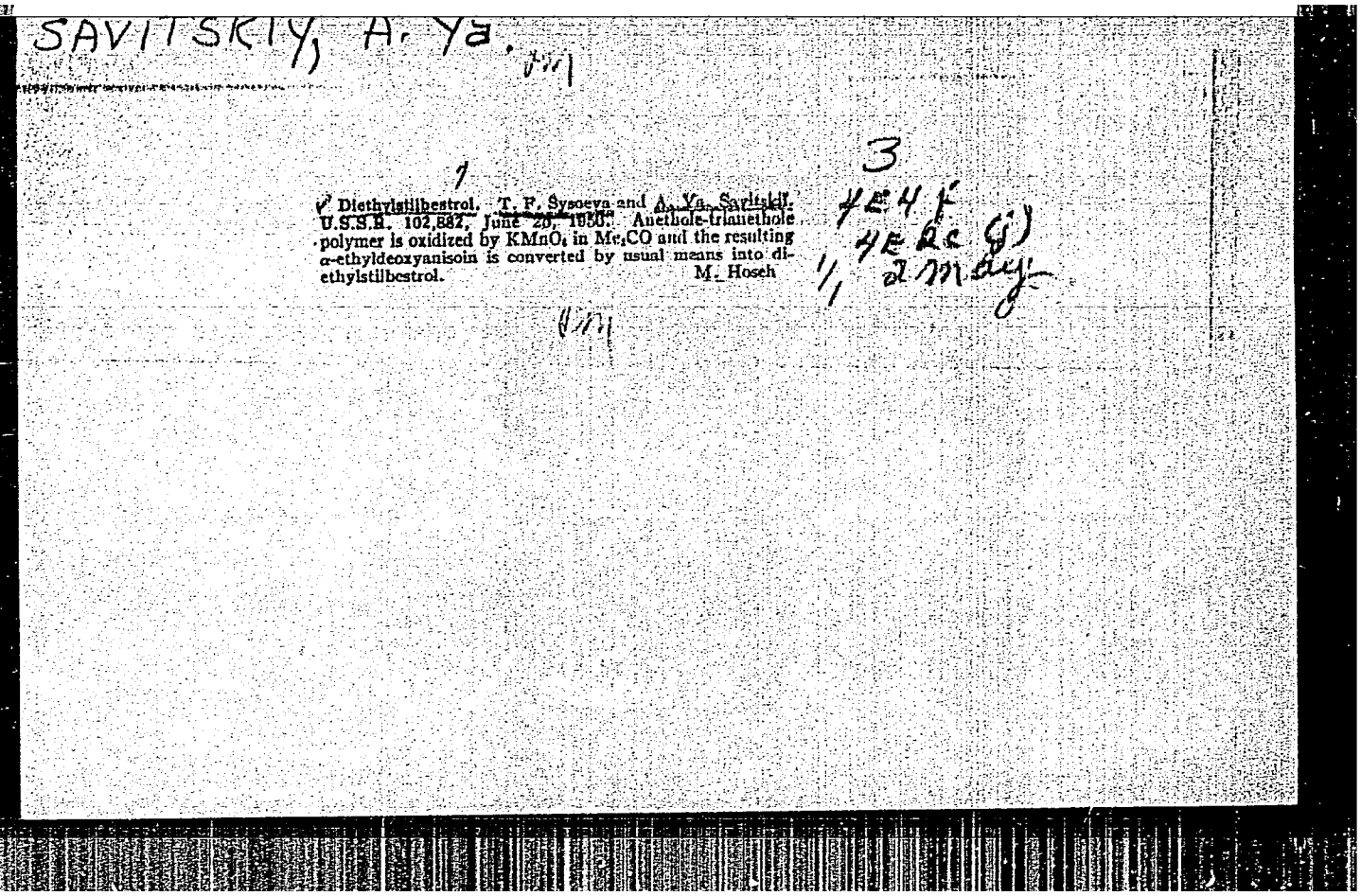
Preparation of 3-sulfanilamidocarbazole. A. Ya. Savitskii and E. I. Rodionovskaya. *J. Gen. Chem.* (U.S.S.R.) 17, 1451-2(1947)(in Russian).—3-Amino-carbazole (m. 243-6°) (18.1 g.) in 950 cc. Me_2CO was added slowly to 11.68 g. *p*-$AcNHC_6H_4SO_2Cl$ in 90 cc. warm Me_2CO, then boiled 4 hrs., and dild. with H_2O, giving 97% *3-(N⁴-acetylsulfanilamido)carbazole*, m. 243-5° (decompn.) (from dil. EtOH). Deacetylation was difficult, neither HCl, H_2SO_4, or alkali being truly satisfactory. The Ac deriv. (1.9 g.) in 28.5 cc. 18.5% HBr was refluxed 2 hrs., cooled, treated with hot 2.5% HCl after filtration, filtered hot, and the filtrate made slightly alk. with 10% Na_2CO_3 to yield 56.5% *3-sulfanilamidocarbazole*, m. 242-4° (from dil. EtOH), sol. in dil. HCl.

G. M. Kosolapoff



SAVITSKIY, A. Ya.

Diethylstilbestrol. T. F. Sysoeva and A. Ya. Savitskii. U.S.S.R. 102,882, June 20, 1955. Anethole-trimethole polymer is oxidized by $KMnO_4$ in Me_2CO and the resulting α-ethyldeoxyanisoin is converted by usual means into diethylstilbestrol. M. Hoseh

SAVITSKIY, A. Ya.

Polymerization of anethole by iodine and the trianethole obtained. A. Ya. Savitskii and T. B. Sysoeva (Ukrain. Inst. Exptl. Endocrinol., Kharkov). *Ukrain. Khim. Zhur.* 22, 197-9 (1956) (in Russian).—Anethole (I) heated on a H_2O bath was polymerized by iodine. There were isolated from the product metanethole (II), m. 132°, isoanethole (III), m. 206-10°, a trimer, trianethole (IV), b. 238-48°, and ... a series of solids having the m.ps ... IV bleached ... H_2O ... 3530 ... heating

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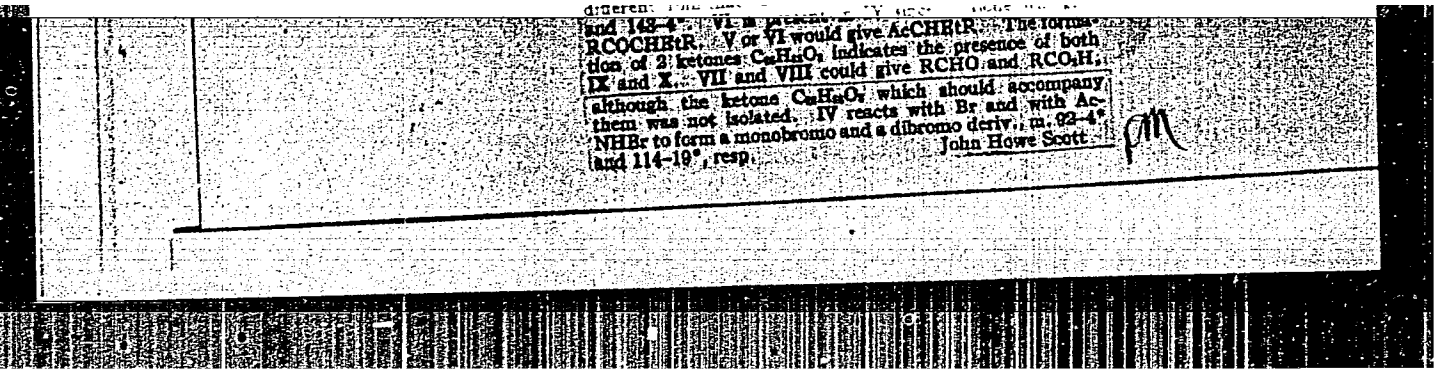


different [illegible] and 142–4°. VI in [illegible] RCOCHRtR. V or VI would give AcCHRtR. The formation of 2 ketones $C_6H_{12}O_3$ indicates the presence of both IX and X. VII and VIII could give RCHO and RCO_2H, although the ketone $C_6H_{12}O_3$ which should accompany them was not isolated. IV reacts with Br and with AcNHBr to form a monobromo and a dibromo deriv., m. 92–4° and 114–19°, resp.

John Howe Scott

SAVITSKIY, A. Ye.

25(1) PHASE I BOOK EXPLOITATION SOV/1745

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye upravleniye

Peredovaya tekhnologiya liteynogo proizvodstva (Advanced Technology of Casting Production) Kiyev, Mashgiz, 1958. 152 p. 6,000 copies printed.

Ed.: V. K. Serdyuk; Tech. Ed.: Ye. V. Rudenskiy; Editorial Board: A.Ye. Artamonov, K. I. Vashchenko (Resp.Ed.), S. Sh. Zaslavskiy, and B. V. Polyak; Chief Ed. (Yuzhnoye Division, Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for engineering personnel of foundries, and workers of scientific research institutions.

COVERAGE: This book is a collection of articles and papers given by representatives of plants, scientific-research institutes, and vuzes on problems of advanced methods of production and mechanization of the foundry industry at a conference organized by the Kiyev o'blast Board of NTO (Scientific Engineering Section) of the machine-building industry and the Institute of Mechanical Engineering of the Academy of Sciences, Ukrainian SSR. Experience gained in centrifugal pipe precision investment casting, shell-and metal-mold casting, use of materials preventing scorching, quick drying sand mixtures [blends], and problems of mechanization and automation of foundry processes are covered in this book. An article by N.Kh. Ivanov, deals with a new cast iron welding method developed by the author with the assistance of electrowelder G. A. Piroshenko, and called "cold electrowelding of cast iron by means of a metal electrode with an indirect arc action." As the title indicates, the arc acts only indirectly on the welded metal passing between the electrode and the build-up metal. Such welding insures shallow fusion of the cast iron. The formation of a cementite surface layer is either absent or limited to a very thin layer of not more than 0.2 mm., making for easy mechanical working. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Advanced Technology of Casting Production (Cont.) SOV/1745

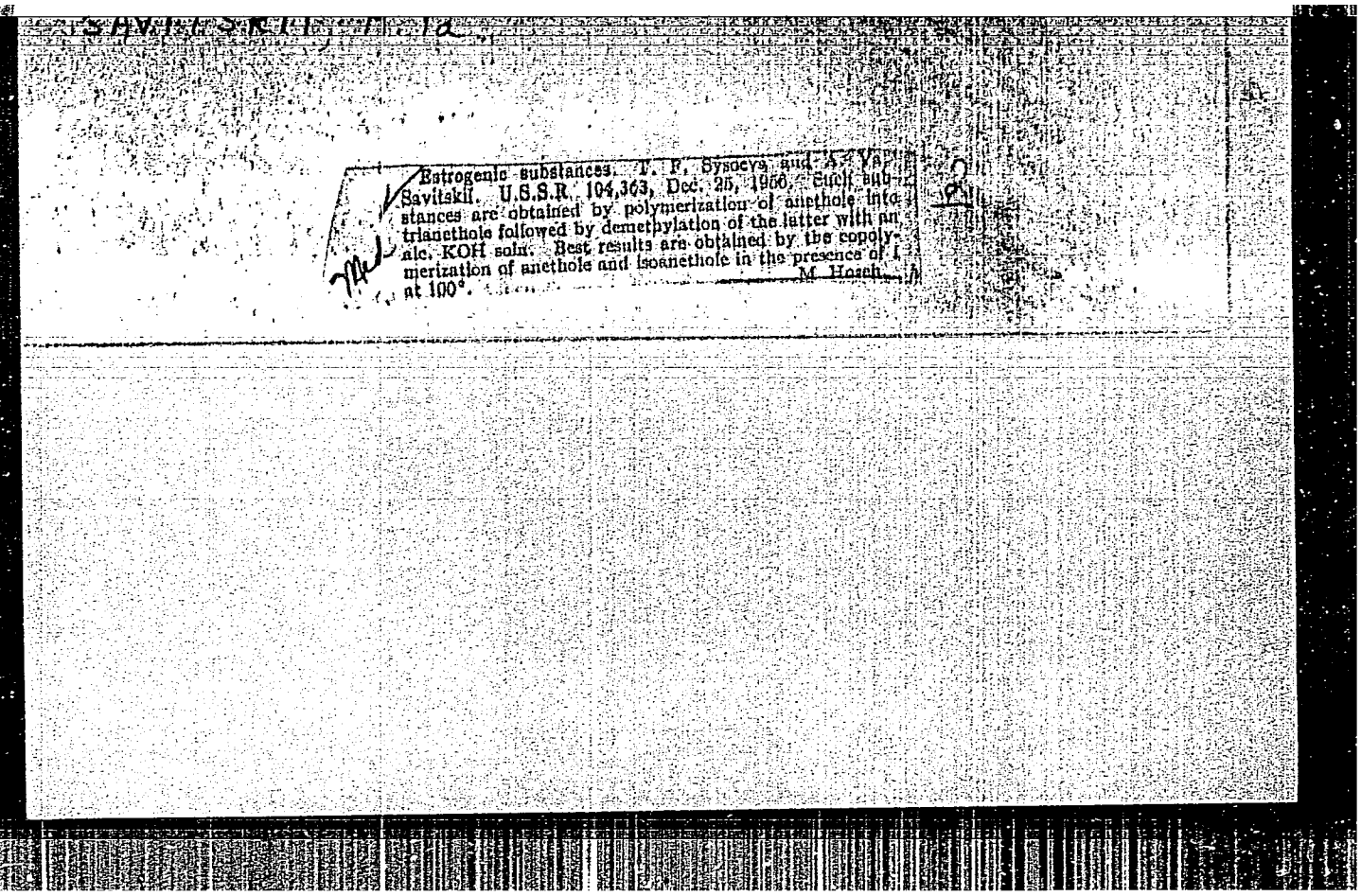
AVAILABLE: Library of Congress

GO/mal
6-22-59

Card 6/6

SAVITSKIY, A.Ya.

Vertically-locked, walking foundry conveyer. Lit.proizv. no.2: 14-16 F '60. (MIRA 13:5)
(Foundries--Equipment and supplies)
(Conveying machinery)



Estrogenic substances. T. F. Sysoeva and A. Ya. Savitskii. U.S.S.R. 104,363, Dec. 25, 1956. Estrogenic substances are obtained by polymerization of anethole into trianethole followed by demethylation of the latter with an alc. KOH soln. Best results are obtained by the copolymerization of anethole and isoanethole in the presence of I at 100°.

M. Hosch

LOGINOV, Mariya Kapitonovna; LUR'YE, Dzhan Aliyevich; NEMKOVSKIY, Mikhail Il'ich; ORLEANSKIY, Yakov Pavlovich; SAVITSKIY, Aron Yakovlevich; SHUBIN, Vladimir Petrovich; MILKO, M.N., kand. tekhn. nauk, retsenzent; POLYAKOVA, D.I., red.; BYKOVSKIY, A.I., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Album of equipment for the mechanization of foundries]Al'bom sredstv mekhanizatsii liteinykh tsekhov. [By] M.K.Loginova i dr. Moskva, Mashgiz, 1962. 131 p. (MIRA 15:10)
(Foundries--Equipment and supplies)

SAVITSKIY, A.Ye., inzh.

More attention to the development of safety measures in coal mines. Bezop.truda v prom. 2 no.3:3-5 Mr '58. (MIRA 11:3)
(Coal mines and mining--Safety measures)

SAVITSKIY, A.Ye., inzh.

Mechanized setting of roofs in longwalls. Bezop.truda v prom. 3 no.3:9 Mr '59. (MIRA 12:4)

1. Upravleniye Kuznetskogo okruga Gosgortekhnadzora RSFSR.
(Kuznetsk Basin--Coal mines and mining)

SAVITSKIY, A.Ye., inzh.

Main condition for efficient mining. Bezop.truda v prom. 3 no.4:3-4 Ap '59. (MIRA 12:6)
(Mining engineering)

SAVITSKIY, A.Ye., inzh.

Clay inrush in mines of the Prokopyevsk-Kiselevsk area. Bezop. truda v prom. 4 no. 5:6-8 My '60. (MIRA 14:5)
(Kuznetsk Basin--Coal mines and mining--Accidents)

ZHURAVLEV, A.G.; SAVITSKIY, A.Ye.

Safe mining of rise headings. Bez.truda v prom. 6 no.1:31-32 Ja '62. (MIRA 15:1)

(Mining engineering--Safety measures)

GORBACHEV, Vasiliy Ivanovich; SAVITSKIY, Anatoliy Yefimovich; TIMOFEYEVA, Mariya Kharitonovna; KACHALKINA, Z.I., red. izd-va; RYKOV, N.A., otv. red.; MAKSIMOVA, V.V., tekhn. red.

[Conveyor operator]Mashinist konveiera. Moskva, Gosgortekhizdat, 1962. 99 p. (MIRA 15:12)
(Conveying machinery)

SAVITSKIY, B.

Pocket camp fire. Znan. sila 36 no.3:23 Mr '61. (MIRA 14:3)
(Camping--Outfits, supplies, etc.)

SAVITSKIY, B.

"Pyzhik." IUn. nat. no.10:37 O '61. (MIRA 14:10)
(Deer)

VOROB'YEV, A.; SAVITSKIY, B.

Everyone for the collective, the collective for everyone.
Avt.transp. 43 no.11:10-12 N '65. (MIRA 18:12)

1. Direktor 9-oy avtobazy upravleniya mezhdugorodnykh perevozok Glavnogo upravleniya avtomobil'nogo transporta Ispolnitel'nogo komiteta Moskovskogo gorodskogo Soveta deputatov trudyashchikhsya (for Vorob'yev). 2. Glavnyy ekonomist 9-oy avtobazy upravleniya mezhdugorodnykh perevozok Glavnogo upravleniya avtomobil'nogo transporta Ispolnitel'nogo komiteta Moskovskogo gorodskogo Soveta deputatov trudyashchikhsya (for Savitskiy).

SAVITSKIY, B. I.

Л. Н. Капцов

Некоторые нелинейные свойства полупроводникового триода, обусловленные эффектом модуляции толщины базы

4. СЕКЦИЯ ПРИЕМНЫХ УСТРОЙСТВ

Руководитель Н. И. Чистяков

12 июня

(с 10 до 16 часов)

М. Г. Голубцов,
Л. Т. Речкина,
Л. С. Тифонин

Приемное устройство для измерения статистических характеристик сигналов при тропосферном распространении радиоволн

Ю. Н. Бабанов

Использование фазовых предыскажений сигнала для повышения помехоустойчивости систем связи

В. В. Рогозин

Метод определения параметров кристаллического детектора в сантиметровом диапазоне.

12 июня

(с 18 до 22 часов)

В. П. Шамшин

О принципах конструирования многокаскадных широкополосных усилителей

И. А. Суслов,
Д. И. Смирнов

Влияние временных изменений динамических емкостей на характеристики усилителя с корректирующей емкостью в цепи катода и с параллельной индуктивной коррекцией в анодной цепи

И. Н. Пустынский

Коррекция искажений фронта импульса в видеоусилителях на плоскостных триодах

В. И. Савицкий

Об избирательности вещательных приемников в диапазоне УКВ.

Г. И. Левитан,
О. Н. Быстряков

Методы электрической регулировки полосы пропускания многоконтурных полосовых фильтров

5. СЕКЦИЯ ПРОВОДНОЙ СВЯЗИ

Руководитель Н. И. Гродин

9 июня

(с 10 до 16 часов)

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959

PHASE I BOOK EXPLOITATION SOV/5245

Ministerstvo svyazi SSSR. Tekhnicheskoye upravleniye

Novyye razrabotki v oblasti radiosvyazi i radioveshchaniya; informatsionnyy sbornik (New Developments in the Field of Radio Communication and Radio Broadcasting; Informational Collection) Moscow, Svyaz'izdat, 1959. 80 p. 11,500 copies printed. (Series: Tekhnika svyazi)

Resp. Ed.: A. S. Vladimirov; Ed.: V. I. Bashur; Tech. Ed.: G. I. Shefer.

PURPOSE: This collection of articles is intended for technical personnel concerned with the development and operation of radio communication and radio broadcasting.

COVERAGE: The book contains, according to the Foreword, information on new developments realized at the Gosudarstvennyy nauchno-issledovatel'skiy institut Ministerstva svyazi SSSR (State

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Scientific Research Institute of the Ministry of Communication USSR). Radio communication and radio broadcasting apparatus are described. Several articles are concerned with the development of new checking and measuring instruments. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress: (TK6563.R92)

JP/dfk/ec
6-15-61

SOV/106-59-1-5/12

AUTHORS: Savitskiy, B.I., and Kotikova, R.A.

TITLE: The Selectivity of VHF Broadcast Receivers (K voprosu ob izbiratel'nosti radioveshchatel'nykh priyemnikov v poddiapazone UKV)

PERIODICAL: Elektrosvyaz', 1959, Nr 1, pp 38-43 (USSR)

ABSTRACT: According to the present plan for broadcast coverage of the Soviet Union, a four-programme scheme is foreseen for the band 66 - 72 Mc/s in the European part of the USSR, and a six-programme system in parts of the most densely populated multi-racial territories using supplementary bands 64.5 - 66 Mc/s and 72 - 73 Mc/s. The first of these supplementary bands can only be used when the two T.V. channels are absent. Rather close spacing of the channels is envisaged with a minimum spacing of 575 kc/s, which should be adequate for present and earlier receivers. Interference must be considered not only from other stations but also by means of tropospheric scattering. For fairly distant ultra-short-wave stations, distant perhaps 600 to 7,000 kilometers, the experiment has shown that a disturbing station with a different programme must be spaced at least 200 kc/s from the

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The Selectivity of VHF Broadcast Receivers

desired programme, while if the programmes are the same interfering stations need only be spaced more than 100 kc/s away. In the Soviet plan the spacings envisaged are respectively 250 and 125 kc/s. However, these figures were arrived at without taking account of tropospheric interference. Since transmitter instability has rendered common channel working impossible even if transmitters are separated by considerable distances, the spacing between channels has been made not 250 kc/s but 25 kc/s and this has increased the danger of interference by distant stations. One result of this re-allocation of frequencies is re-appraisal of the selectivity necessary in VHF receivers. Now the interference may be expected for channels spaced at 125, 150, 175 and 200 kc/s from the wanted station. The method of measuring selectivity must also be examined. The single-signal method consists of the following steps. A receiver is tuned accurately to an incoming signal from the GSS-ChM with ± 15 kc/s deviation modulated with a frequency of 400 or 1000 c/s, and input level is adjusted to give an output power equal to 10% of the nominal output. The procedure is repeated

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The Selectivity of VHF Broadcast Receivers

± 250 kc/s from the centre frequency. The selectivity is defined as the ratio of the appropriate input levels. The selectivity measured this way depends both on the characteristics of the IF amplifier and of the FM detector. The real selectivity of the receiver is determined by the ratio of the signal and interference levels at the output of the IF amplifier. A number of measurements have been made on mass-produced receivers of the class II type (Volga and Vesna) and of a higher priced model (Druzhba). Figs 1, 2 and 3 show the linear selectivity (amplitude frequency characteristic of the IF amplifier); characteristics of the FM detector taken from the grid of the preceding valve; the transfer characteristics of the FM detector, taken from the input of the receiver; and the transfer characteristics of the detector (the dependence of output voltage on the frequency of the input signal for a constant high-frequency voltage at the input of the receiver and a fixed frequency deviation). Curve 2 refers to an input of 25 microvolts, curve 3 refers to 100 microvolts and curve 4 to 400 microvolts. It is evident from the curves that in the case of the Volga receiver the

The Selectivity of VHF Broadcast Receivers

shape and form of the linear selectivity characteristic depends on the input level and when this increases the characteristic shifts towards the high-frequency region. The bandwidth measured at the 6 dB level is 320 kc/s and is impermissibly large; the Vesna receiver has similar shortcomings and its bandwidth changes from 325 to 210 kc/s when the input level changes from 25 to 400 microvolts. The performance of the more expensive Druzhba receiver is more satisfactory. The bandwidth changes less because the effect of AGC on input capacitance is less marked, since the grid capacitance of the valve forms a smaller proportion of the total tuning capacitance of the tuned circuits. In West European countries and in the USA a maximum deviation of ± 75 kc/s is used and even in West German receivers the bandwidth is maintained as low as 120 to 140 kc/s. Several recommendations are made: adjacent channel interference should be considered at 150 kc/s intervals; a better method of selectivity measurement must be devised; circuit design should be

The Selectivity of VHF Broadcast Receivers

improved to avoid variation of bandwidth with AGC action; the receiver should leave the factory adjusted so that tuning is foolproof.
There are 3 figures.

SUBMITTED: July 14, 1958

Card 5/5

SANKIN, Nikolay Mikhaylovich; TRUNOV, Vadim Ivanovich. Prinimali uchastiye: TIMOFEYEVA, G.Ya.; KHANOV, B.A.; SAVITSKIY, B.I., BORISOV, G.B., otv.red.; VORONOVA, A.I., red.; MARKOCH, K.G., tekhn.red.

[Principles of technical planning of transmitting networks for television and shortwave F.M.broadcasting; information manual] Printsipy tekhnicheskogo planirovaniia peredaiushchikh setei televizionnogo i UKV ChM veshchaniia; informatsionnyi sbornik. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 93 p. (MIRA 13:5)

1. Nauchno-issledovatel'skiy institut svyazi Ministerstva svyazi SSSR (for Sankin, Trunov).
(Radio, Shortwave--Transmitters and transmission)
(Television broadcasting)

SAVITSKIY, B.I.

Analytical study of the operation of a dynamic AM suppressor.
Elektrosviaz' 16 no.10:25-29 O '62. (MIRA 15:9)
(Radio detectors) (Radio filters)

20090
S/106/60/000/012/003/009
A055/A033

9,3273

AUTHOR: Savitskiy, B. I.

TITLE: Some Problems Connected With the Operation of Ratio Detectors

PERIODICAL: Elektrosvyaz', 1960, No. 12, pp. 19-29

TEXT: Ratio detectors are very often used as f. m. discriminators in modern broadcast ultra short wave receivers, where the quality of the sound and the noiseproof characteristics depend, to a great extent, on the suppression of amplitude modulation within the limits of the working frequency-band. The object of the present article is, therefore, to examine some problems relating to the operation principle of ratio detectors, which have not yet been discussed, at least in a sufficiently comprehensive way, in technical literature, and, in particular, the problem of suppressing amplitude modulation. The author first deals with the phase-shifting transformer and the tube preceding it (this assembly is named by him "modulation-mode converter"). He works out simplified formulae expressing the output voltages of this converter of f. m. into a. m., and uses these formulae to derive the conditions ensuring the linearity of the static characteristics of the

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Some Problems Connected With the Operation of Ratio Detectors

converter. He then examines the typical a. m. detection circuit (bridge circuit) in the ratio detector, and, in particular, the part played by the bridge balance in the relative suppression of a. m. Then, defining the coefficient of relative suppression of a. m., he investigates the possibility of improving this coefficient by means of adequate dynamic variations of the parameters of the first and the second circuit of the phase-shifting transformer. Emphasizing the necessity of an increased suppression of a. m. at the edges of the working frequency band, he proves that this result can be achieved owing to the compensation of the a. m. effect by a dynamic variation of the effective attenuation in the second circuit of the phase-shifting transformer. He finally recommends as suitable and expedient the use of a separate control device for the dynamic suppression of a. m. There are 6 figures, 1 table and 4 references, 1 Soviet and 3 non-Soviet.

SUBMITTED: March 31, 1960

Card 2/2

SAVITSKIY, B. N.

"Investigation of the Destruction of Pistons in an Automotive Two-Cycle Diesel Engine." Cand Tech Sci, Moscow Automobile and Road Inst imeni V. M. Molotov, Min Higher Education, Moscow, 1954. (KL, No 10, Mar 55)

So: Sum. No 670, 29 Sept 55 - Survey of Scientific and Technical Dissertations Defended at U.S.S.R Higher Educational Institutions (15)

EXCERPTA MEDICA Sec 4 Vol 12/9 Med. Micro. Sept 59

2878. SURVEY OF THE FIGHT AGAINST TICKS AS CARRIERS OF THE SEASONAL VIRUS OF MENINGOENCEPHALITIS (Russian text) - Savitski B. P. - ZDRAVOOKHR. BELOR. 1958, 4/6 (14-16)

Ixodes ricinus is found in regions covered with fir trees and widely spread deciduous woods. Carriers of the ticks are rodents, squirrels, hedgehogs, some birds, lizards, cattle, goats and wolves. In the forests of Byelo-Russia the imago-stage of ticks begins in April and reaches its culmination in May and June. The most tick-infected domestic animals are found during this time of the year. Ixodes ricinus hibernates on decayed leaves but never on wild animals. Ticks are destroyed by acaricydin subst. (DDT), and the process should be carried out during the pasturing season at intervals of 7 days. The best results have been achieved with 10% DDT solution, 50-200 ml. per animal. Pastures can be dusted by airplane with 6% DDT, using 4-5 g. per sq. m.; the best results are obtained by dusting before the break into leaf, and in the autumn, with a snow-cover of about 25 cm.

Makstenieks - Leyden (IV, 17)

SAVITSKIY, B.P.

Wintering of the ticks Ixodes ricinus L. and Dermacentor pictus Herm. in White Russia. Zool.zhur. 38 no.9:1422 S '59. (MIRA 13:1)

1. Belorusskiy institut epidemiologii, mikrobiologii i gigiyeny (Minsk).
(Minsk Province--Ticks) (Parasites--Cattle)

SAVITSKIY, B. P., VOTYAKOV, V. I.

"Material on the zoo-parasitological characteristics of the pasture focus of tickborne encephalitis in Belorussia." Page 64.

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.

SAVITSKIY, B.P.

A new species of ixodid tick of the group Ixodes frontalis Panz. hitherto unknown in White Russia. Vestsi AN BSSR. Ser. biial. nav. no. 4:139 '60. (MIRA 14:1)
(White Russia--Ticks) (Parasites--Birds)

SAVITSKIY, B.P.

Control of bloodsucking arthropods. Zdrav. Belor. 6 no.8:56-58 Ag '60. (MIRA 13:9)

1. Belorusskiy nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i gigiyeny (direktor V.I. Votyakov).
(WHITE RUSSIA—INSECTS, INJURIOUS AND BENEFICIAL)
(INSECTICIDES)

SAVITSKIY, B.P.; MODEL, Kh.M.; MISHAYEVA, N.P.

Bloodsucking mosquitoes (Diptera, Culicidae) of the White Russian S.S.R. Ent. oboz. 41 no.2:350-354 '62. (MIRA 15:11)

1. Institut mikrobiologii, epidemiologii i gigiyeny, Minsk.

(White Russia--Mosquitoes)

MISHAYEVA, N.P.; SAVITSKIY, B.P.

Parasitism of gamasid mites of murine rodents on birds. Dokl. AN BSSR 7 no.9:642-643 S '63. (MIRA 17:1)

1. Predstavleno akademikom AN BSSR R.S. Chebotarevym.

SAVITSKIY, B.P.

Use of hexachloran NBK (G-17) smoke pots in controlling tick-borne encephalitis carriers. Zdrav. Bel. 9 no.8:56-57 Ag '63 (MIRA 17:3)

1. Iz Belorusskogo instituta epidemiologii, mikrobiologii i gigiyeny (dir. V.I. Votyakov).

AUTHOR: Savitskiy, B.V., (Leningrad) SOV-26-58-11-39/49

TITLE: The Enigmatic Traumata of Speckled Trout (Zagadochnyye travmy foreli-pestrushki)

PERIODICAL: Priroda, 1958, Nr 11, pp 114 - 115 (USSR)

AUTHOR: The author explains the phenomenon of conspicuous distortions of the spine in speckled trout which he had caught in rapid brooks as well as in standing waters by the fact that the young hatch from the eggs within a small pebble and gravel heap fanned over the eggs by the parent trout by aid of their tail fins. The extremely narrow space within this heap causes the spinal distortions in some of the young.

1. Fishes---Pathology

Card 1/1

Savitskiy, D.V.

SAVITSKIY, D.V.; GERASKEVICH, Yu.P.

Investigating the state of stress in metal surface layers under the effect of variable direction sliding friction. Fiz. met. i metalloved. 4 no.3:519-526 '57. (MIRA 10:11)

1. Sibirskiy fiziko-tekhnicheskiy nauchno-issledovatel'skiy institut.
(Deformations (Mechanics)) (Friction)

L 8451-66 EWT(m)/EWP(w)/EPF(n)-2/FCC/FCS(f)/T/EWP(t)/EWP(n)/EWP(b)/EWA(c)

ACC NR: AR5024520 IJP(c) JD/JG/WB CH/0080/64/002/001/0020/0021

SOURCE: Science abstracts of china, Technical sciences, v. 2, no. 1, 1964, 20-21

AUTHOR: Wang, Nai-li (3769/0035/4721); Baron, V.V.; Savitskiy, E. M.

TITLE: Structure and properties of the vanadium rich corner of vanadium-niobium-tungsten ternary alloy system

CITED SOURCE: Chin hsu hsueh pao (Acta metallurgica sinica), v. 6, no. 2, 1963, 155-162

TOPIC TAGS: ternary alloy, vanadium, niobium, tungsten, solid mechanical property, metallography, thermal analysis, phase diagram, solid solution

TRANSLATION: The phase equilibrium diagram of the vanadium-rich corner of the vanadium-niobium-tungsten ternary alloy system (up to 25% Nb, 16.6% W) has been established by means of metallographic study, thermal analysis and testing of mechanical properties. An investigation of the vertical sections with a ratio of Nb/W = 2, as well as Nb/W = 1/2, has been made. It is shown that within the range of the alloy compositions under investigation there exists a series of continuous solid solutions. The authors consider that the identical crystal lattice, close atomic radii and similar electron structures of these three metals are a possible explanation for such complete miscibilities. The variation in property of alloys in this system accords

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ACC NR: AR5024520

with the characteristics of an alloy system having unlimited solid solubility in solid state. By adding niobium and tungsten to "carbon-thermal" vanadium of a certain purity, its hardness is raised appreciably at both room and high tempe atures. At the same time, its placticity and ultimate strength during compression tests are lowered. It is believed that these ternary alloys would have good mechanical properties at high temperatures, should purer vanadium be used as a solvent. It is also found that niobium improves the oxidation resistance of vanadium at 1,000° and 1,200°C, while tungsten makes it deteriorate above 1,000°C. At both temperatures vanadium and its alloys are seriously oxidized.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000

Card 2/2

LAMBIN, Nikolay Venediktovich; SAVITSKIY, F.I., red.; VEREVKINA, N.M., red.; BELEN'KAYA, I.Ye., tekhred.

[Symmetry method and its use in the solving of boundary value problems] Metod simmetrii i ego primenenie k resheniiu kraevykh zadach. Minsk, Izd-vo Belgosuniv. imeni V.I.Stalina, 1960. 41 p. (MIRA 14:3)
(Boundary value problems)

MAKSIN, Vladimir Il'ich; SAVITSKIY, F.I., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Vulgar bourgeois economics of the end of the 19th and beginning of the 20th century] Vul'garnaia burzhuaznaia politicheskaia ekonomiia kontsa XIX - nachala XX v.; uchebnoe posobie. Minsk, Belorusskii gos. in-t nar. khoz. im. V.V.Kuibysheva, 1960. 49 p. (MIRA 14:7)
(Economics)

AL'TSHULER, Isaak Saulovich; SAVITSKIY, F.I., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Collection of problems in projective geometry; textbook for students of correspondents courses in machine building and technology at institutes of higher education] Sbornik zadach po nachertatel'noi geometrii; uchebnoe posobie dlia studentov-zaochnikov mashinostroitel'nykh i tekhnologicheskikh spetsial'nostei vtuzov. Minsk, Izd-vo Belgosuniv. im. V.I.Lenina, 1960. 118 p. (MIRA 14:12)
(Geometry, Projective—Problems, excercises, etc.)

TRUKHAN, I.I., dotsent, red.; SAVITSKIY, F.I., red.; MISHKO, A.I., tekhred.

[Physical and economic geography of the White Russian S.S.R.] Fizicheskaia i ekonomicheskaia geografiia BSSR; sbornik statei. Minsk, 1960. 18[illegible] p. (MIRA 14:2)

1. Minsk, Universitet.
(White Russia--Geography)

SKUMAN, Andrey Petrovich; SAVITSKIY, F.I., red.; DUBOVIK, A.P., tekhn. red.

[Development of production relations during the transition to communism] Razvitie proizvodstvennykh otnoshenii pri perekhode k kommunizmu. Minsk, Izd-vo M-va vysshego srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 33 p. (MIRA 15:1)

(Labor and laboring classes)

BABITSKIY, Boris Yevseyevich, dotsent; DAVIDOVICH, Aleksandr Mikhaylovich, starshiy nauchnyy sotr.; SAVITSKIY, F.I., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Organization of the Supreme Economic Council and its local organs, 1917 - 1932] Organizatsiia Vysshego soveta narodnogo khoziaistva i ego mestnykh organov, 1917-1932; uchebnoe posobie. Minsk, Izd-vo Belgosuniv. im. V.I.Lenina, 1961. 58 p. (MIRA 15:1)

1. Institut gosudarstva i prava AN SSSR (for Davidovich). 2. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina (for Babitskiy).
(Russia—Economic policy)

ZAV'YALKOV, Afanasiy Georgiyevich; SAVITSKIY, F.I., red.; DUBOVIK, A.P., tekhn. red.

[Price planning] Planirovanie tsen. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1962. 98 p. (MIRA 15:5)

(Prices)

YATSKEVICH, Anatoliy Fedorovich; SAVITSKIY, F.I., red.; KISLYAKOVA, M.N., tekhn. red.

[Lenin's ideas on labor productivity and the building of communism] Leninskie idei o proizvoditel'nosti truda i stroitel'stvo kommunizma. Minsk, Izd-vo M-va vysshego srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1963. 109 p. (MIRA 16:8)

(Lenin, Vladimir Il'ich, 1870-1924)
(Labor productivity)

TOMASHEVICH, V.A., red.; BAZYLEV, T.A., red.; GRISHANOVICH, P.U., red.; ROGOVSKIY, I.T., red.; BEREZKIN, Yu.I., red.; SAVITSKIY, F.I., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Collected articles on economic problems]Sbornik po ekonomicheskim voprosam. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR. 1961. 163 p. (MIRA 16:2)

(White Russia--Economics)

V-[illegible]N, Vladimir Pavlovich, kand. ekon. nauk, dots.; LITVINSKAYA, T.S., red.; [illegible], P.I., red.

[Imperialist militarism as a threat to peace] Imperialisticheskii militarizm - ugroza miru. Minsk, Vysshaia shkola, 1964. 158 p. (MIRA 17:10)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447410012-7"

SAVITSKIY, F. S.

PA 49/49T103

USSR/Physics Dec 48
Material Test Techniques

"Distribution of Cold Working Around a Conical Impression," F. S. Savitskiy, E. A. Bandyshev, M. V. Yakntovich, Sverdlovsk Affiliate, All-Union Sci Res Inst of Metrol, 34 pp

"Zavod Lab" Vol XIV, No 12

Conical indentation was produced by pressure on a specimen of hardened and tempered steel having a fine-grained and homogeneous structure. Diameter of the base of the indentation was 4 mm, and hardness of the area around this was determined with a Vickers hardness tester after

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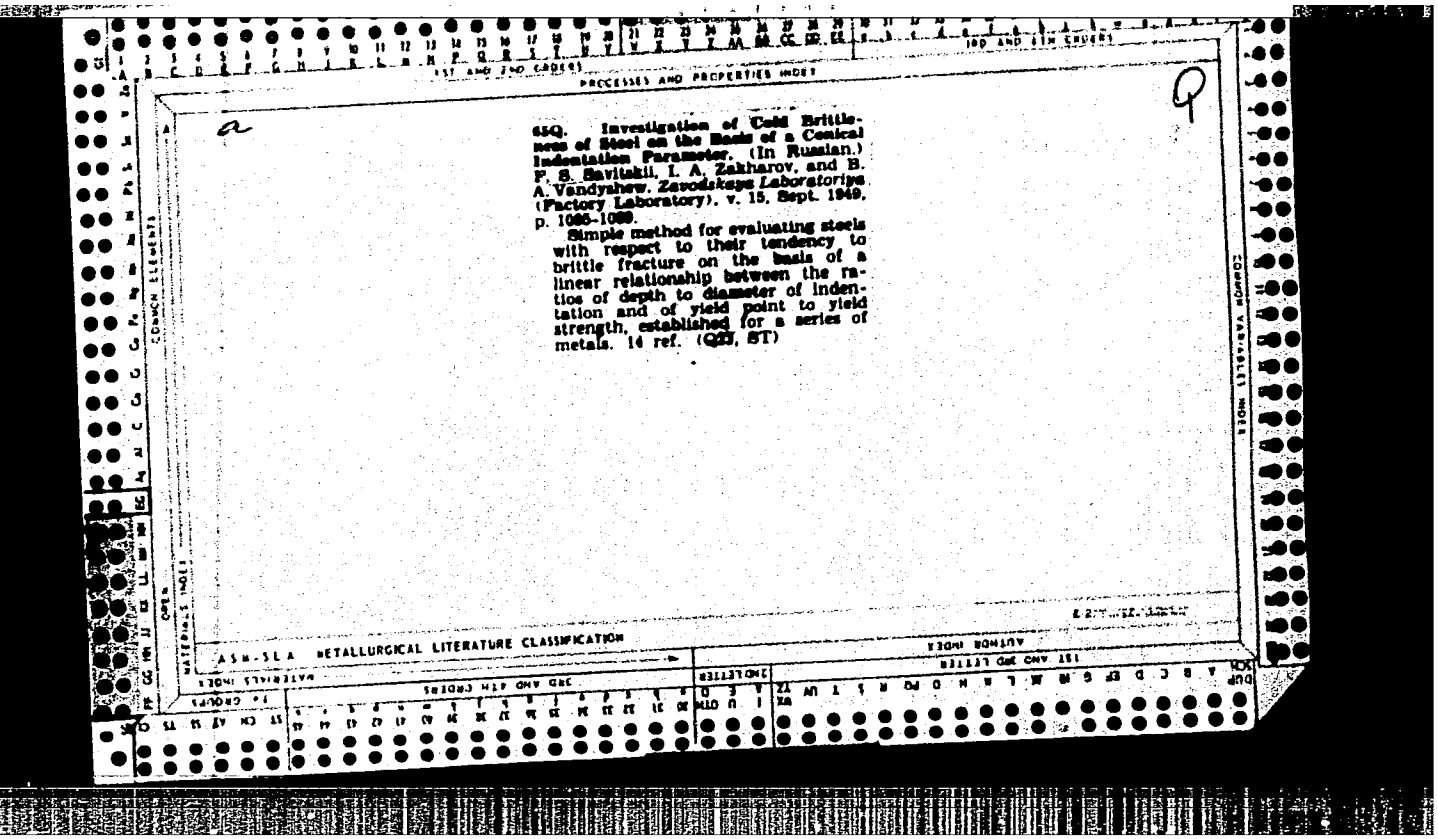
USSR/Physics (Contd) Dec 48

mechanical and electrolytic polishing. Indentations were distributed radially around the edge of the hole at intervals of one mm, and results are presented in the form of lines of equal hardness. Similar tests were carried out on compressed specimens, and results of these are presented in the same way and in relation to deformation.

49/49T103



PROCESSES AND PROPERTIES INDEX

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615Q. **Investigation of Cold Brittleness of Steel on the Basis of a Conical Indentation Parameter.** (In Russian.) P. S. Savitskii, I. A. Zakharov, and B. A. Vandyshev. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 15, Sept. 1949, p. 1085–1089.

Simple method for evaluating steels with respect to their tendency to brittle fracture on the basis of a linear relationship between the ratios of depth to diameter of indentation and of yield point to yield strength, established for a series of metals. 14 ref. (Q27, ST)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SAVITSKIY, F.S.; VANDYSHEV, V.A.

Determination of yield and strength limits without testing actual specimens. Izm.tekh. no.6:26-29 N-D '55. (MLRA 9:3)
(Strength of materials) (Steel alloys--Testing)